



**ON ASEAN WAY:
ENVIRONMENTAL GOVERNANCE VS ENVIRONMENTAL PERFORMANCE
IN ASEAN**

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ABSTRACT

Regionalism in ASEAN is implemented according to the principles of consensus decision-making, respect for national sovereignty, non-interference in the domestic affairs of members, and peaceful dispute settlement mechanism through consultation and negotiation. ‘ASEAN Way’ is the term to describe the development and practices of ASEAN integration. The influence of norms and identity of ASEAN Way is also reflected in ASEAN’s environmental governance. Studies claimed that ASEAN Way, with its principles, lessened the control powers of the ASEAN, particularly in terms of its efforts to address environmental challenges, as effectiveness of environmental governance is hampered by weaknesses in monitoring, assisting and ensuring state compliance. The aim of this research is to assess ASEAN Way of environmental governance in addressing the region’s environmental challenges. Desk study is used in this research. Both qualitative and quantitative data is analysed to provide comprehensive examination of the conformity between ASEAN’s environmental planning and environmental performance. Analysis on ASEAN Cooperation on Environment documents and certain environmental indicator data represent exhaustive plans and programmes of ASEAN in addressing environmental challenge, even though effectiveness of the implementation remains uncertain. Under ASEAN Way principles, voluntary compliance in environmental action has resulted in unresolved environmental issues. Multilevel environmental governance offers a solution in filling the gap of ASEAN Way’s restrictions for better environmental governance practice, particularly in ensuring state compliance. Thus, still in accordance with ASEAN Way principles, environmental governance in ASEAN could be implemented effectively to catch up with rising environmental demands in the region.

Keywords: ASEAN Way, environmental governance, environmental cooperation, multilevel environmental governance

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1. INTRODUCTION

The Association of South East Asian Nation, or ASEAN, was established in 1967 with the signing of ASEAN Declaration by five countries in South East Asia (Indonesia, Malaysia, the Philippines, Singapore and Thailand). Rationale behind the establishment of ASEAN was to promote peace and stability in the region, with aims of 'cooperation in the economic, social, and cultural development in the promotion of stable, peaceful and prosperous region'. Today, ASEAN consists of ten ASEAN Member States (AMS), including Brunei Darussalam, Viet Nam, Lao PDR, Myanmar and Cambodia. ASEAN intensified its regional integration agenda with the launch of 'ASEAN Community' in 2015 and adoption of ASEAN Community Vision 2025 and the 2024 blueprints for the ASEAN Political Security Community (APSC), the ASEAN Economic Community (AEC) and the ASEAN Socio-Cultural Community (ASCC).

ASEAN is the most durable and successful regional association in the developing world (Hill and Menon, 2010). ASEAN is currently the third largest economy in Indo-Pacific region and the fifth largest economy in the world. Total population in ASEAN almost reached 650 million people, exceeding European Union or North America Population. With its big population size, ASEAN represents the world's third largest market after China and India, and the world's third largest labour force. Since the past three decades, ASEAN gains more than five percent annual economic growth, higher than the global average economic growth rate. ASEAN is forecasted to maintain its high growth rate at least until 2023 (Deutsche Bank, 2019). ASEAN is a rapidly growing region, with AMS are among the world's best performing emerging economies.

Table 1. ASEAN Basic Indicators, 2018

Country	Total Area (km2)	Total Population (000)	Annual Pop Growth (%)	GDP at Current Prices (US\$ mil)	GDP per Capita at Current Prices (US\$)	GDP Growth (%)
Brunei Darussalam	5.765	442,4	3,0	13.557	30.645	0,1
Cambodia	181.035	15.981,8	1,7	24.634	1.541	7,5
Indonesia	1.916.862	265.015,3	1,2	1.041.562	3.930	5,2
Lao PDR	236.800	6.887,1	2,0	18.096	2.627	6,3
Malaysia	331.388	32.385,0	1,1	358.412	11.067	4,7
Myanmar	676.576	53.625,0	0,4	77.264	1.441	6,8
Philippines	300.000	106.598,6	1,6	342.693	3.215	6,2
Singapore	720	5.638,7	0,5	364.076	64.567	3,1
Thailand	513.140	67.831,6	0,3	505.060	7.446	4,1
Viet Nam	331.230	94.666,0	1,1	241.039	2.546	7,1
ASEAN	4.493.516	649.071,5	1,1	2.986.391	4.601	5,2
World	510.072.000.000	7.594.270,4	1,1	85.804.391	11.298	3,0

