



ASEAN STRATEGIC PLAN ON
ENVIRONMENT
(ASPEN) 2016-2025

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REGIONAL OVERVIEW

INTRODUCTION

The Association of Southeast Asian Nations, or ASEAN, was established on 8 August 1967 in Bangkok, Thailand, with the signing of the ASEAN Declaration (Bangkok Declaration)¹. The members of ASEAN are Brunei Darussalam, Cambodia, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Viet Nam.

At the 9th ASEAN Summit in 2003, the ASEAN Leaders adopted the Declaration of ASEAN Concord II (Bali Concord II)², in which they resolved that an ASEAN Community shall be established comprising three pillars, namely ASEAN Political-Security Community (APSC), ASEAN Economic Community (AEC), and ASEAN Socio-Cultural Community (ASCC), that would be closely intertwined and mutually reinforcing for the purpose of ensuring durable peace, stability and shared prosperity in the region.

ASEAN Charter was adopted by the ASEAN Leaders on 20 November 2007 and entered into force on 15 December 2008. The ASEAN Charter transforms ASEAN from a loose coalition of nations into a legal and rules-based organisation, thus strengthening the institutional framework for various ASEAN bodies to operate.

2015 marks a critical juncture for ASEAN as it entered into an ASEAN Community through a Declaration signed by ASEAN Leaders at their 27th Summit in Kuala Lumpur on 22 November 2015. An ASEAN Community is the realisation of the vision articulated eight years before by ASEAN Leaders for the regional organisation to achieve community status by 2015, as reflected in the guiding document *Roadmap for an ASEAN Community: 2009-2015* endorsed by ASEAN Leaders at their 14th ASEAN Summit in Cha-am, Thailand.

ASEAN 2025: Forging Ahead Together, which was simultaneously endorsed by the Leaders at their 27th Summit, charts the path for ASEAN Community over the ten-year period of 2016-2025. It is a forward-looking roadmap consisting of the Kuala Lumpur Declaration on ASEAN 2025: Forging Ahead Together, ASEAN Community Vision 2025, ASEAN Political-Security Community (APSC) Blueprint 2025, ASEAN Economic Community (AEC) Blueprint 2025, and ASEAN Socio-Cultural Community (ASCC) Blueprint 2025. The roadmap articulates ASEAN goals and aspirations to realise further consolidation, integration and stronger cohesiveness of ASEAN Member States as a Community.

To support the implementation of the *ASEAN 2025: Forging Ahead Together*, the 26th Meeting of the ASEAN Senior Officials on Environment (ASOEN) on 9-10 September 2015 agreed to develop an ASEAN Strategic Plan on Environment (ASPEN). ASPEN shall serve as a comprehensive guide for ASEAN cooperation on environment for the ten-year period of 2016 to 2025.

ASEAN AND THE ENVIRONMENT

The ASEAN region is endowed with rich natural resources that sustain essential life support systems, both for the region and the world. Apart from providing water, food and energy, these natural resources play an important role in sustaining a wide range of economic activities and livelihoods.

¹ The Asian Declaration (Bangkok Declaration) Bangkok, 8 August 1967 (<http://asean.org/the-asean-declaration-bangkok-declaration-bangkok-8-august-1967/>)

² Declaration of ASEAN Concord II (Bali Concord II) (http://asean.org/?static_post=declaration-of-asean-concord-ii-bali-concord-ii)

The ASEAN region has a total land area of 432,563,000 hectares (as of 2013), 3 per cent of the world's total land area, with the total forest area of 211,172,000 hectares (as of 2012)³. Although occupying only three per cent of the earth's total surface, the ASEAN region contains 18 per cent of the plants and animals⁴ and is home to three of the 17 known mega-diverse countries (i.e. Indonesia, Malaysia and the Philippines). ASEAN has one-third, or 86,025 square kilometres of all known coral reef areas in the world. 60 per cent of the tropical peatlands are in Southeast Asia (23 million hectares). These peatlands are rich in biodiversity with many endemic and rare endangered species and unique ecosystem services, storing more than 80 billion tonnes of carbon in forests and in peat layers up to 25 metres in depth and contributing significantly to the livelihoods of a substantial number of people, including poor communities that live in and around peatlands.

The region, however, is confronted by massive environmental degradation, including habitat and species loss. Population growth, economic development and gaps in governance are identified as the main drivers of environmental change with particular facets such as energy, transport, urbanisation and globalisation exerting pressure⁵. The total population of ASEAN countries in 2015 was 629 million, the third largest after China and India, with almost 50 per cent of which live in urban areas⁶. The region's population is projected to rise to 740 million by 2035⁷, with more than half living in urban areas. In the period of 2010 to 2015, the economy in ASEAN grew by almost 5 per cent.

With a relatively high population and high rate of urbanisation, ASEAN faces unprecedented environmental challenges. A large proportion of the population and economic activity in ASEAN is concentrated along coastlines, making the region highly vulnerable to climate change impacts, such as sea level rise that modifies habitats for coastal biodiversity, declining agricultural production and human health, water stress, and climate-induced disasters. In 2011, urban air pollution is estimated to have caused 1.3 million premature deaths globally, more than 60 per cent of which occurred in Asia⁸. Waste management remains a challenge especially in urban areas in ASEAN. The majority of peatland forests in Southeast Asia have been logged for their valuable timber, while more than a third have been cleared and drained for agriculture and plantations such as palm oil, rubber and pulpwood. Peatland degradation in Southeast Asia releases an estimated 2 billion tonnes of carbon dioxide (CO₂) per year which is equivalent to more than 5 per cent of the global fossil fuel emissions per annum, or 25 per cent of global emissions from land use and land use change. In the past 15 years, 4 million hectares of peatlands have been burnt in Southeast Asia, leading to large-scale transboundary smoke pollution.

Recognising the importance of coordinated regional responses to addressing the environmental challenges and moving towards sustainable development, ASEAN Member States have worked closely together since 1977 in promoting environmental cooperation at national, regional and global levels. Practically all ASEAN Member States are Parties to key international conventions related to climate change, biological diversity and chemicals and waste management.

Following severe land and forest fires in 1997-1998, ASEAN Member States (AMS) signed the ASEAN Agreement on Transboundary Haze Pollution (AATHP) on 10 June 2002 in Kuala Lumpur, Malaysia, to prevent, monitor, and mitigate land and forest fires to control transboundary haze pollution through concerted national efforts, regional and international cooperation. The Agreement entered into force in 2003 with the required ratifications from six member countries and has subsequently been ratified by all ASEAN Member States.

³ ASEAN Secretariat (2016) ASEAN Statistical Yearbook 2015. Jakarta: ASEAN Secretariat.

⁴ ACB (2010) ASEAN Biodiversity Outlook. ASEAN Centre for Biodiversity.

⁵ UNEP (2016) Global Environment Outlook (GEO-6) Regional Assessment for Asia and the Pacific for Asia and the Pacific. United Nations Environment Programme.

⁶ ASEAN Secretariat (2016) ASEAN Statistical Yearbook 2015. ASEAN Secretariat, Jakarta, Indonesia.

⁷ ASEAN Secretariat (forthcoming) Fifth ASEAN State of Environment Report. ASEAN Secretariat, Jakarta, Indonesia.

⁸ WHO (2008) Global Burden of Disease Report. World Health Organization; WHO (2012) in Clean Air Asia Initiative for Asian Cities, CAI-Asia.

ASEAN Member States have also made significant progress in implementing the ASEAN Socio-Cultural Community Blueprint 2009-2015,], with various regional programmes and initiatives. However, as ASEAN enters ASEAN Community 2015, ASEAN Member States need to strengthen their cooperation on environmental protection with a more integrated and directed approach, in order to contribute to the global aspiration for sustainable development and its renewed forward-looking vision for 2025.

GLOBAL RESPONSE TO ENVIRONMENTAL CHALLENGES

In the same year that ASEAN entered into an ASEAN Community in 2015, the global community of nations through the United Nations forged commitment with all of its 193 member states to realise in the next fifteen years a comprehensive set of universal and transformative Sustainable Development Goals (SDGs) for the 2030 Agenda for Sustainable Development. In 2016, ASEAN Member States have agreed that Thailand serve as the coordinator on behalf of ASEAN on matters related to SDGs and its alignment with ASEAN's priority areas as stipulated in the ASEAN 2025 Blueprints. In this regard, efforts are underway to compile and update a matrix detailing the complementarities between the priority actions under the ASEAN 2025 Blueprints and SDGs.

The Paris Agreement was also adopted in 2015 under the United Nations Framework Convention on Climate Change (UNFCCC) in connection to climate change, with commitments to come into effect by 2020. As of June 2017, nine of the ten ASEAN Member States have fully ratified the Agreement and all countries have submitted Intended Nationally Determined Contributions (INDCs) and a range of voluntary targets for greenhouse gas reduction, which act as a foundation for the implementation of the Paris Agreement.

ASEAN Member States have also participated in the Third UN World Conference on Disaster Risk Reduction in 2015 in Sendai, Japan where the Sendai Framework for Disaster Risk Reduction 2015-2030 was adopted charting the priority actions to be undertaken on disaster risk reduction by the concerned parties over a 15-year timeframe up to 2030. The framework outlines seven clear targets and four priorities for action to prevent new and reduce existing disaster risks: (i) Understanding disaster risk; (ii) Strengthening disaster risk governance to manage disaster risk; (iii) Investing in disaster reduction for resilience and; (iv) Enhancing disaster preparedness for effective response, and to "Build Back Better" in recovery, rehabilitation and reconstruction.

The implementation of the Strategic Plan for Biodiversity 2011-2020 under the Convention on Biological Diversity is ongoing and has resulted in strong progress and commitment of Parties in achieving the Aichi Biodiversity Targets, to which ASEAN Member States are also parties to.

Habitat III or the United Nations Conference on Housing and Sustainable Urban Development which was held in October 2016 adopted a New Urban Agenda. ASEAN Member States have similarly committed themselves to fulfilling the goals as stated in this newly-adopted agenda.

The Basel, Rotterdam, and Stockholm (BRS) conventions, together with Minamata Convention on Mercury and the Montreal Protocol on Substances that Deplete the Ozone Layer, have been addressing the opportunities and challenges facing various polluting chemicals and wastes including their appropriate management systems. ASEAN Member States have likewise been committed to achieving the aims as specified in some of these conventions.

ASEAN 2025: FORGING AHEAD TOGETHER

The ASEAN 2025: Forging Ahead Together, which contains APSC, AEC, and ASCC Blueprints 2025 highlighted in the introduction, forms the current policy framework for ASEAN cooperation until 2025. ASEAN priority areas of cooperation on environment are outlined mainly in the ASCC Blueprint 2025, with strong inter-linkages with relevant elements of other Community Blueprints.

The ASCC Blueprint 2025 envisions ‘an ASEAN Community that engages and benefits the peoples and is inclusive, sustainable, resilient, and dynamic’. Guided by the Vision, ASEAN cooperation on environment particularly focuses on, but is not limited to, the following key result areas under the characteristic ‘Sustainable’ of the ASCC Blueprint 2025:

- C.1 Conservation and Sustainable Management of Biodiversity and Natural Resources
- C.2 Environmentally Sustainable Cities
- C.3 Sustainable Climate
- C.4 Sustainable Consumption and Production

As environmental issues are often cross-sectoral in nature and inter-linked with other concerned areas, ASEAN cooperation on environment also addresses, directly or indirectly, other relevant strategic measures in all three Blueprints, as well as vice versa. Environmental issues are therefore addressed not only by ASOEN and its subsidiary bodies, but also by other ASEAN Community pillars, especially those overseeing the issues of forestry, fisheries and agriculture; transport and energy; disaster management; tourism; education; youth; health; social welfare; maritime cooperation and non-traditional security. Annex 1 maps out strategic measures related to environment across all three Community blueprints and the relevant sectoral bodies and work plans.

ASEAN VISION 2025 ON ENVIRONMENT

ASEAN cooperation on environment strives to contribute to sustainable development, in the region through coordinated efforts on conservation of sustainable management of biodiversity and natural resources and promotion of environmentally sustainable cities, response to climate change, and sustainable consumption and production.

To achieve the above Vision, ASEAN cooperation on environment will continue to focus on awareness promotion, institutional strengthening, multi-stakeholder partnership, harmonization of policies and enhanced coordinated position at international events, science-policy linkage, and community engagement.

ASEAN STRATEGIC PLAN ON ENVIRONMENT (ASPEN) 2016-2025: STRATEGIC PRIORITIES

ASEAN Strategic Plan on Environment (ASPEN) 2016-2025 translates the relevant characteristics and key result areas of the ASEAN 2025: Forging Ahead Together into more detailed plans of action, which shall serve as a comprehensive guide for ASEAN cooperation on environment for the period of 2016 to 2025. The ASPEN consists of action plans for the following seven agreed strategic priorities with selected programmes, outputs, and activities based on existing cooperation, emerging needs of ASEAN Member States, and commitments to address relevant issues in the global agenda. The seven strategic priorities under the ASPEN are:

1. Nature conservation and biodiversity
2. Coastal and marine environment
3. Water resources management
4. Environmentally sustainable cities
5. Climate change
6. Chemicals and waste
7. Environmental education [and sustainable consumption and production]

OVERVIEW OF STRATEGIC PRIORITIES UNDER THE ASEAN STRATEGIC PLAN ON ENVIRONMENT (ASPEN)

Strategic Priorities	Objectives	Main Implementing Body(-ies)	Programmes
Strategic Priority 1: Nature Conservation and Biodiversity	<ol style="list-style-type: none"> 1. To ensure that by 2025, ASEAN's biodiversity is valued, conserved, restored, wisely used and delivers benefits essential for its people. 2. To promote natural resiliency and use of integrated ecosystem-based approaches (to climate change adaptation and disaster risk reduction). 	ASEAN Working Group on Nature Conservation and Biodiversity (AWGNCB) / ASEAN Centre for Biodiversity (ACB)	<ol style="list-style-type: none"> 1. Key Terrestrial Biodiversity Area Conservation including Protected Areas <ol style="list-style-type: none"> a) Protected Areas (including Eco-tourism and Biodiversity) b) Species Conservation c) Invasive Alien Species d) Mainstreaming Biodiversity including Climate Change and Biodiversity e) Ecosystem Restoration f) Health and Biodiversity 2. Urban Biodiversity 3. Agricultural Biodiversity 4. Access and Benefit Sharing 5. Communication Education and Public Awareness (CEPA) (including Biodiversity Information Management) 6. ASEAN Centre for Biodiversity
Strategic Priority 2: Coastal and Marine Environment	<ol style="list-style-type: none"> 1. To ensure ASEAN's coastal and marine environment are sustainably managed; representative ecosystems, pristine areas and species are protected; economic activities are sustainably managed; and public awareness of the coastal and marine environment instilled. 2. To conserve clean and healthy coastal and marine environments for ASEAN's sustainable development by reducing anthropogenic threats to coastal and marine ecosystems. 3. To enhance inter-agency and inter-sectoral coordination at the regional and international levels for achieving sustainable management of coastal and marine environment and responding to transboundary issues through good management practices and strengthened policies. 	ASEAN Working Group on Coastal and Marine Environment (AWGCME) / ACB	<ol style="list-style-type: none"> 1. Key Coastal and Marine Area Conservation 2. Endangered Coastal and Marine Species Conservation 3. Tanker Desludging and Oil Spill Reduction 4. Coastal and Marine Pollution Mitigation (nutrients, marine debris, eutrophication etc.) 5. Coastal and Marine Invasive Alien Species 6. Climate Change Issues and Impacts in Coastal Areas 7. Integrated Coastal Management (ICM) and Marine Spatial Planning (MSP)
Strategic Priority 3: Water Resources Management	<ol style="list-style-type: none"> 1. To promote Integrated Water Resource Management (IWRM) for sustainability of water resources, equitable accessibility, and sufficient water quantity 	ASEAN Working Group on Water Resources Management	<ol style="list-style-type: none"> 1. IWRM Country Strategy Guideline and Indicator Framework Implementation 2. Public Awareness and Cross-sectoral