Source: ASEAN Statistics, 2019; CIA World Factbook, 2019; World Development Indicators; 2019.

Regionalism is defined as a political will to create a formal arrangement among states on a geographically restricted basis (Hoshiro, 2013). Regionalism in ASEAN is implemented according to three key principles: consensus decision-making, respect for national sovereignty, and non-interference in the domestic affairs of members. Completed by peaceful dispute settlement mechanism through consultation and negotiation, those principles shape 'ASEAN Way' of regionalism. The ASEAN Way is ASEAN norm, culture, and identity. In ASEAN regionalism, informal, flexible and network-like institutionalisation is pursued. Soft law, with non-legally binding plans and agreements is more preferable than hard law. National actions, rather than centralised regional bureaucracy, are the main force of ASEAN regionalism.

The ASEAN Way has been criticized for its lack of authority and its ability to implement agreements. There has been no specific mechanism to penalise non-compliance with formal policies, as the implementation of most agreements in ASEAN are in 'common goal but differentiated

responsibilities' principle. Regional integration in ASEAN remains a state-driven process, and ASEAN Secretariat is more of an administrative body of ASEAN. Nevertheless, relative lack of conflict and maintained high economic growth in the region are highlighted as evidence of ASEAN's success. Maintaining ASEAN Way principles may well be necessary if ASEAN is going to stay unified as a regional bloc, particularly given AMS' highly diverse economic development and strategic interests (Chalk, 2015).

As ASEAN experiencing rapid economic growth, there arise concerns that there has been a corresponding stress on natural resources in the region. The patterns of production and consumption show an increasingly unsustainable trend across the ASEAN region (ASEAN Secretariat, 2017). Environmental problems arise as the result of industrialization and increasing demand in the region, growing into transboundary environmental problems. In the existence of this transboundary challenge, individual state interests in mitigating or adapting to environmental problems are increasingly difficult to define or pursue unilaterally.

Coordinated responses hold out the promise of mutual benefit in overcoming the challenges of transboundary environmental problems' negative externalities through a more effective use of scarce expertise, knowledge and capacity (Elliott, 2017). Yet, environmental governance in ASEAN has been characterized by soft institutionalism, a preference for non-binding agreements, a reliance on national institutions, and a general reluctance to interfere in the environmental practices of member states (Elliott, 2012). ASEAN agree on common sustainability and resilience measures, decide how to implement them, and contribute with regard to their capacity and capability, acknowledging that AMS has achieved different levels of development and therefore has different approach in addressing environmental issues. The ASEAN Way has promoted building stable relations, agreeing upon general policy, and fostering capacity building measures in the region, but also been challenged by environmental challenges that are increasingly common, shared and transnational.

1.1. Research Problem

Environmental governance refers to interventions and regulations impacting the environment through mutually beneficial actions and decisions made by the state, communities, corporations and/or non-governmental organizations (Islam et. al, 2016). ASEAN implement its environmental governance in the form of cooperation and joint action between AMS, reflecting on its ASEAN Way principles. Studies claimed that ASEAN Way, with its principle of consensus, preservation of sovereignty, and non-interference lessened the control powers of the ASEAN, particularly in terms of its efforts to address environmental challenges. While ASEAN environmental agreements and programmes are highly ambitious, they often lack accountability and enforceability. Effectiveness of environmental governance is hampered by weaknesses in monitoring, assisting and ensuring state compliance. Some even argue that ASEAN Way is inappropriate for dealing with environmental challenges.