	<p>of acceptable quality to meet the needs of the people, economy and environment.</p> <ol style="list-style-type: none"> To manage water resources efficiently and effectively in order to provide adequate and affordable water services. To reduce the number of people without sustainable access to safe drinking water and improved sanitation. To reduce risks and impacts of water-related disasters (flood, drought, storm, etc.) and strengthen resilience of social and ecosystem. 	(AWGWRM)	<p>Coordination</p> <ol style="list-style-type: none"> Water Conservation Water Quality and Sanitation Water-related Disasters
Strategic Priority 4: Environmentally Sustainable Cities	<ol style="list-style-type: none"> To ensure that cities/urban areas in ASEAN are environmentally sustainable, while meeting the social and economic needs of the people. To promote sustainable urbanisation and climate resilient cities in ASEAN towards a clean and green ASEAN. 	ASEAN Working Group on Environmentally Sustainable Cities (AWGESC)	<ol style="list-style-type: none"> Sustainable Urban Planning, Development, and Implementation Climate Resilient and Low Carbon Cities
Strategic Priority 5: Climate Change	<ol style="list-style-type: none"> To enhance regional and international cooperation to address climate change and its impacts on socio-economic development, health and the environment in ASEAN Member States through supporting mitigation, adaptation, technology transfer, capacity building, finance, cross sectoral coordination and global partnerships. Contribute actively to the climate related global framework, such as the Paris Agreement under the UNFCCC, and Agenda 2020 for Sustainable Development and Sustainable Development Goals. Coordinate activities within ASEAN member states on climate change to share best practices and lessons learned as well as to facilitate access to climate finance. 	ASEAN Working Group on Climate Change (AWGCC)	<ol style="list-style-type: none"> Adaptation and Resilience Mitigation Technology Transfer Climate Finance Cross Sectoral Coordination and Global Partnership
Strategic Priority 6: Chemicals and Waste	<ol style="list-style-type: none"> To further strengthen regional coordination and cooperation in addressing wastes and chemicals-related issues including controlling transboundary movement of hazardous waste under relevant multilateral environmental agreements, such as Basel, Rotterdam, Stockholm, and Minamata conventions, and Montreal Protocol as well as internationally agreed-upon systems, such as the Globally Harmonised System of Classification and 	ASEAN Working Group on Chemicals and Waste (AWGCW)	<ol style="list-style-type: none"> Hazardous Waste Management and Other Waste Defined Under the Basel Convention Cooperation on Transboundary Movements of [Hazardous] Chemical and Hazardous Waste Sound Chemicals Management Environmentally Sound Management Technologies (EST) towards Green Industries

	<p>Labelling of Chemicals (GHS).</p> <ol style="list-style-type: none"> To achieve the environmentally sound management of hazardous chemicals and wastes throughout their life cycle, in accordance with agreed international frameworks. To reduce the growing threats of hazardous chemicals and wastes to human health and environment through, among others, enhancing the regional cooperation in preventing the illegal traffic of transboundary movement of hazardous chemicals and waste, and capacity building related to good management practice in handling chemicals and wastes. 		<ol style="list-style-type: none"> ASEAN Presence in the Global Community Chemicals and Hazardous Wastes Accident Prevention, Preparedness and Emergency Responses Remediation of Contaminated Sites from Chemicals and Hazardous Wastes
<p>Strategic Priority 7: Environmental Education [and Sustainable Consumption and Production]</p>	<ol style="list-style-type: none"> To promote environmental protection through effective environmental education and awareness programmes that enhance capacity and capability to adapt and respond to current and emerging environmental threats and challenges, so as to create a dynamic, sustainable, resilient ASEAN Community that will proactively contribute to the achievement of global sustainable development goals 	<p>ASEAN Working Group on Environmental Education (AWGEE)</p>	<ol style="list-style-type: none"> ASEAN Eco-Schools Programme ASEAN Green Higher Education Programme Regional Communication, Education and Public Awareness (CEPA) Initiatives Sustainable Consumption and Production (SCP)

IMPLEMENTATION ARRANGEMENTS

INSTITUTIONAL FRAMEWORK

In the preamble to the ASEAN Charter the ASEAN Leaders resolved to ensure sustainable development for the benefit of present and future generations and to place the well-being, livelihood and welfare of the people at the centre of the ASEAN community building process. The Charter reaffirms, as one of its fundamental principles, the protection of the region's environment, the sustainability of its natural resources, and the high quality of life of its people.

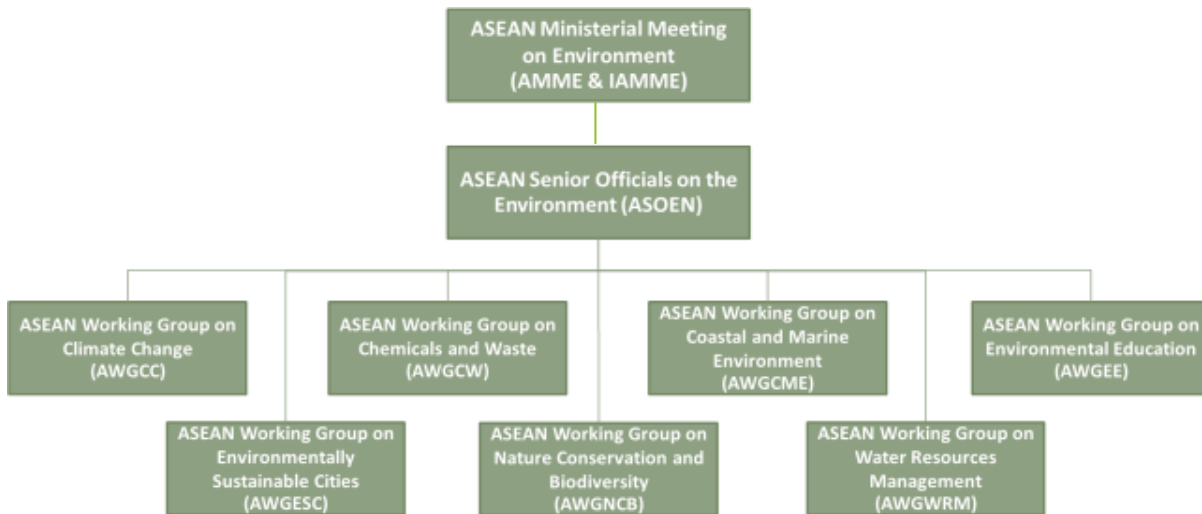
ASEAN Ministerial Meeting on Environment (AMME), a sectoral ministerial body listed under Annex 1 of the ASEAN Charter, who meets once every two years, will continue to provide policy and strategic guidance related to ASEAN cooperation on environment and the implementation of ASPEN.

AMME is assisted by ASEAN Senior Officials on Environment (ASOEN), who meet annually, and shall provide strategic guidance in the implementation and monitoring and evaluation of ASPEN.

Under the ASOEN, subsidiary thematic Working Groups will continue to lead the technical and operational implementation of ASPEN. ASOEN shall provide overall supervision of the Working Groups to achieve efficiency in the use of resources, and create greater synergies for a more holistic implementation of ASPEN. There are seven (7) working groups set up to support the implementation of the ASPEN. These working groups shall exercise oversight functions over programmes and activities developed under each action plan.

- ASEAN Working Group on Nature Conservation and Biodiversity (AWGNCB)
- ASEAN Working Group on Coastal and Marine Environment (AWGCME)
- ASEAN Working Group on Water Resources Management (AWGWRM)
- ASEAN Working Group on Environmentally Sustainable Cities (AWGESC)
- ASEAN Working Group on Climate Change (AWGCC)
- ASEAN Working Group on Chemicals and Waste (AWGCW)
- ASEAN Working Group on Environmental Education (AWGEE)

Also listed under Annex 1 of the ASEAN Charter is the Conference of Parties to the ASEAN Agreement on Transboundary Haze Pollution (COP), consisting of the ASEAN Ministers responsible for environment. The two sectoral ministerial bodies, e.g. AMME and COP, operate under their respective mandates. However, the cross-cutting nature of their work mutually reinforces each other in implementing environment-related aspects of the ASCC Blueprint 2025. A clear example of this is the complementarities between the Roadmap towards ASEAN Cooperation on Transboundary Haze Pollution Control with Means of Implementation (ASEAN Haze-Free Roadmap), which was adopted by COP-12 to AATHP and noted by the Leaders at the 28th and 29th ASEAN Summit, and relevant strategic priorities in the ASPEN.



The ASEAN Secretariat provides support for all these institutional bodies, mainly acting as a resource base, and providing advice and information. The ASEAN Secretariat also coordinates the implementation of regional activities and programmes, in addition to providing support services for the meetings of the ASEAN bodies. The ASEAN Secretariat ensures proper coordination on related activities of various other sectoral bodies so as to promote synergy and avoid duplication. ASEAN Secretariat also coordinates between ASEAN bodies and its programmes with those of ASEAN Dialogue Partners and other international organisations in terms of resource mobilisation, programme implementation and in general enhancing institutional linkages.

Indonesia:

[The ASEAN Specialised Meteorological Centre (ASMC) was established on 2 January 1993 to enhance regional capacity and strengthen support in the provision of meteorological services. The ASMC shall continue to provide expert advice and information to ASOEN in addressing environmental challenges [in the region [with the exception of haze-related issues that are going to be transferred to ACC THPC upon its establishment].

Cambodia:

[The ASEAN Specialised Meteorological Centre (ASMC) was established on 2 January 1993 to enhance regional forecasting capacity and capability, strengthen support in the provision of meteorological services and aiding decision making process]. (Supported by Indonesia; and not supported by Singapore)

ASEC:

[The ASEAN Specialised Meteorological Centre (ASMC) was established on 2 January 1993 to enhance regional capacity and strengthen support in the provision of meteorological services. The ASMC shall continue to provide expert advice and information to ASOEN in addressing environmental challenges [in the region (supported by Brunei Darussalam, Cambodia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, Viet Nam)

ASEAN Centre for Biodiversity (ACB), established in 2005 in Los Banos, Philippines, shall continue to facilitate cooperation and coordination among ASEAN Member States and with relevant national government, regional and international organisations, on the conservation and sustainable use of biological diversity and the fair and equitable sharing of benefits arising from the use of such biodiversity in the ASEAN region.

CROSS-SECTORAL COORDINATION

Due to the cross-sectoral nature of environmental issues, coordination is critical not only among ASOEN subsidiary bodies, but also among relevant sectoral bodies under the ASCC, APSC and the AEC pillars for implementation of ASPEN. An institutionalised cross-sectoral coordination mechanism may be established in the future upon consultation among ASOEN and other concerned sectoral bodies.

COLLABORATIVE PARTNERSHIP

Effective collaborative partnership with various stakeholders is important for successful implementation of ASPEN. Existing and potential partners are ASEAN Dialogue and Development Partners, international organisations, private sector, civil society, local governments, academia, and media.

Partners who wish to be involved in the implementation of the ASPEN 2016-2025 shall liaise with the ASEAN Secretariat, and/or ACB where appropriate. The proposed initiatives should be in line with and contribute to the identified strategic priorities and programmes in the relevant action plans, and subject to review by the respective ASOEN Working Groups for consideration and approval of ASOEN.

While each ASOEN working group and ASOEN itself would have a significant role to play in the development and nurturing of the partnerships with their respective collaborating partners, the ASEAN Secretariat, being the central key organisation in providing the necessary guidance to each of the ASEAN sectoral bodies, shall also assist in facilitating and maintaining such partnerships.

COMMUNICATION STRATEGY

For successful implementation of ASPEN, effective communication with various stakeholders and the public at large is important to generate support, garner awareness, and promote active participation of the whole society for the protection and preservation of environment.

ASEAN Communication Master Plan (ACMP), developed in 2014, provides the framework to communicate messages about the character, structure and overall vision of ASEAN and the ASEAN Community to key audiences including local communities of ASEAN Member States, women and children, youth, governments, businesses, civil society organisations (CSOs), influencers, media and global audiences.

Specifically, the ACMP provides direction on a spectrum of communications activities across traditional media, electronic and social media, and in market events, to access stakeholders of all groups and ages and which can be implemented at the ASEAN Member State level as well as ASEAN-wide.

The ACMP shall also serve as a reference in developing and implementing detailed communication strategy specifically tailored for environmental issues and the implementation of ASPEN as necessary.

As stated in the ASCC 2025 Blueprint, “in line with the ACMP, the ASCC in close collaboration with relevant ASEAN Organs and Bodies and stakeholders will develop necessary platforms, mechanisms, strategies and initiatives to promote awareness and appreciation of the ASCC Blueprint 2025 in order to achieve greater communication impact”.

In this regard, ASOEN already has several key products / initiatives which provide avenues for communication and/or outreach to the public at large such as the periodic ASEAN State of the Environment Reports (SOERs); ASEAN Biodiversity Outlooks (ABOs); ASEAN Environmentally Sustainable Cities and ASEAN Eco-schools awards; ASEAN Environment Website and Haze Action Online; and other Communication, Education and public awareness (CEPA) related activities / materials. CEPA components are also included in the programmes and activities identified under ASPEN.

RESOURCE MOBILISATION

Mobilisation of resources in various forms, such as human, financial, or material resources, is key in ensuring successful implementation of ASPEN. ASEAN Member States contribute resources to the implementation of ASPEN in different ways, such as through support for the operations of the ASEAN Secretariat, in-kind contribution to project implementation, or voluntary contribution to established ASEAN funds including the ASEAN Biodiversity Fund.

Aside from ASEAN Member States, other potential funding sources for the implementation of ASPEN within ASEAN cooperation mechanism are ASEAN-Dialogue Partners trust funds, such as ASEAN Plus Three Cooperation Fund, China Cooperation Fund, ASEAN-Japan Integration Fund, ASEAN-ROK Cooperation Fund, and ASEAN-India Green Fund; or ASEAN-Dialogue Partners cooperation programmes such as Regional EU-ASEAN Dialogue Instrument (READI). ASEAN Secretariat will facilitate the ASEAN project appraisal and approval process for projects seeking funding support from these trust funds or cooperation programmes.

ASEAN will also continue to strengthen collaboration with dialogue and development partners, international or other regional and sub-regional organisations, CSOs, and other entities for resource mobilisation.

While ASOEN and its subsidiary bodies should be the key parties in identifying and sourcing the needed financial support to undertake their respective programmes, the ASEAN Secretariat, which is engaged alongside ASOEN in all of its activities and also serves as important conduit with ASEAN's various Dialogue and Development Partners and other external funding parties, shall also assist ASOEN in the mobilisation of resources for the implementation of its activities.

MONITORING AND EVALUATION (M&E)

MONITORING

An ASCC-wide Monitoring and Evaluation (M&E) framework has been developed based on the SMART (Specific, Measurable, Achievable, Realistic and Time-bound) approach to monitor, evaluate, and assess the attainment of objectives and outcomes under the 18 key result areas and the attainment of the 109 strategic measures operationalised by relevant sectoral bodies, as outlined in the ASCC Blueprint 2025.

Key Performance Indicators (KPIs) will be developed for the programmes and activities under each Strategic Priority outlined in the ASPEN, in line with the approved ASCC Blueprint 2025 M&E System. Since many of the environmental sector activities also relate to the United Nations Sustainable Development Goals (SDGs), consideration will be made where possible to align the indicators with those of the SDGs.

As environment-related issues are also found in the APSC and AEC pillars, cross-pillar monitoring mechanisms may also need to be put in place to track these cross-linkages among the three pillars of the ASEAN Community.

Annual reporting of progress and achievements or otherwise of each of the indicated activities would be made at each ASOEN working group as well as ASOEN meetings by respective proponents/chairs.

EVALUATION

Mid-term review and evaluation of progress under the ASPEN may be undertaken at the mid-point of the 10-year period of the entire ASCC Blueprint period, i.e. after 5 years of implementation. Final review and evaluation for the ASPEN will be completed at the end of the 10-year ASCC Blueprint period.

1. INTRODUCTION

A. BACKGROUND

The ASEAN region is rich in both ecological and social diversity. While it occupies only three per cent of the Earth's land, it covers four biodiversity hotspots and contains three of the world's 17 mega-diverse countries, which have exceptionally high levels of species endemism. The region's biodiversity and ecosystems are essential to the economic, social and environmental wellbeing of the ASEAN people, contributing to agriculture, food security and livelihoods, and the preservation of indigenous cultures.

The region is experiencing population growth, rapid economic development, regional economic integration, and increased consumption patterns, which pose threats to biota and ecosystems. These factors can lead to pressures on biodiversity and ecosystems through increased deforestation, agriculture intensification, land conversion, genetic erosion, and unsustainable harvesting of other natural resources such as fishing, mines, and wildlife species. Additionally, biodiversity loss and ecosystem degradation can have substantial impacts on people's livelihoods, food security, and wellbeing in the region. Sound management of nature conservation and biodiversity, thus, becomes integral to sustainably conserve ASEAN's biota and ecosystems.

ASEAN Member States recognise the importance of protecting and supporting ecosystems and biodiversity in the region. Countries are taking actions at national, regional and international levels in accordance with various domestic legislations and their respective priority areas, as well as international agreements including the United Nations Sustainable Development Goals and, in particular, Goal 15 (Life on Land) which focuses on protecting, restoring and promoting sustainable use of terrestrial ecosystems, sustainable management of forests, combating desertification, halting and reversing land degradation and halting biodiversity loss. ASEAN Member States are signatories to international environmental conventions related to ecosystem and biodiversity protection such as the Convention on Biodiversity (CBD), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and the Ramsar Convention on Wetlands. As part of the CBD, ASEAN Member States adopted the Strategic Plan for Biodiversity 2011-2020, which include the Aichi Biodiversity Targets⁹.

While these approaches are positive, more concerted efforts are needed to counter current trends in biodiversity loss. At the regional level, it is encouraging to note that countries in ASEAN have acknowledged the need for transboundary cooperation as an important tool for conservation. ASPEN provides a forward-looking plan to promote such concerted actions through cooperation and joint actions across ASEAN Member States that would allow for addressing the drivers of nature and biodiversity loss, whilst fostering a sustainable economy. Efforts under this strategic priority will focus on six programmatic areas: (i) conservation of key terrestrial biodiversity areas including Protected Areas, (ii) urban biodiversity, (iii) agricultural biodiversity, (iv) access and benefit sharing, (v) knowledge management for biodiversity conservation, and (vi) ASEAN Centre for Biodiversity.

B. ACCOMPLISHMENTS

ASEAN Member States have taken measures at national, regional and international levels to respond to biodiversity loss and ecosystem degradation and have made efforts to monitor and report progress. All ten countries have contributed to the Fifth National Report to the Convention on Biodiversity to report

⁹Strategic Plan for Biodiversity 2011-2020, including Aichi Biodiversity Targets (<https://www.cbd.int/sp/>)

progress on the implementation of national biodiversity strategies and action plans, and progress towards achieving the Aichi Biodiversity Targets¹⁰.

Countries have initiated transboundary initiatives within the ASEAN region to protect forest ecosystems. The Greater Mekong Sub-Region Biodiversity Corridors (BCI) Initiative and the Heart of Borneo (HoB) are examples of transboundary initiatives. BCI aims to maintain forest cover and biodiversity by conserving landscapes that intersect with the Mekong region economic corridors to prevent ecosystem fragmentation. HoB involves cooperation between Brunei Darussalam, Indonesia and Malaysia to protect the remaining forests on Borneo island, which covers an area of 22 million hectares¹¹.

Other initiatives in the region include the ASEAN Heritage Parks Programme, that aims to address biodiversity and climate change issues. ASEAN Heritage Parks constitute a network of 38 protected areas that encompass ecosystems and species that best represent ASEAN. Likewise, the ASEAN Wildlife Enforcement Network aims to address illegal exploitation and trade in CITES-listed species within the ASEAN region. ASEAN is also collaborating with donor and development agencies to run several conservation initiatives, such as the ASEAN-German Programme on Biodiversity Conservation and ASEAN-EU Programme on Biodiversity Conservation and Protected Area Management.

Along with the focus on conservation, ASEAN views the forests as important sources of plants with medicinal properties that are central to indigenous cultures and traditional medicines in the region. In recognition of the importance of indigenous plants to the health and cultures of the ASEAN people, ASEAN has published a compilation of 90 popular herbal and medicinal plants found across the ASEAN region as a reference for researchers and practitioners, and a guide for the effective and safe use of herbal medicines in primary health care, particularly for people in rural communities^{12,13}.

Additionally, ASEAN Member States are undertaking national-level actions that are supporting the preservation and increase of protected areas, afforestation activities, and community-based forest management.

C. OBJECTIVES

Over the next 10 years, the main objectives of the AWGNCB Action Plan are:

- 1) To ensure that by 2025, ASEAN's biodiversity is valued, conserved, restored, wisely used and delivers benefits essential for its people;
- 2) To promote natural resiliency and use of integrated ecosystem-based approaches (to climate change adaptation and disaster risk reduction).

D. MEANS OF IMPLEMENTATION

ASEAN Working Group on Nature Conservation and Biodiversity (AWGNCB), with the support of the ASEAN Centre for Biodiversity (ACB), will be the main responsible bodies for the implementation of the programmes and activities of this Strategic Priority Area. Other relevant sectoral bodies and/or partners such as ASEAN Senior Officials on Forestry (ASOF) will be consulted and coordinated with for cross-sectoral and cross-pillar activities.

¹⁰ *ibid.*

¹¹ ACB (2010) ASEAN Biodiversity Outlook. ASEAN Centre for Biodiversity, Los Baños, Philippines.

¹² Sittichai, N., et al. (2014) Herbal Medicines Used in Primary Health Care in ASEAN, Department for Development of Thai Traditional and Alternative Medicine Ministry of Public Health, Nonthaburi, Thailand.

¹³ ASEAN Secretariat (2010) ASEAN Herbal and Medicinal Plants ASEAN Secretariat, Jakarta, Indonesia.

Activities related to coastal and marine ecosystems are to be implemented in coordination with the ASEAN Working Group on Coastal and Marine Environment (AWGCME). AWGNCB and AWGCME shall coordinate as necessary for overlapping issues.

The AWGNCB will oversee the planning, technical and implementation issues under this Strategic Priority Area with support from ACB, while the ASEAN Environment Ministers and the ASEAN Senior Officials on Environment will provide policy and strategic guidance for its work. Lead countries of each programme/activity under the strategic priority are expected to develop proposal of detailed implementation work plan, implement the activity in coordination with AMS and ASEC, and provide regular progress updates to AWGNCB.

E. EXISTING AND POTENTIAL PARTNERS & STAKEHOLDERS

The activities under this Strategic Priority could be implemented through partnerships and regional collaborations with organisations working on nature and biodiversity conservation. Potential partners or platforms include United Nations Environment Programme (UN Environment), United Nations Development Programme (UNDP), United Nations Educational, Scientific and Cultural Organization (UNESCO), United Nations University, Secretariat of the Convention on Biological Diversity (SCBD), Southeast Asia Regional Centre for Graduate Study and Research in Agriculture (SEARCA), Global Biodiversity Information Facility (GBIF) and Asia-Pacific Biodiversity Observation Network and Global Environmental Observation Biodiversity Observation Network (AP-BON/GEO-BON).

Activities could also be implemented through cooperation and support from Dialogue / Development Partners, for example, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), India (ASEAN-India), US Agency for International Development (USAID), Norway, as well as through multilateral cooperation, such as the European Union (EU) and ASEAN Plus Three Countries (China, Japan and Republic of Korea).

Other organisations working on conservation activities and capacity building of communities in the region, such as the Center for People and Forests (RECOFTC) and the International Union for the Conservation of Nature (IUCN), could be invited to participate in relevant consultation or knowledge sharing workshops or support the activities of the AWGNCB.

2. PROGRAMME AND ACTIVITIES¹⁴

Outputs and Indicators	Activities	Lead Country
Programme 1: Key Terrestrial Biodiversity Area Conservation Including Protected Areas		
(a) Protected Areas (including Eco-tourism and Biodiversity)		
<i>Terrestrial biodiversity areas</i>	1. Develop regional map of key terrestrial biodiversity areas [including transboundary areas] ¹⁵ .	TBC
X per cent of terrestrial biodiversity areas designated	2. Designate terrestrial biodiversity areas for protection (e.g. ASEAN Heritage Parks, Ramsar Sites) ¹⁶ .	TBC
Baseline: per cent	3. Implement the ASEAN Heritage Parks Plan and site-based management plans.	TBC
At least X more terrestrial biodiversity areas designated as ASEAN Heritage Parks	4. Conduct management effectiveness assessment and monitoring in key areas.	TBC
Baseline: X ASEAN Heritage Parks	5. Conduct capacity development activities, [including transboundary management], for example on enforcement, ecosystem and species conservation, restoration, livelihood improvements and community resilience; and support provision of equipment.	TBC
Other designations, such as Ramsar Sites, Important Bird and Biodiversity Areas, UNESCO World Heritage Sites, etc.	6. Compile good practices and lessons learnt, and develop guidelines, where necessary.	TBC
Effective management of terrestrial biodiversity areas, including transboundary areas (in particular ASEAN Heritage Parks)	7. Enhance capacity to conduct studies on valuation of resources.	TBC
	8. Promote Public-Private Partnerships in protected areas management.	TBC
	9. Promote cooperation with other initiatives such as UNESCO, IPAP, CBD, and other Multilateral Environmental Agreements.	TBC
<i>Ecosystem services including ecotourism</i> ¹⁷	10. Conduct a study to identify the important ecosystems and their services.	TBC
Important ecosystems are identified and their services are evaluated	11. Carry out pilot projects on the application of the payment for ecosystems services in selected ASEAN Member States.	TBC
Payment for ecosystems services are operated	12. Develop guidelines for promoting ecotourism and valuation of biodiversity and ecosystems services, including mechanisms for benefit sharing.	TBC

¹⁴ The outputs and proposed activities here will be further confirmed by the AWGNCB to accommodate future changes and are provided in detail in ANNEX 2a.

¹⁵ Consistent with National Biodiversity Strategies and Action Plans (NBSAPs)

¹⁶ Refer to IUCN KBA process

¹⁷ Sub-component of PA (1)

Regional guidelines for promoting ecotourism developed	13. Enhance livelihood support in ASEAN Heritage Park sites, linking conservation and improved economic status of communities.	TBC
Increased contribution by ecotourism in the region		
Benefit sharing from payment for ecosystems service mechanism		
b) Species Conservation		
Number of species protected including migratory species [Plant species – GSPC]	1. Improve ASEAN participation to Conventions and other Multilateral Environmental Agreements (e.g. CMS, CITES, Ramsar).	Viet Nam
ASEAN Action Plan on species conservation including critical endangered and migratory species in place	2. Develop and implement ASEAN Action Plan on species conservation, including wildlife trade and enforcement in cooperation with ASEAN-Wildlife Enforcement Network (ASEAN-WEN); new technology of/joint programme for re-introduction; guidelines for in-situ, ex-situ conservation for endangered species; joint programme/project on protection of transboundary endangered species; regional initiatives for zoos and genebanks/ASEAN network on species conservation.	Viet Nam
Number of capacity building initiatives on taxonomy	3. Explore collaboration with ASEAN-WEN on the establishment of transboundary enforcement network on wildlife poaching and genetic piracy.	Viet Nam
	4. Monitor selected endemic species in the region (priority endemic species in ASEAN).	Viet Nam
	5. Conduct Taxonomic Capacity Building programme.	Viet Nam
	6. Establish ASEAN Network of Taxonomists.	Viet Nam
	7. Enhance ASEAN species database specific to wildlife management.	Viet Nam
	8. Promote education and public awareness on species conservation (CEPA).	Viet Nam
(c) Invasive Alien Species		
Improved invasive species (IAS) management ¹⁸	1. Conduct capacity building and information sharing activities.	Indonesia
	2. Establish ASEAN Network on Taxonomy and Invasive Alien Species ¹⁹ .	Indonesia

¹⁸ Check ABO2 (number of priority Invasive Alien Species (IAS))

¹⁹ Identify the Invasive Alien Species (IAS) at the national level

Checklist of IAS per country and modes of introduction	3. Control invasion of selected alien species within the region.	Indonesia
(d) Mainstreaming Biodiversity including Climate Change and Biodiversity		
Biodiversity considerations integrated into sectoral policies, plans and programmes and development projects	1. Conduct case studies on mainstreaming biodiversity in sector and production landscape.	[Malaysia]
	2. [Mainstream biodiversity into environmental safeguards].	[Malaysia]
	3. Develop guidelines for [biodiversity offset] ²⁰ .	[Malaysia]
Case studies on business and biodiversity	4. Document best practices and case studies on business and biodiversity.	TBC
Sectoral guidelines on business and biodiversity	5. Develop sectoral guidelines to encourage business and biodiversity initiatives.	TBC
Partnerships with business sectors (in line with CBD Global Partnership on Business and Biodiversity)	6. Promote strategic partnerships in business and biodiversity at the national and regional levels.	TBC
Biodiversity and climate change mainstreamed	7. Intensify public awareness and communication efforts on the relationship between biodiversity and climate change.	TBC
	8. Secure public support and effective participation in climate change programmes and action.	TBC
	9. Engage local communities in biodiversity conservation and climate change for better protection and livelihood support.	TBC
(e) Ecosystem Restoration		
X% of identified degraded ecosystems are restored Baseline: X%	1. Conduct regional mapping of degraded ecosystems.	Indonesia
	2. Implement pilot initiatives on ecosystem restoration.	Indonesia
(f) Health and Biodiversity		
Compilation of good practices on health and biodiversity	1. Promote awareness and generate peer reviewed evidence on biodiversity and health linkages ²¹ .	TBC
	2. Facilitate exchange of expertise.	TBC
	3. Enhance access to local knowledge and practices on health, nutrition, and traditional food.	TBC

²⁰ "biodiversity offset" - more generic term

²¹ Consideration of parks for health

Programme 2: Urban Biodiversity		
Compilation of good practices on urban biodiversity in the ASEAN Region Guidelines related to urban biodiversity X number of cities aware of the Singapore Index on Cities' Biodiversity	1. Convene workshops.	Singapore
	2. Conduct study tours and technical visits.	Singapore
Programme 3: Agricultural Biodiversity		
Pilot project/s on agricultural biodiversity Guidelines on good agricultural practices for biodiversity and food security	1. Take stock of key issues related to agricultural biodiversity (such as gene banks, genetic variations, pollinators) and prioritise actions for biodiversity food security.	Thailand
	2. Share experiences on good practices on agricultural biodiversity (e.g. Thailand's philosophy on sufficiency economy).	Thailand
Programme 4: Access and Benefit Sharing		
All ASEAN Member States have policy, administrative or legislative measures in place to effectively implement Access and Benefit Sharing (ABS), including being a party to the Nagoya Protocol X number of officials and key stakeholders participated in ABS related trainings and workshops Pilot studies on ABS conducted Traditional knowledge digital library on genetic resources is established and operational	1. Build capacity for ASEAN Member States to improve their understanding on ABS; and to manage and implement ABS measures (refer to UNEP-GEF Project).	Viet Nam
	2. Exchange information, experiences and good practices on developing and implementing ABS.	Viet Nam
	3. Design and implement some pilots on ABS in some ASEAN Member States.	Viet Nam
	4. Develop traditional knowledge digital library on genetic resources.	Viet Nam
Programme 5: Communication Education and Public Awareness (CEPA) (including Biodiversity Information Management)		
[Knowledge Management for Biodiversity Conservation]		
ASEAN Biodiversity Outlook (ABO)	1. Develop ABO every 5 years.	ACB
	2. Monitor and assess progress towards biodiversity targets.	ACB
ASEAN Conference on Biodiversity Proceedings	3. Identify key biodiversity issues to be shared and discussed at ASEAN Conference on Biodiversity.	ACB
	4. Develop key recommendations for consideration of ASEAN policy makers.	ACB
ASEAN Clearing House Mechanism (ASEAN	5. Maintain the ASEAN CHM.	ACB

CHM) utilised by ASEAN Member States and Stakeholders Indicator: <input checked="" type="checkbox"/> number of hits annually/collectively	6. Maintain Biodiversity Information Database.	ACB
	7. Agree on key information to be shared at the regional level	ACB
	8. Develop interoperable national biodiversity databases.	ACB
Programme 6: ASEAN Centre for Biodiversity		
Full ratification of ASEAN Centre for Biodiversity (ACB) Establishment Agreement ACB sustainably financed Possible indicators: - <input checked="" type="checkbox"/> amount of funding mobilised - <input checked="" type="checkbox"/> no of projects implemented - <input checked="" type="checkbox"/> amount of co-funding from ASEAN Member States (monetised in-kind and cash) Strengthened ACB's capacity to support ASEAN Member States and ASEAN's biodiversity conservation efforts Possible indicators: - Key recommendations of ACB's institutional review implemented. - <input checked="" type="checkbox"/> number of regional statements (technical/ policy)	1. Provide support to relevant ASEAN Member States to ratify ACB Establishment Agreement.	ACB
	2. Review and provide recommendations to strengthen ACB's institutional process and management.	ACB

1. INTRODUCTION

A. BACKGROUND

The ASEAN region is mega-diverse. It supports 75 per cent of global coral species, six of the world's seven marine turtle species, and 51 of the 70 mangrove species worldwide, with many species endemic to the region. The region has the most extensive and diverse coral reefs in the world, which account for more than 28 per cent (almost 70,000 square kilometres) of the global total, and largely consist of fringing reefs. The annual estimated value of ecosystem services from coral reefs comes to US\$ 112.5 billion, while mangroves alone account for US\$ 5.1 billion²². Marine fishery production in the region is an important component of the economies of coastal ASEAN Member States, with Indonesia leading production, followed by Viet Nam, Myanmar, and the Philippines.

Increased population, rapid coastal development and economic growth in ASEAN Member States have led to great demands and pressures on coastal and marine resources. These resources are under threat from multiple factors, including overfishing, destructive fishing practices, pollution from human activities (i.e. marine debris and oil spill), land-use change, and climate change. For example, in 2000, Southeast Asia had more than 4.6 million hectares of mangrove forests, but has since then been losing approximately 2 per cent each year from deforestation. These factors have negative impacts on coastal and marine resources which are an important food supply, act as functional buffer zones for natural weather disturbances, maintain water cycles, and serve as livelihoods for many communities in the ASEAN region.