1.2. Research Question

How is ASEAN Way governance and its performance in addressing environmental challenges in the region?

1.3. Hypothesis

Despite slow and often uneven pace of environmental governance implementation, ASEAN has been successful in shaping a common regional environmental policy framework and establishing a basis for capacity building in region, even though there still exist gaps between the commitment and enforcement in terms of environmental governance.

1.4. Research Objective

The aim of this research is to assess ASEAN Way of environmental governance in addressing the region's environmental challenges.

2. METHODOLOGY

To assess the environmental governance as well as environmental performance of ASEAN, desk study will be used in this research. Both qualitative and quantitative data will be analysed to provide comprehensive examination of the conformity between environmental planning and environmental performance of ASEAN. Literature review and secondary data analysis regarding ASEAN environment will be conducted. Qualitative data is an important instrument to assess ASEAN environmental governance. It is obtained through document study of ASEAN Cooperation on Environment. The documents include *ASEAN's Statements, Declarations, Action Plans and Agreements* provided in the ASEAN Cooperation on Environment website.

Quantitative data is an important instrument to assess ASEAN environmental performance. Quantitative data is obtained from several sources, including Yale University, the World Bank databank, ASEAN Fifth State of the Environment Report, and Arcadis Design & Consultancy. Overall performance and trend in environmental performance in ASEAN will be analysed from the Environmental Performance Index (EPI). For the detailed environmental performance, this research will use proxies of Seven Strategic Priorities and Programmes of ASEAN Cooperation on Environment. The proxies include *nature and conservation biodiversity; coastal and marine environment; water resources management; sustainable cities; climate change; chemicals and waste; and environmental education*.

3. ASEAN WAY OF REGIONALISM AND ENVIRONMENTAL GOVERNANCE IN ASEAN: HISTORY AND CURRENT PATHWAYS

The ASEAN Member States (AMS) have a certain sense of shared historical, political, and cultural features. One of them is the history of colonialism. Almost all AMS (except Thailand) were colonised in the past, resulting the conspicuous identity of sovereignty preservation concern by AMS. Regionalism in ASEAN is rather unique: instead giving up partial sovereignty for deeper regional integration through harmonization in politics and economics aspects, AMS chose to place state sovereignty as one of the highest principles of their regionalism. ASEAN has a prevailing instinct to uphold the principle of non-interference in the internal affairs of AMS. Therefore, regionalism in ASEAN is shaped to be informal, flexible, and network-like styled. Network-like regionalism is assumed to be inclusive and more effective than formal institutional structures in enhancing intra-regional engagement (Elliott, 2011).

‘ASEAN Way’ is the term to describe the development and practices of ASEAN regionalism. Apart from EU-style institutional economic and political integration, ASEAN has been keeping the regionalism process flexible and non-legally binding. The nature of ASEAN integration is regional cooperation and interaction based on discreteness, informality, consensus-building and nonconfrontational bargaining styles (Beeson, 2009). The emphasis on trust and consensus is always reflected in ASEAN decisions. This kind of regionalism has been proven in improving cooperation and building confidence among AMS that has a degree of common feature yet diverse vastly.

The influence of norms and identity of ASEAN Way is also reflected in ASEAN’s environmental governance. In accordance with the ASEAN Way principles, ASEAN addresses regional environmental challenges through prevention and cooperation measures rather than by establishing a liability regime or adopting formal legal instruments to protect the environment (Nurhidayah, et. al, 2015). Cooperation, consensus and capacity building characterize the methodology of ASEAN integration through law as a means for building environmental protection and environmental sustainability (Kheng-Lian, et. al, 2016). This cooperative approach has resulted in an ASEAN preference for soft law over hard law. Environmental actions in ASEAN are based on ‘common goal but differentiated responsibilities’ principle, providing AMS with considerable autonomy to determine

the extent to which they implement regional environmental agendas appropriate to their capacity and capability.