Except for landlocked Lao PDR, all ASEAN Member States are facing a number of challenges in managing and protecting its extensive coastal and marine environments. The main challenges are (i) degradation of coastal habitats, (ii) reduction in ecosystem integrity and biodiversity loss, (iii) increasing coastal and marine pollution from nutrients, eutrophication and marine debris (e.g. plastic waste), (iv) illegal desludging and disposal of tanker sludge at sea and oil spill, (v) increasing impacts of climate change and (vi) poor management and governance.

Several commercially important species (i.e. Tuna, Scads and Mackerels) caught in the region are in danger of being decimated through overfishing, leading to the degradation of the region's coastal and marine biodiversity and threatening food security. The problem of marine debris pollution has recently gained attention worldwide specifically in the ASEAN region, where reports of floating islands of garbage sighted at sea recently made headlines. With a temperature increase of 0.14°C to 0.20°C per decade since the 1960s, climate change will have deep impacts on the productivity of coasts and oceans, as well as affect the wellbeing of coastal inhabitants²³. Some countries in ASEAN have formulated regulatory measures related to coastal and marine resources management, such as the issuance of permits for fishing, logging, and mangrove harvesting. However, most of these measures have not proven effective, largely due to enforcement failure and lack of support for the communities concerned.

Recognising the importance of coastal and marine resources for the livelihoods of ASEAN people as well as socio-economic development in the ASEAN region, it is important for ASEAN Member States to discuss, coordinate and overcome above key challenges on coastal and marine environment to ensure ASEAN's coastal and marine environment are sustainably managed, representative ecosystems, pristine areas and species are protected, and economic activities are sustainably managed.

²² ACB (2014) Stats & Stories: Storytelling for Biodiversity. ASEAN Centre for Biodiversity, Los Baños, Philippines.

²³ ASEAN Secretariat (forthcoming) Fifth ASEAN State of Environment Report. ASEAN Secretariat, Jakarta, Indonesia.

At the global level, ASEAN Member States have committed to support the full implementation of the Strategic Plan for Biodiversity 2011–2020 and the Aichi Biodiversity Targets of the Convention on Biological Diversity (CBD)²⁴, as well as contribute to the United Nations Sustainable Development Goals, particularly Goal 14 (Life Below Water) which promotes the conservation and sustainable use of the oceans, seas and marine resources for sustainable development. It is important for ASEAN to focus on these issues in order to achieve targets in the ASCC Blueprint 2025, particularly on conservation and sustainable management of biodiversity and natural resources.

To manage the complex coastal and marine environment in a sustainable manner, a comprehensive, integrative, and coordinated approach, in terms of policy, legislation, institutional arrangement, financial investment, management measures, and stakeholders support and participation, is required. ASPEN provides a forward-looking plan for the next 10 years to promote concerted actions through cooperation and collaboration across ASEAN Member States for addressing key challenges on managing and protecting coastal and marine environment. Efforts under this Strategic priority will focus on seven programmatic areas: (i) key coastal and marine area conservation, (ii) endangered coastal and marine species conservation, (iii) tanker desludging and oil spill reduction, (iv) coastal and marine pollution mitigation, (v) aquatic invasive alien species (vi) climate change issues and impacts in coastal areas, and (vii) integrated coastal management and marine spatial planning.

B. ACCOMPLISHMENTS

There are ongoing initiatives at local, national, regional and global levels on integrated coastal management, marine protected area management, coral reef management, as well as communication and education activities and campaigns.

To help protect shared marine waters in the region, ASEAN adopted the ASEAN Marine Water Quality Criteria (AMWQC) and Criteria for Marine Heritage Areas in 2002. Seventeen parameters were unanimously agreed and adopted by ASEAN on common marine water quality for the protection of the coastal and marine environment and human health. Following the adoption of the AMWQC, ASEAN published the ASEAN Marine Water Quality Criteria: Management Guidelines and Monitoring Manual in 2008. The ASEAN Mechanism to Enhance Surveillance against Desludging and Disposal of Tanker Sludge at Sea was also adopted by ASEAN Environment Ministers during the 11th ASEAN Ministerial Meeting on the Environment (AMME) in 2009. The objective of the Mechanism is to ensure coordinated efforts among ASEAN Member States in controlling tanker desludging activities and in promoting proper disposal of the tanker sludge at approved disposal facilities.

A publication on Marine Protected Areas in Southeast Asia was produced by ASEAN Centre for Biodiversity (ACB) to provide a reference for policymakers, planners, academia, and park managers on the management of marine protected areas to save, rehabilitate and safeguard the coastal and marine resources in the region. With support from ACB, AWGCME has also undertaken the development of both offline and online interfaces for encoding of Species and Protected Areas. The offline and online database is expected to facilitate information sharing among the ASEAN Member States.

Implementation of the ASEAN-Korea Environmental Cooperation Project (AKECOP) Phase VI with support from the ASEAN-ROK Special Cooperation Fund, titled Restoration of Degraded Terrestrial and Mangrove Ecosystems and Conservation of Biodiversity in the ASEAN Region, continues to enhance the capacity of ASEAN Member States in managing their forest and mangrove ecosystems by providing low carbon green livelihoods for the people, while rehabilitating degraded areas and maintaining wood biomass to contribute to the mitigation of climate change in the region.

ASEAN-ROK Course on Oil Pollution Preparedness, Response and Cooperation for the First Responders (Level 1) was held on 14-18 March 2016 in Busan, Republic of Korea, with funding support from the

²⁴ Strategic Plan for Biodiversity 2011-2020, including Aichi Biodiversity Targets (<https://www.cbd.int/sp/>)

ASEAN-ROK Special Cooperation Fund (SCF). The second training on the Scene Commanders/Supervisors (Level 2) on Oil Spill Response was held on 23-27 May 2016 in Busan, Republic of Korea.

C. OBJECTIVES:

Over the next 10 years, the main objectives of the AWGCME Action Plan are:

- 1) To ensure ASEAN's coastal and marine environment are sustainably managed; representative ecosystems, pristine areas and species are protected; economic activities are sustainably managed; and public awareness of the coastal and marine environment instilled;
 - 2) To conserve clean and healthy coastal and marine environments for ASEAN's sustainable development by reducing anthropogenic threats to coastal and marine ecosystems;
 - 3) To enhance inter-agency and inter-sectoral coordination at the regional and international levels for achieving sustainable management of the coastal and marine environment and responding to transboundary issues through good management practices and strengthened policies.
-

D. MEANS OF IMPLEMENTATION

ASEAN Working Group on Coastal and Marine Environment (AWGCME) will be the main responsible body for the implementation of the programmes and activities of this Strategic Priority Area, in coordination with ASEAN Centre for Biodiversity (ACB) and ASEAN Working Group on Nature Conservation and Biodiversity (AWGNCB), as well as other working groups and sectoral bodies and/or partners (working in e.g. agriculture, transportation, marine science and technology), whenever relevant.

The AWGCME will oversee the planning, technical and implementation issues under this Strategic Priority Area, while the ASEAN Environment Ministers and the ASEAN Senior Officials on Environment will provide policy and strategic guidance for its work. Lead countries of each programme/activity under the strategic priority are expected to develop proposal of detailed implementation workplan, implement the activity in coordination with AMS and ASEC, and provide regular progress updates to AWGCME.

E. POTENTIAL PARTNERS & STAKEHOLDERS

The activities under this Strategic Priority could be implemented through partnerships and regional collaborations with organisations working on coastal and marine management. Potential partners or platforms include UN Environment-Coordinating Body on the Seas of East Asia (COBSEA), Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), Coral Triangle Initiative-Coral Reefs, Fisheries and Food Security (CTI-CFF), Southeast Asian Fisheries Development Center (SEAFDEC), International Union for Conservation of Nature (IUCN), Ramsar Convention, and United Nations Educational, Scientific and Cultural Organization (UNESCO).

Activities could also be implemented through cooperation and support from ASEAN Dialogue / Development Partners, for example, ASEAN Plus Three Countries (China, Japan and ROK), and the European Union (EU).

Other organisations working on marine science, conservation, and capacity building of communities in the regions, Local Government Units and private sector actors, could be invited to participate in relevant consultation or knowledge sharing workshop or support the activities of the AWGCME.

2. PROGRAMMES & ACTIVITIES²⁵

Outputs and Indicators	Activities	Lead Country
Programme 1: Key Coastal and Marine Area Conservation		
% key coastal and marine areas designated Baseline: % At least 8 more coastal and marine areas designated as ASEAN Heritage Parks Baseline: 4 ASEAN Heritage Parks	1. Develop a regional map of key coastal and marine areas, [including shared common sea areas].	TBC
	2. Designate these areas for protection (e.g. ASEAN Heritage Parks, Ramsar Sites)	TBC
	3. Enhance criteria for marine ASEAN Heritage Parks.	TBC
Effective management of key coastal and marine areas, including shared/common sea areas (in particular in ASEAN Heritage Parks)	4. Conduct management effectiveness assessment and monitoring in key coastal and marine areas.	TBC
	5. Conduct capacity development activities, including shared/common sea areas management, for example on enforcement, ecosystem and species conservation, restoration, livelihood improvements and community resilience; and support provision of equipment.	TBC
	6. Compile good practices and lessons learnt, and guidelines from coastal and marine management.	TBC
	7. Enhance capacity to conduct studies on valuation of resources.	TBC
Programme 2: Endangered Coastal and Marine Species Conversation		
Number of action plans for key ASEAN endangered species	1. Conduct inventory (survey, mapping exercise) or database of endangered species (inside and outside marine protected areas).	Thailand
	2. Identify key ASEAN endangered species and develop action plans for their conservation.	Thailand
Programme 3: Tanker Desludging and Oil Spill Reduction		
Implementation of the ASEAN Mechanism to Enhance Surveillance Against Illegal Desludging and Disposal of Tanker Sludge at Sea Indicator: Workshops / exercises conducted	1. Build capacity (e.g. workshop/s and or exercises) to implement the said ASEAN Mechanism to Enhance Surveillance Against Illegal Desludging and Disposal of Tanker Sludge at Sea.	Indonesia

²⁵ The outputs and proposed activities here will be further confirmed by the AWGCME to accommodate future changes and are provided in detail in ANNEX 2b.

Indicator: Workshop / seminar	2. Promote existing ASEAN mechanism for desludging and oil spill to sub-regional mechanism, (such as: Gulf of Thailand, Sulu-Sulawesi, Straits of Malacca) through information sharing and exchange of views.	TBC
Indicator: Training	3. Implement project on Capacity Development for ASEAN Country on Identification and Differentiation of Spilled Oil and Tarballs.	Thailand
Indicator: Workshop	4. Review existing surveillance, monitoring systems and programmes and applicability to ASEAN.	Malaysia
Effective response to oil spill Indicator: Workshops / seminars	5. Conduct capacity building activities and or exercises in line with the Regional Oil Spill Contingency Plan for ASEAN.	TBC
Indicator: Participation of MTWG	6. Conduct regular consultations with ASEAN Marine Transport Working Group (MTWG).	Chair of AWGCME
Programme 4: Coastal and Marine Pollution Mitigation (nutrients, marine debris, eutrophication etc.)^{26 27}		
Regional status of marine debris, including microplastics and recommendations on way forward Indicator: Workshops/ seminars, regional management plan	1. Exchange knowledge and share experiences, including good practices.	TBC
	2. Identify needs and gaps.	TBC
	3. Explore regional collaborative activities.	TBC
	4. Develop regional management plan for marine debris, including microplastics.	TBC
Regional status of nutrients and eutrophication including recommendations on way forward Indicator: Workshops/ seminars, regional management plan	5. Exchange knowledge and share experiences, including good practices.	Philippines (HABs)
	6. Identify needs and gaps.	Philippines (HABs)
	7. Explore regional collaborative activities.	Philippines (HABs)
	8. Develop regional management plan for nutrients and eutrophication.	Philippines (HABs)
Regional status of land-based pollutions (e.g. sediment, heavy metals, etc) including recommendations on way forward Indicator: Workshops/ seminars, regional management plan	9. Exchange knowledge and share experiences, including good practices.	TBC
	10. Identify needs and gaps.	TBC
	11. Explore regional collaborative activities.	TBC
	12. Develop regional management plan for land-based pollutions.	TBC

²⁶ The output of this programme is for a regional management plan for marine pollution that includes the elements described above by 2025.

²⁷ Public awareness programmes and activities will be integrated, wherever appropriate.

Programme 5: Coastal and Marine Invasive Alien Species²⁸		
Regional status of coastal and marine Invasive Alien Species (IAS), including ratification of Ballast Water Management Convention, and recommendations on way forward Indicator: Report / Proceedings	1. Exchange knowledge and share experiences, including good practices on national regulatory frameworks, identification of IAS and potential vectors, new technologies, etc.	Malaysia
	2. Identify needs and gaps.	Malaysia
	3. Explore regional collaborative activities.	Malaysia
	4. Develop regional management plan for IAS.	Malaysia
Regional status of IAS from trade in ornamental marine life and aquaculture activities and recommendations on way forward Indicator: Report / Proceedings	5. Exchange knowledge and share experiences, including good practices, on national regulatory frameworks, identification of IAS and potential vectors, new technologies, etc.	Thailand and Philippines
	6. Identify needs and gaps.	Thailand and Philippines
	7. Explore regional collaborative activities.	Thailand and Philippines
	8. Develop regional management plan for IAS.	Thailand and Philippines
Programme 6: Climate Change Issues and Impacts in Coastal Areas		
Good practices on climate change adaptation and mitigation strategies Indicator: Guidebook on how to assess communities' understanding of climate impacts on coastal and marine resources/Number of pilot projects	1. Exchange knowledge and share experiences, including best practices on adaptation and mitigation measures in coastal area.	TBC
	2. Promote awareness, education and training on climate change adaption and mitigation measures in coastal area.	TBC
	3. Conduct pilot projects on social and ecological resilience.	TBC
Programme 7: Integrated Coastal Management and Marine Spatial Planning		
Number of national and local government authorities applied Integrated Coastal Management (ICM) system (in particular ASEAN Heritage Parks) Indicator: Workshops / seminars	1. Conduct workshops and trainings on ICM System for national and local governments.	TBC
	2. Conduct workshops and trainings on MSP.	TBC
Marine Spatial Planning (MSP) integrated into national policies, plans and programmes. Indicator: At least 4 ASEAN Member		

²⁸ Public awareness programmes and activities will be integrated, wherever appropriate.

States have MSP integrated into national policies, plans and programmes.		
Assessment of the potential of Blue Carbon in the region, and its contribution as a carbon sink	3. Exchange knowledge and share experiences on Blue Carbon.	<i>TBC</i>
	4. Conduct a regional study to assess the potential of Blue Carbon in ASEAN Member States.	<i>TBC</i>

1. INTRODUCTION

A. BACKGROUND

Freshwater is an essential environmental resource for sustaining human life, ecosystems and socio-economic development in ASEAN Member States. In 2014, the region had a total capacity of 4,985 billion cubic metres of internal renewable water resources²⁹. At present, the total annual water withdrawal for the ASEAN region is almost 385 billion cubic metres, which is around 20 per cent of water withdrawals in Asia. Cambodia, Indonesia, Lao PDR, Myanmar, the Philippines, Thailand and Viet Nam use more than 80 per cent of their total annual water withdrawal for agriculture, while Brunei Darussalam, Malaysia and Singapore mainly use water for domestic and industry uses.

All ASEAN Member States have continued to improve water for safe drinking and sanitation in line with levels indicated in the Millennium Development Goals. According to the ASEAN Statistical Year Book 2014³⁰, approximately 89 per cent of the population in ASEAN had access to safe drinking water and 71 per cent had access to safe sanitation in 2012. However, only 41 per cent of the population of Indonesia had access to safe drinking water and about half of the population of Cambodia still lack access to improved sanitation facilities.

Data from countries that have long-term water quality monitoring programmes, such as Thailand, Malaysia, Indonesia, the Philippines, Singapore and Viet Nam, shows that the number of rivers and lakes that are classified as having good water quality is decreasing annually, while the number of those classified as having fair and deteriorated water quality is increasing. The deteriorating water quality and increasing water pollution in the region is causing negative impacts on ecosystem services, public health and economic development.

The main challenges in water resources management in the region are linked to (i) increasing water demands and uncertainty in availability of freshwater resources, (ii) degradation of water quality, (iii) dealing with severe floods, droughts and sea level rise due to climate change and (iv) strengthening coordination and cooperation among ASEAN Member States and relevant agencies at national level in implementing Integrated Water Resources Management (IWRM).

Water demand is expected to increase by about one-third in 2025 and double during the latter half of the 21st century³¹ to serve population growth, urbanisation and economic development. The increased water demands have led to massive abstractions of water resources and increased competition between users and usages. Increasing pollution of water bodies due to inadequate provision of sanitation facilities, sewerage and wastewater treatment, as well as agriculture expansion and intensification, is threatening water quality in ASEAN, even though many countries have placed emphasis on the management of water quality.

Climate change is expected to increase uncertainty of availability of freshwater through changes in rainfall distribution, soil moisture, snow melt, and river and groundwater flows over space and time across the region³². Extreme flood and drought will increase vulnerability to freshwater resources across the region. Sea level rise due to climate change will also affect salinity intrusion and freshwater in many cities in coastal areas.

²⁹ FAO (2017) AQUASTAT. Food and Agriculture Organization of the United Nation.

³⁰ ASEAN Secretariat (2015) ASEAN Statistical Year Book 2014. ASEAN Secretariat,

³¹ ASEAN Secretariat (2005) ASEAN Strategic Plan of Action on Water Resources Management. ASEAN Secretariat, Jakarta, Indonesia.

³² ADB (2009) The Economics of Climate Change in Southeast Asia. The Asian Development Bank.

ASEAN Member States have different government agencies responsible for water resources management. Fragmentation of the management of water resources between several agencies within and across countries is a major concern, impacting the effectiveness of implementing IWRM at national and regional levels, and greater attention needs to be focused on developing appropriate institutional structures, and supporting capacity building, legislation and enforcement to ensure successful outcomes in water resources management.

It is important for ASEAN Member States to discuss, coordinate and overcome the above key challenges on water resources management in the region, in order to sustain freshwater resources and ensure sufficient water quantity of acceptable quality to meet the needs of the people in terms of health, food security, economy, and environment, as guided by ASEAN Strategic Plan of Action on Water Resources Management in 2005. Managing water resources efficiently and effectively, as well as promoting good water governance, will also support conservation and sustainable management of biodiversity and natural resources, disaster resilience and a reduction of risks from water-related disasters due to climate change in the region, as stated in the key results areas of the ASCC Blueprint 2025. The achievement in implementing IWRM in ASEAN Member States at national, sub-regional (such as Mekong River Basin), and regional levels will also contribute to the successes of the United Nations Sustainable Development Goals, particularly of Goal 6 (Clean Water and Sanitation), Goal 11 (Sustainable Cities and Communities), Goal 13 (Climate Action), Goal 15 (Life on Land) and Goal 17 (Partnerships for the Goals).

It is almost two decades since ASEAN started to provide support and facilitation to ASEAN Member States to address common issues on water resources and improve water resources management in the region through capacity building, knowledge exchange, data management and reporting, and sharing best practices of IWRM. ASPEN provides a forward-looking plan for the next 10 years to promote cooperation and joint actions across ASEAN Member States that would allow for addressing key challenges on water resources issues at national, sub-regional and regional levels. Efforts under this strategic priority will focus on five programmatic areas: (i) IWRM Country Strategy Guideline and Indicator Framework implementation, (ii) public awareness and cross-sectoral coordination, (iii) water conservation, (iv) water quality and sanitation, and (v) water-related disasters.

B. ACCOMPLISHMENTS

In 2005, ASEAN developed the ASEAN Strategic Plan of Action on Water Resources Management that supports action at the national level to address key common challenges in water resources in the region. The Action Plan focuses on improving access to safe drinking water and sanitation, managing water resources efficiently and effectively, supporting integrated river basin management, translating awareness to political will and improved capacities, and supporting adequate and affordable water services. Many countries are now working towards improving institutional arrangements to increase interconnectivity and synergies in water resources management.

The AWGWRM developed and adopted a set of IWRM performance indicators in 2009 to monitor and assess the progress and achievements of IWRM in ASEAN Member States for six water management issues: water supply management, irrigation management, storm water management, flood management, water pollution management and sanitation management. The IWRM Performance Indicators Framework was revised in 2015 to include four types of indicators: outcome indicators, enabling environment indicators, institutional set-up indicators and management tools indicators. The ASEAN IWRM website is established and serves as a platform to share Annual Reports on the IWRM performance indicators³³.

All ASEAN Member States are investing in increasing and improving water quality and quality monitoring systems to increase efficiency in water resources management and disaster risk management. ASEAN has established Water Data Management and Reporting System to provide a platform for ASEAN

³³ ASEAN Integrated Water Resources Management website (<http://aseaniwrm.water.gov.my>).

regional river monitoring system that would allow ASEAN to assess the status and broad trends of river conditions and water quality across the region³⁴.

Several learning forums, workshops, trainings and field visits have been organised in the last decade to identify issues and challenges, share examples of best practices and experience and possible solutions for urban and irrigation water demand management in ASEAN Member States.

A regional Workshop on Risks and Impacts from Extreme Events of Floods and Droughts in ASEAN was held in 2010 to assess the management of floods and droughts in ASEAN Member States and learn how well each country could cope with different flood and drought situations. It shared information on best practices and identified the required tools and actions to improve the current situation of flood and drought management in ASEAN Member States, both individually and collectively.

C. OBJECTIVES:

Over the next 10 years, the main objectives of the AWGWRM Action Plan are:

- 1) To promote Integrated Water Resource Management (IWRM) for sustainability of water resources, equitable accessibility, and sufficient water quantity of acceptable quality to meet the needs of the people, economy and environment.
- 2) To manage water resources efficiently and effectively in order to provide adequate and affordable water services.
- 3) To reduce the number of people without sustainable access to safe drinking water and improved sanitation.
- 4) To reduce risks and impacts of water-related disasters (flood, drought, storm, etc.) and strengthen resilience of social and ecosystem.

D. MEANS OF IMPLEMENTATION

ASEAN Working Group on Water Resources Management (AWGWRM) will be the main responsible body for the implementation of the programmes and activities of this Strategic Priority Area. Activities related to strengthening cross-sectoral coordination on water-related issues will be implemented in coordination with other ASEAN Working Groups such as AWGNCB, AWGCME and AWGEE. Activities related to addressing water-related disasters will be implemented in coordination with AWGCC and ASEAN Committee on Disaster Management (ACDM), as necessary. There is also a potential need for coordination and joint implementation with AWGESC on improving water quality and sanitation, particularly in urban cities. Other relevant sectoral bodies and/or partners will be consulted for cross-sectoral and cross-pillar activities.

The AWGWRM will oversee the planning, technical and implementation issues under this Strategic Priority Area, while the ASEAN Environment Ministers and the ASEAN Senior Officials on Environment will provide policy and strategic guidance for its work. Lead countries of each programme/activity under the strategic priority are expected to develop proposal of detailed implementation workplan, implement the activity in coordination with AMS and ASEC, and provide regular progress updates to AWGWRM.

E. POTENTIAL PARTNERS & STAKEHOLDERS

The activities under this Strategic Priority could be implemented through partnerships and regional collaborations with organisations working on water resources management. Potential partners or platforms include Mekong River Commission (MRC), Global Water Partnership - Southeast Asia (GWP-

³⁴ ASEAN Water Data Management and Reporting System (<http://rhn.water.gov.my/awgwrn/>)

SEA), ASEAN Plus Three Countries (China, Japan and ROK), Network of Asian River Basin Organizations (NARBO), and International Commission on Irrigation and Drainage (ICID).

Several United Nations agencies can also be further engaged, such as United Nations Environment Programme (UN Environment) and United Nations Development Programme (UNDP). Activities could also be implemented in partnership with Dialogue/Development partners or through ASEAN-Dialogue Partners cooperation framework or trust funds, such as Japan-ASEAN Integration Fund (JAIF) and ASEAN-ROK Centre.

Other organisations that could support public awareness and knowledge exchange activities on water resources management, as well as cross-sectoral coordination, include International Union for the Conservation of Nature (IUCN) and National Institute for Environmental Studies (NIES).

2. PROGRAMMES AND ACTIVITIES³⁵

Outputs and Indicators	Activities	Lead Country
Programme 1: IWRM Country Strategy Guideline and Indicator Framework Implementation		
Improved IWRM Country Strategy Guideline and Indicators Framework Improved Water Data Management and Reporting System Design Indicator: - Workshops/Training - Evaluation results	1. Identify, compile, publish and disseminate information on good practices from national IWRM activities.	Malaysia
	2. Disseminate ASEAN IWRM Indicators Framework to other sectors.	Malaysia
	3. Promote peer-to-peer exchanges.	Malaysia
	4. Promote capacity building.	Malaysia
	5. Maintain the ASEAN Integrated Water Resources Management website (http://aseaniwrm.water.gov.my/)	Malaysia
	6. Update and maintain ASEAN Water Data Management and Reporting System Design (http://rhn.water.gov.my/awgwrn/form).	Malaysia
	7. Evaluate and assess implementation by ASEAN Member States on the indicators.	Malaysia
Programme 2: Public Awareness and Cross-sectoral Coordination		
Enhanced public awareness and partnership for integrated water resources management Indicator: - Dialogues/ Workshops - List of data sharing	1. Conduct partnership dialogue on integrated water resources management (e.g. ASEAN water conference).	Lao PDR
	2. Implement Communication, Education and Public Awareness (CEPA) programmes.	Lao PDR
	3. Conduct capacity building and information sharing activities.	Lao PDR
Improved cross-sectoral coordination and interlinkages between other sectors	4. Conduct information sharing activities.	TBC
	5. Implement joint activities related to water and energy (such as: hydropower); water and food; IRBM and ICM.	TBC
	6. Conduct capacity building activities.	TBC
Programme 3: Water Conservation		
ASEAN Guidelines on water demand management	1. Identify and compile information on good practices.	Singapore
	2. Implement workshop or seminar on developing guidelines on water	Singapore

³⁵ The outputs and proposed activities here will be further confirmed by the AWGWRM to accommodate future changes and are provided in detail in ANNEX 2c.

Indicator: - Workshops/ seminars	demand management plan.	
	3. Conduct capacity building activities.	Singapore
ASEAN Guidelines on water supply management	4. Identify and compile information on good practices.	TBC
	5. Implement workshop or seminar on developing guidelines on water supply management.	TBC
	6. Conduct capacity building activities.	TBC
ASEAN Guidelines on water resources conservation	7. Identify and compile information on good practices.	TBC
	8. Implement workshop or seminar on developing guidelines on water conservation.	TBC
	9. Conduct capacity building activities.	TBC
Programme 4: Improving Water Quality and Sanitation		
% of improved water quality	1. Develop ASEAN water quality indicators and water quality standard monitoring standard.	TBC
	2. Provide education and capacity building support to communities on water pollution management.	TBC
	3. Share information and experience on water quality management.	TBC
% of improved sanitation	4. Provide education and capacity building support to communities on sanitation.	TBC
	5. Share information and experiences on water service and sanitation.	TBC
Strengthened participation of local communities, the private sector, and other stakeholders in improving water quality and sanitation management	6. Develop and implement CEPA programmes.	TBC
	7. Engage local communities, the private sector, and other stakeholders in capacity building programmes and related projects.	TBC
Indicator: - Number and coverage of Public-Private Partnerships (PPPs) in water provision and sanitation management - Cross reference to AWGWRM indicators - Number of training participants and gender equity		
Programme 5: Water-related Disasters		
Implementation of good practices on	1. Conduct regional scoping study on the causes, severity and impacts of	TBC

adaptation and mitigation strategies of water-related disasters	potential flood and drought hazards in ASEAN countries.	
	2. Develop forecasting and information exchange system.	
	3. Document and disseminate information on the good practices, and lessons learnt in addressing water-related disasters.	<i>TBC</i>
	4. Conduct Pilot studies or sites.	<i>TBC</i>
	5. Build capacity and raise public awareness on adaptation and mitigation strategies of water-related disasters.	<i>TBC</i>
Improved social and ecological resilience to negative effects on water-related disasters	6. Develop and implement CEPA programme.	<i>TBC</i>
	7. Conduct capacity building activities.	<i>TBC</i>
	8. Conduct pilot projects or sites.	<i>TBC</i>
Enhanced coordination with ASEAN Committee on Disaster Management	9. Conduct information sharing and consultation.	<i>TBC</i>
	10. Implement Joint capacity building activities.	<i>TBC</i>
	11. Develop joint Initiatives (policies, strategies, forums, networking and social media, etc.).	<i>TBC</i>

1. INTRODUCTION

A. BACKGROUND

More than half the world's population lives in cities and it is projected that by 2030, 6 out of 10 people will be urban dwellers. Currently, about 30 per cent of the urban population lives in slum-like conditions³⁶. Cities in Southeast Asia have expanded rapidly and the urban population has doubled over the past 25 years. In 2013, nearly 300 million of ASEAN's populations lived in cities, of which 84 million lived in cities with over one million inhabitants.

The increasing concentration of people in urban areas reflects the spatial concentration of economic activity in urban centres which in turn has encouraged in-migration from rural areas³⁷. Currently, urban inequality is also increasing and urban development is not keeping up with the massive expansion. Differences between rural and urban areas also persist. In the next fifteen years, ASEAN's urban areas are expected to have to accommodate another 100 million people. Despite numerous planning challenges, well-managed cities and other human settlements (i.e. towns, villages, slums, etc.) can be benchmarks for innovation and ingenuity and key drivers of sustainable development.

These trends put high pressure on ASEAN Member States particularly on their urban planning on infrastructure and other public services, including green areas, farm land and public space for recreation, to make them environmentally sustainable and liveable. Accommodating such expansions in planned and coordinated urban systems that increase quality of life of urban citizens is a key challenge that requires strong policy coordination. People living in urban areas are also increasingly at risk to natural disasters, such as floods and droughts, and the impacts of climate change. Therefore, developing climate resilient and low carbon cities that support greenhouse gas reduction and climate resiliency is another key challenge.

Likewise, managing solid waste is often problematic in densely populated areas. In fact, in many developing regions, less than half of solid waste is safely disposed of. As per capita waste generation continues to rise, the collection and safe disposal of solid waste will continue to require serious attention. Urban air, land and water pollution are also a challenge in cities, causing illness and millions of premature deaths annually.

It is important to ensure that cities and urban areas in ASEAN are environmentally sustainable and climate resilient, and that they meet the social and economic needs of the people. As stipulated in the ASCC Blueprint 2025, ASEAN has committed itself to supporting environmentally sustainable cities, in particular, enhancing participatory and integrated approaches in urban planning and management for sustainable urbanisation towards a clean and green ASEAN and promoting coordination among relevant sectors to provide access to clean land, green public space, clean air, clean and safe water, and sanitation. Success of developing environmentally sustainable cities in ASEAN will also contribute to the achievement of the United Nations Sustainable Development Goals, particularly Goal 11 (Sustainable Cities and Communities) which promotes the need to make cities and human settlements inclusive, safe, resilient and sustainable at a global level.

Various programmes and initiatives have been implemented by ASEAN to tackle urban challenges and improve environmental performance, for example, the ASEAN Initiative on Environmentally Sustainable Cities (AIESC), ASEAN Environmentally Sustainable Cities Award Programme, and High Level Seminars

³⁶ UN-Habitat and UNESCAP (2015) The state of Asian and Pacific cities 2015: Urban transformations shifting from quantity to quality.

³⁷ ASEAN Secretariat (forthcoming) Fifth ASEAN State of Environment Report. ASEAN Secretariat, Jakarta, Indonesia.

on Environmentally Sustainable Cities. However, by simply ensuring and maintaining good environmental performance is inadequate. ASEAN cities must strive to go beyond environmental performance and move towards achieving environmental sustainability through strengthening the capacity of national and local institutions to implement strategies and programmes towards environmentally sustainable and climate resilient cities, as well as strengthening positive economic, social and environmental linkages among urban, peri-urban and rural areas.

ASPEN provides a forward-looking plan for the next 10 years to promote cooperation and joint actions across ASEAN Member States that would allow for addressing key challenges on planning and developing environmentally sustainable and climate resilient cities. Efforts under this Strategic Priority will focus on two programmatic areas: (i) sustainable urban planning, development, and implementation, and (ii) climate resilient and low carbon cities.

B. ACCOMPLISHMENTS

The ASEAN Initiative on Environmentally Sustainable Cities (AIESC), which was endorsed by the ASEAN Environment Ministers in 2005, serves to assist ASEAN cities to pursue environmental sustainability. AIESC supports mainly small and rapidly-growing cities in regional activities that are based on the Environmentally Sustainable Cities (ESC) Key Indicators for clean air, clean land, and clean water. To recognise the efforts and identify best practices in cities towards environmental sustainability, ASEAN initiated the ASEAN Environmentally Sustainable City (ESC) Award programme and Certificates of Recognition on Clean Air, Clean Water and Clean Land. The ESC Award aims to encourage urban environmental sustainability by recognising exemplary efforts and sharing best indigenous practices to keep cities clean, green, and liveable.