ASEAN Cooperation on Environment began with the 1977 ASEAN Subregion Environment Programme. Environment and transboundary haze pollution are the main focus of ASEAN Cooperation on Environment to date (ASEAN Secretariat, 2019). In its framework of environmental governance, there is no core ASEAN environmental bureaucracy, as each AMS has role as implementing actors of environmental governance. The institutional framework of the ASEAN Cooperation on Environment consists of ASEAN Ministerial Meeting on the Environment (AMME), ASEAN Senior Officials on the Environment (ASOEN), and seven subsidiaries Working Groups.

ASEAN Cooperation on Environment is currently guided by the ASEAN Socio-Cultural Community (ASCC) Blueprint 2025 which envisions ‘an ASEAN Community that engages and benefits the peoples and is inclusive, sustainable, resilient, and dynamic’ (ASEAN Secretariat, 2019). The term ‘*sustainable*’ was a recurring theme throughout the 2025 Blueprint, from environmental protection, social development, consumption and production, to natural disasters respond (Pramudianto, 2018). ASEAN has four key result areas of Sustainable Characteristic in ASCC Blueprint 2025: Conservation and Sustainability Management of Biodiversity and Natural Resources; Environmentally Sustainable Cities; Sustainable Consumption and Production; and Sustainable Climate. Seven Strategic Priorities and Programmes of Work have been formulated by the working groups under ASOEN. The working group action plans are being consolidated into a comprehensive strategic plan to guide the ASEAN Cooperation on Environment until 2025.



Figure 1. Environment Institutional Framework of ASEAN

Source: ASEAN Secretariat, 2019

The other else, there are five key programmes of ASEAN Cooperation on Environment: ASEAN Peatland Management Strategy including the five-year International Fund for Agricultural Development-Global Environment Facility (IFAD-GEF) project on rehabilitation of peat land forests in Southeast Asia, ASEAN Environmental Education Action Plan, development of ASEAN Guidelines on Eco-schools, ASEAN Heritage Parks Programme, and ASEAN Environmentally Sustainable City Award Programme. In addition, ASEAN State of Environment Report published periodically and serves

as the overall monitoring mechanism of sustainability in the region. In each AMS, national focal points are responsible for carrying out ASEAN initiatives. A summit of the ASEAN heads of state and governments, ASEAN's highest decision-making body, is held regularly.

4. RESULTS

4.1. Statements, Declarations, Action Plans and Agreements on Environmental Issues

ASEAN Cooperation on Environment is stated by the AMS through statements, declarations, action plans and agreements. Since the beginning of ASEAN environmental cooperation in 1977, ASEAN has declared a total 35 of Statements and Declaration, 6 Action Plans, and 3 Agreements with regard to environmental issues. Statements and declarations on ASEAN Cooperation on Environment manifested AMS commitment to address environmental challenges in ASEAN and AMS commitment on international environmental agendas, by intensifying cooperation in the region and sub-region, cooperation with dialogue partners and intra-ASEAN countries, and cooperation with international donors and organizations. Not only between government or government agencies, cooperation with private sectors, professional associations, education and academic institutions, and non-governmental organisation are also encouraged. Issues of biodiversity conservation (marine and coastal, heritage parks), transboundary pollution, water resource and waste management, peatland management, sustainable cities, climate change, natural disaster, public awareness and environment education, sustainable consumption and production (SCP), and the latest one, marine debris, are included in ASEAN Statements and Declarations on environmental issues. Some Statements and Declarations have policy guidelines and priority areas to be implemented by AMS, with implementation upon each member countries capacity and capability.

ASEAN Action Plans on environmental issues are the guidelines for AMS to address specific environmental challenges in the region through integrated regional cooperation. The Action Plans consist of concepts, target areas, strategies, and programme of actions, as well as the implementing and coordinating body of the Action Plans. ASEAN Action Plans on environmental issues include water resources management, environmental education, transboundary haze pollution control, climate change response, marine debris resolution, and strategy on environmental cooperation with China. In the other hand, ASEAN has only three Agreements on environmental issues: Agreement on the Conservation of Nature and Natural Resources, Agreement in Transboundary Haze Pollution, and Agreement on the Establishment of the ASEAN Centre for Biodiversity. Agreements on environmental issues are the central instruments of ASEAN environmental governance. Nevertheless, among the three Agreements, only ASEAN Agreement in Transboundary Haze Pollution has legally binding feature – indicating transboundary haze pollution as the most important environmental issue in ASEAN.

Through the Statements, Declarations, Action Plans, and Agreements, environmental protection and practices of sustainable development have been generally accepted by AMS. ASEAN, with ASEAN Way of environmental governance that emphasize personal diplomacy, discussion, consultation, and consensus has explicitly declared its intention to harmonise its environmental quality standard. Nevertheless, harmonisation of existing environmental regulations in ASEAN will be difficult to achieve as AMS have different political and legal systems, as well as different social and environmental objectives (Nurhidayah, et. al, 2014). Comprehensive instruments such as Action Plans and Agreements, even the legally binding one, have well-established institutional arrangements as well as detailed means of implementation, but lacking in monitoring and evaluation system planning. The principle of common goal but differentiated responsibility allows AMS to address environmental challenges appropriate to their own pace, yet may result in slow progression in the face of environmental demand. This is exacerbated by the non-existence of sanctions mechanism or dispute settlement system. Moreover, when a member state prefers not to give priority to solving an environmental problem, it may avoid ratifying or adhering to regional agreements that other member states have ratified.

4.2. ASEAN Environmental Performance

ASEAN overall progress on environmental performance can be measured by Environmental Performance Index (EPI), biennial reports produced by researchers at Yale University and Columbia University, in collaboration with the World Economic Forum. Difference in AMS' EPI score of 2018 and the baseline score in 2008 indicate changes in ASEAN environmental performance over time. Among AMS, Singapore has the highest EPI score, followed by Brunei Darussalam. The ranks show inequality across AMS environmental performance, as Cambodia and Lao PDR are among 20 percent countries with the lowest EPI ranks. Compared to ten years ago, most of AMS show improvement on environmental performance. Most AMS have worse environmental performance compared to other developing countries, notably Brazil and China, but better than India. Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Thailand and Viet Nam are among the countries with improved environmental performance. In contrast, Brunei Darussalam, Cambodia and Singapore have declined in environmental performance.

Table 2. ASEAN's Environmental Performance

Country	EPI Rank 2018	EPI Score 2018	EPI Score 2008
Switzerland (1 st Rank in 2018)	1	87,42	80,15
Singapore	49	64,23	73,64
Brunei Darussalam	53	63,57	64,83
Malaysia	75	59,22	57,02
Philippines	82	57,65	57,07
Thailand	121	49,88	47,71
Viet Nam	132	46,96	40,53
Indonesia	133	46,92	45,49
Myanmar	138	45,32	44,85
Cambodia	150	43,23	48,32
Lao PDR	153	42,94	37,22
Burundi (Last/180 th Rank 2018)	180	27,43	40,59
Brazil	69	60,7	55,79
China	120	50,74	45,13
India	177	30,57	30,59

Source: Environmental Performance Index Report 2018

4.2.1. Nature Conservation and Biodiversity

During 1996-2016, ASEAN has Lost 13 percent of its forest Area. In the same period, half of AMS, such as Brunei Darussalam, Cambodia, Indonesia, Malaysia, and Myanmar were declining in forest area. Myanmar and Cambodia had the largest decline in forest area, reaching 27 percent, while Indonesia lost almost 24 percent on its forest area. On the other side, Lao PDR, the Philippines, Thailand and Viet Nam had increase in their forest area, with the highest increase of 59 percent on Viet Nam's forest area. Singapore, having the smallest forests area among AMS, had no changes in its forest area in the same period. China and India are among developing countries that had increase in forest area on the same period (10 percent and 33 percent respectively), and Brazil are among developing countries that decreased its forest area (11 percent), yet had the largest area of forests – 4.926 km square.