The ASEAN ESC Model Cities Programme is a regional initiative aimed at promoting the development of Environmentally Sustainable Cities (ESC) across ASEAN Member States. It provides seed funding, technical assistance and other forms of support to raise local capacity for implementing innovative and voluntary bottom-up initiatives, as well as to strengthen national ESC frameworks and actions that facilitate the replication and scaling up of good practices and policies within and across countries. It also promotes city-to-city collaboration and provides a broad and inclusive platform matching ASEAN cities with interested resource partners. This programme has been realised with support from the Japan-ASEAN Integration Fund (JAIF).

The High Level Seminar on Environmentally Sustainable Cities (HLS-ESC) has been organised annually since 2010 to promote information exchange and foster concrete collaborative actions on Environmentally Sustainable Cities among East Asia Summit (EAS) countries. The Seminars typically showcase policies and legal frameworks as well as practical projects on ESC for the consideration of EAS Environment Ministers.

The Clean Air for Smaller Cities Project, with funding from the Government of the Federal Republic of Germany, supported small and medium-sized cities across 8 ASEAN Member States in the development and implementation of Clean Air Plans (CAPs), with the aim of improving air quality and supporting sustainable urban development. The Project has been able to support the implementation of ten emission inventories, development of six clean air plans and delivery of five training courses through 35 trainings.

ASEAN is also supporting the CityLinks Pilot Partnership, an 18-month technical exchange programme focusing on strengthening urban climate resilience and adaptation in selected cities across ASEAN Member States. The programme is funded by USAID, and implemented by the International City/County Management Association (ICMA) and Institute for Sustainable Communities (ISC). The CityLinks Pilot Partnership aims to define a structured and strategic approach to city-to-city learning on environmental sustainability in line with ASEAN goals and builds on the initial success of the ASEAN Environmentally Sustainable Cities Model Cities Programme (MCP). ASEAN cities will become part of an existing online knowledge network to connect practitioners and promote sustained technical exchanges.

C. OBJECTIVES

Over the next 10 years, the main objectives of the AWGWRM Action Plan are:

- 1) To ensure that cities and urban areas in ASEAN are environmentally sustainable, while meeting the social and economic needs of the people.
- 2) To promote sustainable urbanisation and climate resilient cities in ASEAN towards a clean and green ASEAN.

D. MEANS OF IMPLEMENTATION

ASEAN Working Group on Environmentally Sustainable Cities (AWGESC) will be the main responsible body for the implementation of the programmes and activities of this Strategic Priority Area. Other relevant sectoral bodies and/or partners will be consulted for cross-sectoral and cross-pillar activities.

The AWGESC will oversee the planning, technical and implementation issues under this Strategic Priority, while the ASEAN Environment Ministers and the ASEAN Senior Officials on Environment will provide policy and strategic guidance for its work. Lead countries of each programme/activity under the strategic priority are expected to develop proposal of detailed implementation workplan, implement the activity in coordination with AMS and ASEC, and provide regular progress updates to AWGESC.

E. POTENTIAL PARTNERS & STAKEHOLDERS

The activities under this Strategic Priority could be implemented through partnerships and regional collaborations with organisations working on environmentally sustainable and climate resilient cities and urban development. Potential partners or platforms include United Nations Development Programme (UNDP), United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), European Union, International City/County Management Association (ICMA) and Institute for Sustainable Communities.

Activities to support planning, capacity building and knowledge exchange in ASEAN could also be implemented through cooperation and support from Dialogue/Development partners, for example, Japan, United States Agency for International Development (USAID), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Institute for Global Environmental Strategies (IGES), China and India.

2. PROGRAMMES AND ACTIVITIES³⁸

Outputs and Indicators	Activities	Lead Country
Programme 1: Sustainable Urban Planning, Development, and Implementation		
Adopted (revised) ASEAN Key Indicators for Clean Air, Clean Water, Clean Land (linked with global indicators e.g. relevant SDGs)	1. Conduct a comprehensive review and revision of the existing ASEAN Key Indicators for Clean Air, Clean Water and Clean Land.	Chair of AWGESC
ASEAN Environmentally Sustainable Cities (ESC) Awards	2. Utilise the adopted indicators as the basis for: i) selection of cities for the ASEAN ESC Award and Certificates of Recognition ³⁹ and ii) identification of programmes and partnership with donors for capacity building.	Chair of AWGESC
	3. Promote and support national-level initiatives on high performing and motivated cities ⁴⁰ .	Chair of AWGESC
ASEAN Guidelines on Sustainable Urban Planning and Development (includes sourcebook on ESC good practices)	4. Continue to organise regional forum on ESC, such as High-level Seminars on ESC, regularly to facilitate exchange of good practices.	TBC
	5. Establish or enhance good practices, such as 'Model sites' in the city (e.g. green homes/villages, schools, markets, buildings and parks).	TBC
	6. Conduct a study on the state of urban development in ASEAN Member States including emerging issues (e.g. ageing society, tourism cities) and lessons learned on sustainable urban development.	TBC
Enhanced capacity, leadership and expertise of ASEAN city leaders and local stakeholder organisations to improve access to clean land, green public space, clean air, clean and safe water, and sanitation.	7. Conduct training programmes on air and water quality management (consider linking with climate change issues).	Singapore
	8. Promote 3R (Reduce, Reuse, Recycle) activities and conduct training programmes on waste management, recycling and upcycling.	Singapore
	9. Promote urban biodiversity and greenery.	Singapore and Thailand
	10. Promote integrated coastal zone (ICM) management for sustainable coastal cities.	Singapore
Enhanced support, coordination, and network for and among sub-national governments (including provinces,	11. Provide support for national and sub-national ESC initiatives.	
	12. Provide capacity building programmes for sub-national governments on ESC.	
	13. Promote city-to-city cooperation as a capacity building tool for learning and	Thailand

³⁸ The outputs and proposed activities here will be further confirmed by the AWGESC to accommodate future changes and are provided in detail in ANNEX 2d.

³⁹ Proposed to refine the mechanism for selection of cities based on the new indicators and to include public participation (voting)

⁴⁰ This proposed action plan would need to be consulted with all ASEAN Member States.

regions, state, districts and local level)	sharing expertise and experiences, such as industrial cities.	
Enhanced cross-sectoral coordination on sustainable urban planning and development	14. Provide a multi-sectoral platform to mainstream environmental considerations to other relevant sectors, such as transport and energy, for sustainable infrastructure planning.	<i>TBC</i>
	15. Collaborate with other relevant ASEAN sectoral bodies and support organisations (including the private sector, local government networks and non-governmental organisations) to: (i) mobilise substantial support to cities; (ii) establish networks with cities and local authorities in the country; and (iii) improve knowledge and education on sustainable development at the local level.	<i>TBC</i>
Programme 2: Climate Resilient and Low Carbon Cities		
Increased number of ASEAN cities with low carbon and improved resilience capacities to climate change through better integration of climate change adaptation and mitigation in sustainable development agenda	1. Develop a baseline study on ESC and climate resiliency ASEAN's City status, especially for selected cities, including vulnerability and adaptation capacity assessments.	
	2. Develop greenhouse gas and short-lived climate pollutant audits for transport, construction, energy and waste sector at selected ASEAN cities.	
	3. Promote public participation and youth engagement towards climate resilient and sustainable urbanisation.	
Demonstration of climate change mitigation and adaptation at selected ASEAN cities	4. Select pilot cities for the implementation of small scale climate change mitigation and adaptation measures.	<i>TBC</i>
	5. Support cities on the formulation and/or implementation of initiatives and action plan on mainstreaming climate change mitigation and adaptation, including capacity building for the city officials and other concerned stakeholders.	<i>TBC</i>
	6. Pilot concrete adaptation and mitigation measures at the selected city level.	<i>TBC</i>
	7. Support selected cities in exploring external funding resources and instruments for scaling-up the climate change adaptation and mitigation initiatives.	<i>TBC</i>
	8. Document and disseminate good practices and lesson learnt from piloted concrete adaptation and mitigation measures.	<i>TBC</i>
	9. Promote knowledge exchange between ASEAN cities, development partners and countries on climate change adaptation and mitigation.	<i>TBC</i>
Enhanced coordination with ASEAN Committee on Disaster Management	10. Develop joint initiatives on climate resilient cities with focus on resilient vital infrastructure, early warning systems, coastal management, urban run-off, and urban health (climate induced).	<i>TBC</i>
Climate and disaster resiliency incorporated in ASEAN eco-schools, safe school initiative and ASEAN Green Higher Education concept	11. Develop a regional framework for curriculum with local contents on climate and resilient cities.	<i>TBC</i>

1. INTRODUCTION

A. BACKGROUND

The vulnerability to and impact of climate change caused by greenhouse gas emissions is a major concern to ASEAN to sustain its economic growth, reduce vulnerabilities and conserve environment. The projected global warming due to emissions is likely to trigger serious consequences for humankind and other life forms including a rise in sea levels, which will endanger coastal areas and small islands, and a greater frequency and severity of extreme weather events.

Climate change is about more than extreme weather. There are socio-economic dimensions of a changing climate that are important determinants of whether ASEAN can tackle poverty, develop clean cities, and continue to deliver improvements in quality of life, as stipulated in the ASCC Blueprint 2025. There are many interlinkages between poverty, economic development and climate change; therefore, holistic approaches are required to address the current and future challenges that result from a changing climate.

At the global level, the United Nations Framework Convention on Climate Change (UNFCCC) provides a framework amongst its member countries to take actions on climate change mitigation (reducing emissions) and adaptation (increasing resilience). The Paris Agreement, an agreement under the UNFCCC which came into force in 2015 at the 21st Session of the Conference of the Parties (COP-21), encourages each country to submit Intended Nationally Determined Contributions (INDCs) that provide countries the flexibility to propose nationally appropriate climate change mitigation and adaptation efforts and implementation plans. Climate Change also features as an important United Nations Sustainable Development Goal. Goal 13 (Climate Change) highlights the need to take urgent action to combat climate change and its impacts.

As major sources of greenhouse gases, cities across the ASEAN region need to urgently seek low-carbon economies, infrastructure and transport. ASEAN has played an active and leadership role in addressing climate change in the global community. ASEAN has issued Declarations and Statements related to climate change, which express ASEAN's common understanding, position and aspirations towards a global solution to the challenge of climate change and their resolve to achieve an ASEAN community resilient to climate change through national and regional actions.

ASEAN Member States have taken actions to address climate change through various environmental, economic and social activities over the years. Several ASEAN Member States have announced intended national mitigation targets spread across sectors, including LULUCF (Land-use, land-use change and forestry), renewable energy, transport, hydropower, agriculture and waste, which will contribute towards low-carbon economies. Many ASEAN Member States have also started strengthening their adaptive capacity through mainstreaming climate change adaptation in development planning.

While a country's INDCs would largely determine where the largest reductions could be made, coherence across policies, technology transfer, funding for climate change and conducive trade agreements are required to translate the INDCs into action. ASPEN provides a forward-looking plan to promote cooperation and joint actions across ASEAN Member States that would allow for sustainably addressing the sources and impacts of climate change. Efforts under this Strategic Priority will focus on five programmatic areas: (i) adaptation and resilience, (ii) mitigation, (iii) technology transfer, (iv) climate finance, and (v) cross-sectoral coordination and global partnerships.

B. ACCOMPLISHMENTS

ASEAN Joint Statements on Climate Change aim to articulate ASEAN's common position during negotiations at the Conference of the Parties (COPs) to the UNFCCC. Statements are adopted by ASEAN Leaders during annual ASEAN Summits. As of July 2016, there have been seven ASEAN Joint Statement or Declarations on Climate Change shared at the UNFCCC COPs in 2007, 2009, 2010, 2011, 2014, 2015 and 2016.

ASEAN Member States have initiated joint collaborations between or across countries for implementing activities on climate change. Several flagship projects have been initiated. For example, ASEAN is working with India on two major initiatives: the ASEAN-India Project on Enhancing Climate Change Adaptation in Southeast Asia, which supported a scoping study on the needs of ASEAN Member States related to climate change adaptation; and the ASEAN-India Project on Climate Change Projections and Assessment of Impacts: Modelling and Capacity Building Programme for India and ASEAN Region, which focused on building capacity of climate experts from ASEAN Member States to analyse the current climate variability and project future climate change using the latest climate modelling application.

Collective efforts by ASEAN Member States to tackle air pollution and air quality degradation are also being implemented across the ASEAN region. Through the recent endorsement of the Kuala Lumpur Transport Strategic Plan (ASEAN Transport Strategic Plan) 2016-2025, ASEAN countries have agreed to actively pursue sustainable transport through formulating a regional policy framework on sustainable transport supporting low carbon modes of transport, energy efficiency, user friendly transport initiatives, integration of transport and land use planning⁴¹.

ASEAN Member States have supported other initiatives specific to peatlands and control of air pollution. For instance, the programme on the Sustainable Use of Peatland and Haze Mitigation in ASEAN (SUPA; 2016-2019), a joint ASEAN-EU initiative, is focusing on improving sustainable peatland management, managing risks of forest fires and reducing transboundary haze in ASEAN, and consequently mitigating the adverse impacts of climate change⁴².

Dialogue and development partners have identified ASEAN as an important unit for regional collaboration and integration and have tailored projects to address common issues in the region, such as SEAN-CC, GIZ ASEAN Forestry Project, and GIZ supported Transport and Climate Change Project⁴³.

C. OBJECTIVES

Over the next 10 years, the main objectives of the AWGCC Action Plan are:

- 1) To enhance regional and international cooperation to address climate change and its impacts on socio-economic development, health and the environment in ASEAN Member States through supporting mitigation, adaptation, technology transfer, capacity building, finance, cross sectoral coordination and global partnerships;
- 2) To contribute actively to the climate related global frameworks, such as the Paris Agreement under the UNFCCC, and Agenda 2020 for Sustainable Development and Sustainable Development Goals;
- 3) To coordinate activities within ASEAN Member States on climate change to share best practices and lessons learned as well as to facilitate access to climate finance.

⁴¹ ASEAN Secretariat (2015) Kuala Lumpur Transport Strategic Plan (ASEAN Transport Strategic Plan) 2016-2025. ASEAN Secretariat., Jakarta, Indonesia.

⁴² ASEAN Cooperation on Environment (2017) ASEAN, EU launch 40th anniversary of partnership; commit to new programmes on environment. ASEAN Secretariat: Jakarta, Indonesia.

⁴³ Directly participating countries are Indonesia, Malaysia, Philippines, Thailand, and Viet Nam. Others benefit indirectly by attending regional events, organised by the project. The project is part of the regional programme on "Cities, Environment and Transport in the ASEAN Region".

D. MEANS OF IMPLEMENTATION

ASEAN Working Group on Climate Change (AWGCC) will be the main responsible body for the implementation of the programmes and activities of this Strategic Priority Area. AWGCC serves the key purpose of (i) establishing linkages with the UNFCCC and finding common grounds or understanding for negotiation within UNFCCC; and (ii) coordinating activities within ASEAN Member States on climate change. Other relevant sectoral bodies and/or partners will be consulted for cross-sectoral and cross-pillar activities.

The AWGCC will oversee the implementation of activities under this Strategic Priority, while the ASEAN Environment Ministers and the ASEAN Senior Officials on Environment will provide policy and strategic guidance for its work. Lead countries of each programme/activity under the strategic priority are expected to develop proposal of detailed implementation workplan, implement the activity in coordination with AMS and ASEC, and provide regular progress updates to AWGCC.

E. POTENTIAL PARTNERS & STAKEHOLDERS:

The activities under this Strategic Priority could be implemented through partnerships and regional collaborations with Dialogue / Development Partners and organisations working actively on climate change. Potential partners or platforms include Climate Change International Training Center (CITC), United Nations Development Programme (UNDP), United Nations Programme on Reducing Deforestation and Forest Degradation (UNREDD), United Nations Environment Programme (UN Environment), Conservation International, and Center for People and Forests (RECOFTC). The Asian Development Bank (ADB) is actively working in the Greater Mekong Sub-region, including with some of ASEAN Member States, therefore providing potential space for collaboration with AWGCC.

Activities could also be implemented through cooperation and support from Dialogue/Development partners, for example, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), India (ASEAN-India Green Fund), China, Republic of Korea's support on Low-Carbon Green Growth Initiative and US Agency for International Development (USAID), as well as through multilateral cooperation, such as the European Union (EU) and the Green Climate Fund (GCF) and their accredited institutions in ASEAN Member States.

Many development partners are also working on climate change at the ASEAN level, so there is scope to discuss cooperation. For example, the 2016 Regional Strategy of the Swedish International Development Cooperation Agency (Sida) has a regional focus that also crosscuts climate change and can provide opportunistic space for AWGCC to engage on climate change dialogues and activities.