Data on ASEAN biodiversity is limited. Therefore, comparative analysis of ASEAN on biodiversity preservation progress is difficult to execute. In 2018, average of 410 animal and plant species in each AMS were jeopardized. Most species threatened was higher plants (with average of 217 species threatened in each AMS), followed by fishes (with average of 73 species threatened in each AMS), and birds and mammals (both with average of 60 species threatened in each AMS). Among AMS, Indonesia and Malaysia had the biggest number of species threatened in 2018, exceeding 900 species in total, for each country.

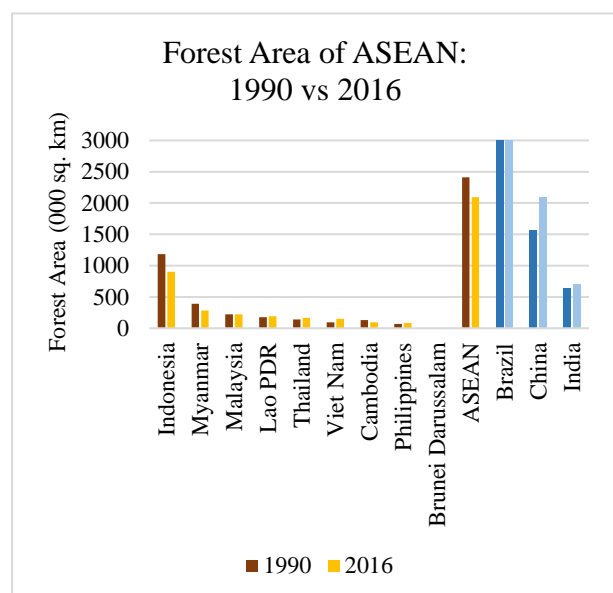


Figure 2. Forest Area in AMS, 1990 and 2016

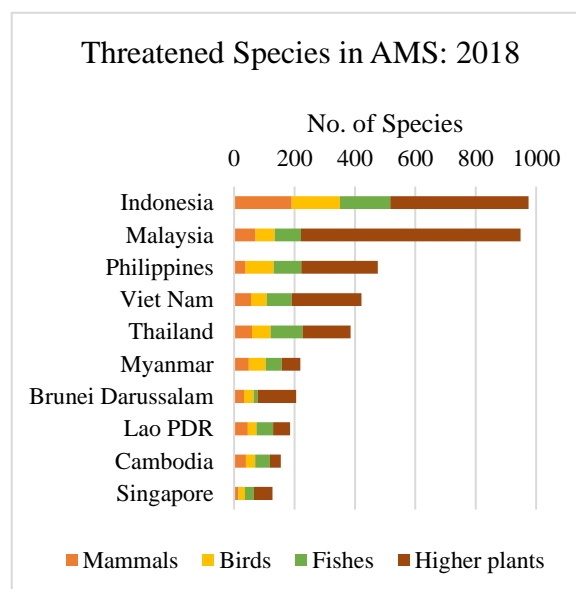


Figure 3. Threatened Species in AMS, 2018

Source: World Development Indicators, 2019

4.2.2. Coastal and Marine Environment

In 2018, marine protected areas in AMS were relatively small in comparison to AMS' total territorial waters – recorded for only 1,2 percent in average of AMS' total territorial waters. Indonesia have the largest marine protected areas with 3 percent of protected areas, followed by Myanmar with 2,3 percent of protected areas. On the other side, Singapore has the smallest marine protected areas with 0,01 percent of protected areas. In the period of 2016-2018, no significant changes made by AMS in their marine protected areas, except for Myanmar. Myanmar increased its marine protected areas from 0,05 percent to 2,3 percent of its total terrestrial water during the period. Compared to other developing countries such as Brazil and China, AMS has lower marine protected area as well as lower increase in expanding the protected areas. In addition, during 2010 – 2014, ASEAN had 12 percent increase in marine fishery production, indicating higher demand of marine products throughout the region.