2. PROGRAMME AND ACTIVITIES⁴⁴

Outputs and Indicators	Proposed Activities	Lead country
Programme 1: Adaptation and Resilience		
Enhance local level climate change adaptation	1. Conduct a needs assessment to identify the needs of ASEAN Member States in terms of climate change adaptation.	Malaysia
	2. Develop a regional climate change adaptation work programme.	Malaysia
	3. Establish a network of existing ASEAN Partner Institutions on Climate Change Adaptation (ASEANadapt).	Malaysia
Improve the knowledge of experts from ASEAN Member States in using the latest climate change projections and impact assessment models	4. Report on “Assessment of Historical Climate Trends and Climate Variability Analysis for the Country”.	Viet Nam
	5. Report on “Assessment of Climate Change Projections for the Country”.	Viet Nam
Compilation of progress of adaptation activities in ASEAN Member States (e.g. National Adaptation Plans, Nationally Determined Contributions (NDCs))	6. Organise a regular Adaptation Forum, possibly back-to-back with AWGCC Meeting, to share information on ongoing and planned adaptation efforts in ASEAN Member States (e.g. best practices and success stories, mainstreaming efforts, and indicators for evaluating performance).	Thailand
	7. Compile information from the regular Adaptation Forum into publications for dissemination to relevant stakeholders.	Thailand
Enhanced collaboration with relevant sectors on loss and damage	8. Explore areas of collaboration and joint activities with relevant sectors on loss and damage (e.g. early warning systems, emergency preparedness, slow onset events, irreversible and permanent loss and damage, comprehensive risk assessment and management, community and ecosystem resilience, and disaster risk insurance).	Philippines

⁴⁴ The outputs and proposed activities will be further confirmed by AWGCC to accommodate future changes and are provided in detail in ANNEX 2e.

Enhanced adaptive skills and capacities of marginalised and vulnerable groups and other relevant stakeholder groups in the region	9. Develop regional coordinated community-based training programmes on adaptation, especially targeted for marginalised and vulnerable groups (e.g. providing experts, training materials and seed funding).	Indonesia
	10. Conduct Training of Trainers programmes on adaptation-related topics (e.g. gender mainstreaming and ecosystem-based adaptation approaches).	Indonesia
	11. Conduct trainings for relevant stakeholder groups (e.g. climatologists to do downscaling of climate models, farmers and local development planners).	
Programme 2: Mitigation		
Compilation of best practices on mitigating greenhouse gas (GHG) emissions from relevant sectors	1. Organise workshops, forums and exchange of personnel to share best practices on mitigating greenhouse gas (GHG) emissions from energy production and use, agriculture, land use, land-use change and forestry (including REDD/REDD+), forest fire prevention, industrial processes, building, transportation and waste in the region.	Singapore and Thailand
Better understanding and improved capacity to achieve Nationally Determine Contributions (NDCs) and implement Measurement, Reporting and Verification (MRV) techniques	2. Conduct workshops and trainings to promote understanding and capacity to achieve Nationally Determine Contribution (NDCs), and Measurement, Reporting and Verification (MRV) techniques.	Indonesia and Thailand
Report of studies on approaches to determine emissions from transport and land degradation	3. Conduct regional studies on emissions from land transportation in the ASEAN region.	Singapore
	4. Conduct regional studies on emissions from land and forest degradation including a review and analysis of existing studies.	Singapore
Better understanding and improved capacity to implement carbon cap and trade system in the region	5. Conduct regional studies to explore the possibility to develop carbon cap and trade, including carbon pricing system in the region.	Singapore
	6. Share information among ASEAN Member States on the regulation related to carbon market and mitigation.	Singapore
Mainstreamed climate change issues in other sectoral plans at national and regional level	7. Organise training(s) for relevant officials and national experts on streamlining climate change mitigation into sectoral workplan.	Cambodia

Programme 3: Technology Transfer		
Application of climate friendly technology transferred among ASEAN Member States and from developed countries, towards low carbon and green economy	1. Facilitate international support for technology transfer and advancing local technology to ASEAN, including through the UNFCCC Climate Technology Centre and Network (CTCN), based on the technology needs assessment for mitigation and adaptation.	Lao PDR
Strengthened science and policy interface in climate change related decision-making process	2. Enhance collaboration with the existing regional networks (e.g LoCarNet) for dialogue between science experts and policymakers on climate change.	Indonesia
Enhanced partnership with private sector	3. Promote dialogue with private sector to explore collaboration on climate change research and development (R&D) and technology transfer through various platforms.	Philippines
Programme 4: Climate Finance		
Better understanding on institutional arrangements for accessing funding, including multilateral funds such as Green Climate Fund, Green Investment Fund and Adaptation Fund.	1. Organise trainings and workshops on sharing of information and experiences on accessing multilateral funds, including developing a good proposal to access funding for climate change initiatives.	Viet Nam and Thailand
	2. Organise forums, workshops and study visits to share information and experience on promoting private sector investment in low carbon development, production, and technology.	Viet Nam and Thailand
	3. Develop and improve any existing handbook or manual on climate finance (covering, for example, how to meet eligibility requirements to access multilateral funds and capacity building strategies), and develop climate change-related training programmes.	Viet Nam and Thailand
Report on the compilation of best practices on climate change financing management in the region	4. Develop a report compiling best practices on climate change financing management in the region based on activities i. and ii.	<i>TBC</i>
Implementation of regional climate change activities with support from multilateral fund	5. Explore the possibility of collectively accessing multilateral funds for ASEAN-wide climate change programme (e.g. linking and sharing of climate data among ASEAN Member States).	Lao PDR
Programme 5: Cross Sectoral Coordination and Global Partnerships		
Improved cross-sectoral coordination among relevant ASEAN sectoral bodies	1. Explore the establishment of a cross-sectoral coordination platform on climate change (e.g. web-based sharing platform).	Myanmar
Strengthened climate change negotiating skills.	2. Conduct training(s) for junior climate change negotiators.	Viet Nam
	3. Provide a platform for sharing and stocktaking of information on the status of preparation for implementation of Paris Agreement of ASEAN Member States.	Viet Nam
Increased ASEAN's presence and visibility in	4. Issue ASEAN Joint Statement on Climate Change to the UNFCCC.	ASEAN Chair

the global community	Participate actively in global climate change events.	
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1. INTRODUCTION

A. BACKGROUND

The rising amount of waste and its management poses a serious challenge for most Southeast Asia countries, especially e-waste, plastic bags and food waste. Different types of wastes are often mixed together leading to unsustainable end-of-pipe management. Landfills remains the primary method to dispose solid waste and there is very little separation or pre-treatment beforehand of the waste collected; however, 3Rs (Reduce, Reuse, Recycle) and waste-to-energy systems are gaining popularity among some countries in the region. In 2012, Southeast Asia produced 202,000 tonnes of municipal solid waste (MSW) per day and this is predicted to double by 2025. The average municipal solid waste generation in 2012 was 1.03 kilogrammes per person, per day, and this is expected to increase to 1.38 kilogrammes per person per day by 2025. Four of the top five countries that contribute 60 per cent of the marine plastic waste are from ASEAN – Indonesia, the Philippines, Thailand and Viet Nam. However, campaign efforts have been made to discourage or penalise use of plastic materials and to encourage and incentivise use of non-plastic substitutes, so far with limited success.

In Southeast Asia, the continued use of pesticides especially in agriculture, some of which are highly toxic and banned elsewhere, is one of the biggest challenges in chemicals management. There is generally a fundamental lack of information on chemical use and distribution in the region and chemicals are often being dumped with little information or awareness of when and how to dispose of them properly. The biggest problem facing Southeast Asia in terms of chemicals management is the intensive use of, along with insufficient control over, pesticides in the agricultural sector. These chemicals are over-used and their residues have affected trade through the rejection of cross-border shipments, causing considerable economic losses to the countries concerned. Some other chemicals, such as asbestos which are carcinogenic, are banned in other regions, but are still being used in some Southeast Asian countries. According to the WHO, asbestos is one of the ten priority chemicals of high concern. The legislative and institutional infrastructure and capacity in some Southeast Asia's developing countries to manage chemicals are still not sufficient.

There are four international conventions addressing chemicals management and related issues. Goal 12 (Responsible Consumption and Production) of the United Nations Sustainable Development Goals, which focuses on ensuring sustainable consumption and production patterns and encourages countries to ratify these conventions for better chemicals management. With the exception of the Minamata⁴⁵ Convention, currently, most ASEAN Member States have ratified the remaining three conventions – Basel⁴⁶, Rotterdam⁴⁷ and Stockholm⁴⁸.

The ASEAN Working Group on Chemicals and Waste (AWGCW) came into existence in 2015 following a decision by the ASEAN Senior Officials on the Environment (ASOEN) to change the name and functions

⁴⁵ Minamata Convention is to protect the human health and the environment from anthropogenic emissions and releases of mercury and mercury compounds. It was adopted on 10 October 2013 and will enter into force on the 16 August 2017.

⁴⁶ Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal was adopted on 22 March 1989 and entered into force on 5 May 1992. It is aimed at addressing issues pertaining to the control of the movement and disposal of hazardous waste across national boundaries.

⁴⁷ Rotterdam Convention was adopted on 10 September 1998 to promote shared responsibility and cooperative efforts among Parties in the international trade of certain hazardous chemicals including pesticides and industrial chemicals and contribute to the environmentally sound use of those hazardous chemicals. It entered into force on 24 February 2004.

⁴⁸ Stockholm convention on Persistent Organic Pollutants was adopted on 22 May 2001 and entered into force on 17 May 2004. It aims to minimise the risks from the agreed list of POPs through measures to reduce and/or eliminate their emissions or discharges.

of the former ASEAN Working Group on Multilateral Environmental Agreements (AWGMEA). The new Working Group's primary purpose is to strengthen regional cooperation on chemicals and waste management including the implementation of chemicals and waste-related multilateral environmental agreements, such as the Basel, Rotterdam, and Stockholm (BRS) Conventions, the Minamata Convention, the Montreal Protocol, as well as other internationally agreed-upon systems, such as the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), the 2020 Goal of Strategic Approach to International Chemicals Management (SAICM) and the UN 2030 Sustainable Development Goals.

ASPEN provides a forward-looking plan to promote cooperation and joint actions across ASEAN countries that would allow for environmentally sound chemicals and wastes management. Efforts under this Strategic Priority will focus on seven programmatic areas: (i) management of hazardous waste and other waste defined under the Basel Convention, (ii) cooperation on transboundary movements of [hazardous] chemical and hazardous waste, (iii) sound chemicals management, (iv) environmentally sound management technologies (est) towards green industries, (v) ASEAN presence in the global community; (vi) chemicals and hazardous wastes accident prevention, preparedness and emergency responses, and (vii) remediation of contaminated sites from chemicals and hazardous wastes.

B. ACCOMPLISHMENTS

ASEAN continues to be actively engaged in addressing global environmental issues in accordance with the principle of common but differentiated responsibilities. ASEAN Member States have made commitments on global environmental issues by ratifying major multilateral environmental agreements (MEAs) related to chemicals and waste management, such as, the BRS (Basel, Rotterdam and Stockholm) conventions, as well as the Montreal Protocol. As a result, all ASEAN Member States have significantly reduced the use of ozone depleting chlorofluorocarbons to less than 1,000 tonnes per year since 2006 from as high as 9,000 tonnes in 1995. Many ASEAN Member States are also several years ahead of internationally agreed deadlines to end the production and consumption of ozone-depleting substances. The status of ratification and relevant national reports of Parties can be accessed through the Convention websites^{49,50}.

Regional cooperation among ASEAN Member States in promoting capacity building, sharing experiences and best practices, and acting collectively to implement the MEAs have helped countries to build confidence and synergise their efforts to contribute effectively to addressing global environmental issues. These activities are carried out under the purview of the previous AWGMEA.

Key accomplishments under the AWGCV have included 1) sharing information and experience among ASEAN Member States, and promoting ratification and capacity building on relevant chemicals and waste MEAs, 2) promoting and developing joint ASEAN declaration and position papers at international negotiation meetings of relevant MEAs, 3) sharing information on national-level implementation of chemicals and waste MEAs, and updates on the discussion and progress of relevant international process, and 4) implementing ASEAN cooperative projects, such as, the ASEAN-UNEP International Environment Technology (IETC), which conducted joint regional studies on Waste Management, completed in 2016, with outcome reports on the management of general waste, electronic waste, and mercury waste. Studies on Waste Management and Mercury Waste inventory were implemented by Asian Institute of Technology (AIT), while the E-Waste study was conducted by Basel Convention Resource Centre-Southeast Asia (BCRC-SEA). The results and recommendations of the studies served as inputs for ASEAN in policy decision making.

An ASEAN Joint Declaration on Hazardous Chemicals and Wastes Management was adopted by the ASEAN Ministers on Environment on 26 April 2017 and presented at the joint Basel-Rotterdam-Stockholm conventions (BRS) Conference of Parties in Geneva, Switzerland, during 24 April to 5 May

⁴⁹ Basel, Rotterdam and Stockholm (BRS) Conventions website (<http://www.brsmeas.org>)

⁵⁰ Montreal Protocol website (<http://ozone.unep.org>)

2017. The Joint Declaration urgently highlighted the need to implement environmentally sound management of hazardous chemicals and wastes, particularly the recycling, recovery, and treatment of hazardous wastes, more effectively through governance, capacity building and exchange of information. It called upon ASEAN Member States to continue working closely, strengthen cooperation, and further mobilise capacity building and exchange of relevant information, including transfer of technology. It also highlighted the need to explore new additional financial resources towards the establishment of environmentally sound hazardous substances and waste management, and achieving the 2020 Goal of Strategic Approach to International Chemicals Management (SAICM) and the United Nations Sustainable Development Goals. The Joint Declaration also encouraged ASEAN Member States to continue its efforts, in accordance with agreed international frameworks and agreements, to significantly minimise the adverse impacts on human health and the environment caused by the release of hazardous chemicals and wastes to air, water and soil in the ASEAN region.

C. OBJECTIVES

Over the next 10 years, the main objectives of the AWGCW Action Plan are:

- 1) To further strengthen regional coordination and cooperation in addressing wastes and chemicals-related issues including controlling transboundary movement of hazardous waste under relevant multilateral environmental agreements, such as Basel, Rotterdam, Stockholm, and Minamata conventions, and Montreal Protocol as well as internationally agreed-upon systems such as the Globally Harmonised System of Classification and Labelling of Chemicals (GHS).
- 2) To achieve the environmentally sound management of hazardous chemicals and wastes throughout their life cycle, in accordance with agreed international frameworks.
- 3) To reduce the growing threats of hazardous chemicals and wastes to human health and environment through, among others, enhancing the regional cooperation in preventing the illegal traffic of transboundary movement of hazardous chemicals and waste, and capacity building related to good management practice in handling hazardous chemicals and wastes.

D. MEANS OF IMPLEMENTATION

ASEAN Working Group on Chemicals and Waste (AWGCW) will be the main responsible body for the implementation of the programmes and activities of this Strategic Priority Area. Other relevant sectoral bodies and/or partners will be consulted and coordinated for cross-sectoral and cross-pillar activities.

The AWGCW will oversee the planning, technical and implementation issues under this Strategic Priority Area, while the ASEAN Environment Ministers and the ASEAN Senior Officials on Environment will provide policy and strategic guidance for its work. Lead countries of each programmes/activity under the strategic priority are expected to develop proposal of detailed implementation workplan, implement the activity in coordination with AMS and ASEC, and provide regular progress updates to AWGCW.

E. POTENTIAL PARTNERS & STAKEHOLDERS

The activities under this Strategic Priority could be implemented through partnerships and regional collaborations with organisations working on chemicals and wastes management. Potential partners or platforms include the Regional Chemical Management Forum supported by the Swedish Chemical Agency (KemI), the Regional Forum on Environment and Health coordinated by UN Environment and WHO, United Nations Environment Programme – International Environment Technology Centre (IETC) and the Regional 3R Forum in Asia.

Activities could also be implemented through cooperation and support from Dialogue/Development partners, for example, Japan and Republic of Korea. Both these countries are currently providing technical and financial assistance to countries in ASEAN to build capacity on chemicals and waste

management, such as, POPs, as well as in implementing chemicals and waste-related conventions. There are civil society organisation (CSO) groups working on chemicals and waste issues in the region, for example, under the GEF network or Regional Chemical Management Forum (e.g. Ban Toxics and Pesticide Action Network), that can be invited to participate in relevant consultative or review workshops or to provide inputs and support during the planning, development and implementation process of the various cooperation activities.

2. PROGRAMMES AND ACTIVITIES⁵¹

Outputs and Indicators	Activities	Lead Country
Programme 1: Hazardous Waste Management and Other Waste Defined Under the Basel Convention		
Promote cross sectoral cooperation towards good management practices of hazardous waste	1. Conduct a regional forum on hazardous industrial waste participated by industry, trade and environment sector.	Indonesia
	2. Conduct a regional forum on the impact of hazardous medical waste participated by participants from the health sector.	Indonesia
	3. Conduct capacity building on the management of hazardous waste, such as the sampling methods on hazardous characteristic and toxicity test, illegal dumping of hazardous waste, study visits, and exchange of good practices and information among ASEAN Member States and between ASEAN and Partner countries.	Indonesia
Establish ASEAN Guidelines Hazardous Waste Management	4. Conduct a series of workshop to develop the guidelines on hazardous waste management.	TBC
Reduced generation of hazardous waste	5. Organise activities related to 3R (Reduce, Reuse, Recycle) such as community awareness, capacity building, etc.	TBC
Programme 2: Transboundary Movements of [Hazardous] Chemical and Hazardous Waste		
ASEAN Guidelines on Preventing Illegal Trafficking of Hazardous Waste from Within and Outside ASEAN	1. Conduct a study on the national regulations related to movements of hazardous waste of ASEAN Member States.	TBC
	2. Conduct a series of workshop for developing the Guidelines on Preventing Illegal Trafficking of Hazardous Waste from Within and Outside ASEAN.	TBC
Clearing House Mechanism on Illegal Trafficking of hazardous waste in cooperation with the BCRC-SEA	3. Conduct capacity building for relevant officers, such as customs and border control officers.	TBC
	4. Organise a ASEAN and BCRC-SEA workshop to develop the Clearing House Mechanism.	TBC
Programme 3: Sound Chemicals Management		
ASEAN Chemical Outlook	1. Conduct a study related to sound chemicals management.	TBC
	2. Development of ASEAN chemical outlook.	TBC
Enhanced institutional and human capacity to strengthen the	3. Conduct ASEAN forum and capacity building on sound chemicals management.	TBC

⁵¹The outputs and proposed activities here will be further confirmed by the AWGCW to accommodate future changes and are provided in detail in ANNEX 2f.

implementation of chemical-related conventions (Rotterdam, Stockholm and Minamata conventions, Montreal Protocol)		
Enhanced institutional and human capacity to address emerging issues defined by the Strategic Approach to International Chemicals Management (SAICM), such as, nanotechnology, endocrine disruptors, environmentally persistent pharmaceutical pollutants, chemicals in products and marine debris.	4. Conduct forums or workshops on emerging issues, such as, nanotechnology, endocrine disruptors, environmentally persistent pharmaceutical pollutants, chemicals in products and marine debris.	<i>TBC</i>
Programme 4: Environmentally Sound Management Technologies (EST) towards Green Industries		
ASEAN Guidelines for Environmentally Sound Technologies (EST) and cleaner production towards Green Industries.	1. Conduct series of workshops to develop the Guidelines on the Environmentally Sound Technologies (EST) and cleaner production towards Green Industries.	<i>TBC</i>
ASEAN Work Plan/Roadmap on promoting the Environmentally Sound Technologies (EST) and Industries, and cleaner production. EST are applied in the selected industries, particularly small and medium enterprises. Demonstration site of EST applied in industries.	2. Conduct a workshop to promote ASEAN EST/cleaner production and needs assessment on EST.	<i>TBC</i>
	3. Conduct a series of workshop to develop Work Plan the Environmentally Sound Technologies (EST) and Industries, and cleaner production.	<i>TBC</i>
	4. Apply the EST in selected industries in selected ASEAN Member States.	<i>TBC</i>
	5. Conduct workshop on Green Industry Monitoring.	<i>TBC</i>
	Promotion on the concept of green chemistry in chemical production.	6. Conduct Workshop on green chemistry concept in chemical production and design to develop safer alternatives.
Programme 5: ASEAN Presence in the Global Community		
ASEAN Joint Statement at the relevant international negotiation processes related to hazardous waste.	1. Develop ASEAN Joint Statement when necessary.	<i>TBC</i>
Joint ASEAN statements at relevant international negotiation processes related to chemicals.	2. Develop ASEAN Joint Statement when necessary.	<i>TBC</i>

Programme 6: Chemicals and Hazardous Wastes Accident Prevention, Preparedness and Emergency Responses		
Capacity building on accident prevention, preparedness and emergency responses.	1. Conduct regional training, workshops and seminars for policy makers, operators, law enforcement officers, etc.	Thailand
	2. Disseminate information on guidelines related to chemicals and hazardous wastes applied by ASEAN Member States.	Thailand
	3. Share the best practices from each ASEAN Member States.	Thailand
	4. Develop communication platform for emergency responses.	Thailand
Programme 7: Remediation of Contaminated Sites from Chemicals and Hazardous Wastes		
Capacity building and information exchange on best technology and practices.	1. Organise regional training workshops and seminars for policy makers, operators, law enforcement officers, etc.	<i>TBC</i>
	2. Disseminate information on guidelines related to chemicals and hazardous wastes applied by ASEAN Member States.	<i>TBC</i>
	3. Share the best practices from each ASEAN Member States.	<i>TBC</i>

STRATEGIC PRIORITY 7: ENVIRONMENTAL EDUCATION [AND SUSTAINABLE CONSUMPTION AND PRODUCTION]

1. INTRODUCTION

A. BACKGROUND

Education is one of the most effective means to promote social development and community awareness on the importance of environmental sustainability. Education for Sustainable Development and Environmental Education (ESD/EE) plays a pivotal role in changing the mind-set and behaviour of communities including children, youths and adults to be responsible in maintaining a balance between environmental conservation and sustainable development.

Most ASEAN Member States are transitioning from an agrarian society to an industrialised society. This would necessitate using more natural resources to provide for the region's growing population, economic development and urbanisation, as well as the increase in domestic consumption, infrastructure, transportation, facilities, and services. Resource use and consumption patterns are increasing in line with expanding urbanisation and industrialisation. Although efficiency and productivity are increasing, improved waste and sustainable consumption and production management is needed across the ASEAN region.

The overall pattern of production and consumption show an increasingly unsustainable trend across ASEAN Member States and needs to be urgently tackled. ASEAN needs to move forward into 3R (Reduce, Reuse, Recycle)/circular economy, green finance and ecolabelling for improving its resource and production sustainability. It also needs to foster efforts including awareness raising, capacity building, creation of databases and ratification of International Conventions, to address issues of environmental management and sustainable production and consumption.

In 2002, the United Nations General Assembly proclaimed the UN Decade of Education for Sustainable Development (DESD) 2005-2014, emphasising that 'education is an indispensable element for achieving sustainable development'. Recognizing the fundamental role of environmental education in changing human behaviour towards environment, all 10 ASEAN Member States have established national policy frameworks on environmental education and actively implement EE-related activities. Countries are also calling upon to address resource and process efficiency to achieve sustainable production and consumption of products. Both education and sustainable consumption and production are important goals (Goal 4 (Quality Education), and Goal 12 (Responsible Consumption) respectively) of the 2030 Agenda on Sustainable Development.

At the regional level, the ASEAN Environmental Education Action Plan (AEEAP) was developed for the period of 2000-2005, 2008-2012, and 2014-2018 to serve as a roadmap of actions related to environmental education (EE) and Education for Sustainable Development (ESD) at national and regional level to contribute to the implementation of the ASCC Blueprint 2010-2025, ASEAN Work Plan on Education 2016-2020 and UN Decade of Education for Sustainable Development (DESD). However, in view of the development of ASPEN and the ASCC Blueprint 2025, ASEAN Member States reviewed the AEEAP 2014-2018 and integrated selected elements of AEEAP to Strategic Priority 6 or AWGEE Action Plan of the ASPEN.

ASPEN provides a forward-looking plan to promote cooperation and joint actions across ASEAN Member States that would allow for using education to sustainably address both environmental conservation and sustainable development. Efforts under this Strategic Priority will focus on four programmatic areas: (i) ASEAN Eco-school Programme, (ii) ASEAN Green Higher Education Programme, (iii) Regional Communication, Education and Public Awareness Initiatives, and (iv) Sustainable Consumption and Production.

B. ACCOMPLISHMENTS

Some key programmes of AWGEE under the implementation of AEEAP (2000-2005), (2008-2014), and (2014-2018) include the ASEAN Eco-Schools Award Programme. The awards, first held in 2012 in Malaysia, were presented to a school from each ASEAN Member State representing Primary and Secondary Schools. These schools were nominated by the National Government based on their achievement and efforts in implementing the ASEAN Eco-Schools Programme according to the ASEAN Eco-Schools Guidelines. The second Eco-Schools Awards was held in 2015 in Myanmar back-to-back with the launching of ASEAN Environment Year 2015.

Other activities include the ASEAN Plus Three Youth Environment Forum (AYEF), a non-regular and voluntary based activity hosted by ASEAN Member States in cooperation with dialogue partners. Three AYEF were held in 2007, 2010 and 2012, respectively. The last AYEF was held in Singapore in 2016, supported by ASEAN Plus Three Cooperation Fund. ASEAN Member States have also developed and contribute to the ASEAN Environmental Education Inventory Database (AEEID), a comprehensive online environmental education directory which offers up-to-date and detailed information on schools, trainings, events and institutions related to environmental education for reference seekers. It also offers environment-related materials, publications, and resource persons⁵².

ASEAN Member States also took part in the ASEAN+3 Leadership Programme on Sustainable Consumption and Production, which supported capacity building for policy makers focusing on policy development and implementation, and upscaling and mainstreaming of sustainable consumption and production practices. It intended to expose policy makers to practical learning cases that demonstrate a change process from a business-as-usual scenario to one which effectuates, or can potentially influence, change in behaviour, practice and systems, as well as in policy making. The programme was held annually and supported by UNEP-SWITCH Asia, UNU-IAS Hanns Seidel Foundation, and UNIDO.

In terms of sustainable consumption and production patterns, ecolabelling of environmental products aiming to encourage changes in consumption patterns has been increasingly discussed at the regional level. Both Thailand and Viet Nam have already established regional cooperation on ecolabelling with other countries through, for example, the Asia Pacific Roundtable on Sustainable Consumption and Production. However, common core criteria are yet to be developed under these agreements and the Global Ecolabelling Network (GEN)'s 'Internationally Coordinated Ecolabelling System' has been suggested to assist countries, especially those without established ecolabelling schemes⁵³.

C. OBJECTIVES

Over the next 10 years, the main objectives of the AWGEE Action Plan are:

- 1) To promote environmental protection through effective environmental education and awareness programmes that enhance capacity and capability to adapt and respond to current and emerging environmental threats and challenges, so as to create a dynamic, sustainable, and resilient ASEAN Community that will proactively contribute to the achievement of global sustainable development goals.

D. MEANS OF IMPLEMENTATION

ASEAN Working Group on Environmental Education (AWGEE) will be the main responsible body for implementation of the programmes and activities of this Strategic Priority Area. Other relevant sectoral bodies and/or partners such as the ASEAN Senior Officials Meeting on Education (SOM-ED) will be consulted for cross-sectoral and cross-pillar activities.

⁵² ASEAN Environmental Education Inventory Database (<http://aeeid.asean.org/>)

⁵³ Asia-Pacific Roundtable on Sustainable Consumption and Production (<http://www.aprscp.net/>)

Activities related to sustainable consumption and production (SCP) will be implemented in coordination with the lead country for ASEAN cooperation on SCP (currently Indonesia) and other ASOEN working groups where relevant.

The AWGEE will oversee implementation of programmes and activities under this Strategic Priority, while the ASEAN Environment Ministers and the ASEAN Senior Officials on Environment will provide policy and strategic guidance for its work. Lead countries of each programme/activity under the strategic priority are expected to develop detailed implementation workplan, implement the activity in coordination with AMS and ASEC, and provide regular progress updates to AWGEE.

As the issue of environmental education and sustainable consumption and production is likely to cross-cut other Strategic Priorities such as those on sustainable cities, chemicals and waste, and climate change, collaboration across relevant sectoral bodies responsible for such priority areas of the ASPEN will be key for successful implementation.

E. POTENTIAL PARTNERS & STAKEHOLDERS

The activities under this Strategic Priority could be implemented through partnerships and regional collaborations with organisations working actively on environmental education and sustainable production and consumption. Potential partners or platforms include Southeast Asia Ministers of Education Organization (SEAMEO), as well as Hanns Seidel Foundation, United Nations Environment Programme (UN Environment), United Nations Industrial Development Organization (UNIDO), and United Nations Educational Scientific and Cultural Organization (UNESCO).

Activities could also be implemented through cooperation and support from Dialogue/Development partners, for example, Japan International Cooperation Agency (JICA), Republic of Korea, China, Australia, and the European Union (EU).

Many development projects, such as USAID-funded Lowering Emissions in Asia's Forests project, have contributed to curriculum development, which can be used to expand the efforts of AWGEE. The AWGEE can also liaise with ASEAN University Network (AUN), United Nations University-Institute for Advanced Study of Sustainability (UNU-IAS) and other relevant educational and research institutes for evidence-based knowledge and its dissemination in areas of environmental conservation and sustainable production and consumption.

2. PROGRAMME AND ACTIVITIES⁵⁴

Outputs and Indicators	Activities	Lead Country
Programme 1: ASEAN Eco-Schools Programme		
Improved ASEAN guidelines and criteria for eco-schools	1. Review and improve existing ASEAN Guidelines on Eco-Schools, including ASEAN criteria for eco-schools.	Malaysia and Thailand
	2. Confer ASEAN Eco-Schools Award to selected eco-schools in ASEAN Member States.	Malaysia
Replication of best practices among eco-schools in ASEAN Member States	3. Establish an ASEAN network and forum for eco-schools in ASEAN.	Malaysia and Thailand
	4. Conduct sister schools exchange or pilot project.	Malaysia
Regional Learning/Teaching Modules on Environmental Education for ASEAN Region	5. Conduct a baseline assessment and stocktaking on the extent to which EE is incorporated in curriculum in schools and higher education institutions (basic education institutions).	Philippines and Thailand
	6. Organise a workshop or seminar to develop learning and teaching modules on environmental education for ASEAN Member States.	Malaysia and Thailand
Enhanced cooperation of eco-schools with local governments to contribute to green city development	7. Organise a symposium to promote and expand the implementation of EE through partnership with ESC Model Cities Programme for ASEAN Member States.	Malaysia
Programme 2: ASEAN Green Higher Education Programme		
ASEAN guidelines and criteria for green higher education institutions	1. Develop ASEAN guidelines and criteria for green higher education institutions.	Philippines and Thailand
	2. Confer ASEAN green higher education institutions Award to selected institutions in ASEAN Member States (related to ASEAN Eco Schools Award).	Malaysia and Thailand
	3. Organise a workshop to review and improve existing ASEAN Guidelines on Eco-Schools including the criteria for Eco-Schools.	Malaysia
Replication of best practices among green higher education institutions in ASEAN Member States	4. Establish an ASEAN network and forum for eco-schools in ASEAN	Philippines
Programme 3: Regional Communication, Education and Public Awareness (CEPA) initiatives		

⁵⁴The outputs and proposed activities here will be further confirmed by the AWGEE to accommodate future changes and are provided in detail in Annex 2g.

Improved ASEAN Environmental Education Inventory Database (AEEID)	1. Enrich the content of AEEID and update data and information regularly.	ASEC
	2. Redesign the concept of AEEID to be more attractive.	ASEC
	3. Conduct promotional activities to promote the use of AEEID.	ASEC
ASEAN training and promotional opportunities and materials on EE	4. Develop an ASEAN training manual on EE for educators.	Cambodia
	5. Conduct teacher and lecturer trainings on EE.	Cambodia
	6. Participate and contribute proactively to global initiatives and frameworks related to EE.	Cambodia
Active participation of empowered youth in promoting environmental protection	7. Conduct a ASEAN Youth Environment Forum.	Singapore and Brunei Darussalam
	8. Develop a recognition scheme for youth eco-champions.	Singapore and Brunei Darussalam
	9. Support regional youth-led environmental initiatives.	TBC
Programme 4: Sustainable Consumption and Production (SCP)		
Strengthened Public-Private Partnership (PPPs) to promote the adoption of environmentally-sound technologies for maximising resource efficiency	1. Conduct ASEAN leadership programme for policymakers and business leaders on sustainable consumption and production practices (e.g. sound waste management, energy efficiency).	Indonesia
	2. Develop joint initiative on SCP with private sector as part of their Corporate Social Responsibility (CSR) activities.	Indonesia
Enhanced multi-stakeholder awareness and participation on SCP practices	3. Conduct ASEAN forum for multi-stakeholders to promote awareness and participation on SCP-related practices (e.g. sound waste management, energy efficiency)	Indonesia
	4. Produce educational and promotional materials on SCP.	Indonesia