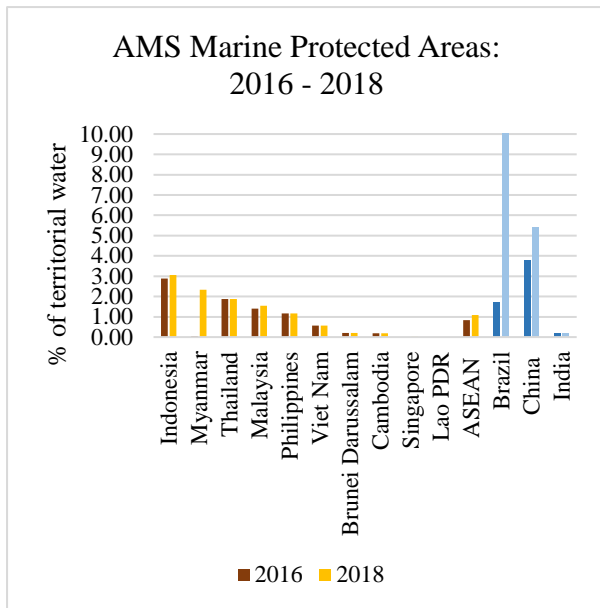


Figure 4. Marine Protected Areas of AMS, 2016 and 2018

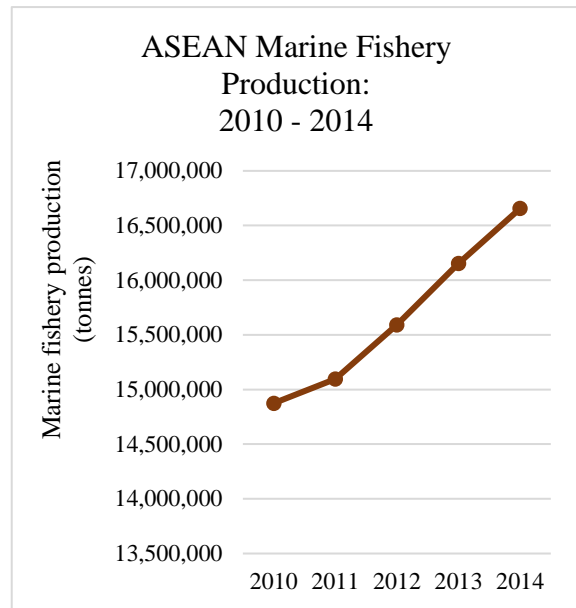


Figure 5. Total Marine Fishery Production of ASEAN, 2010-2014

Source: World Development Indicators, 2019; 5th ASEAN State of The Environment Report, 2017.

4.2.3. Water Resources Management

Renewable internal freshwater resources refer to internal renewable resources (such as internal river flows and groundwater from rainfall) in the country. It is related to a certain degree to geographical size and condition of the country. In 2014, Indonesia had the most renewable internal freshwater resources among AMS with 2.109 billion cubic metre flows of freshwater resources, followed by Myanmar with 1.003 billion cubic metre flows of freshwater resources. On the other side, Singapore had the least renewable internal freshwater resources, with 0.6 billion cubic metre flows of freshwater resources. ASEAN's total renewable internal freshwater resources in 2014 was 4.985 billion cubic metre flows and accounted for 12 percent of the world's total renewable internal freshwater resources. This amount is the same as the 1997 recorded data of ASEAN total renewable internal freshwater resources.

Water stress level refers to freshwater withdrawal as a proportion of available freshwater resources. It shows the degree of water resources exploitation in meeting the country's water demand, and measures a country's pressure on its water resources. Therefore, higher water stress level of a country indicates higher challenge on the sustainability of its water use. In 2014, Singapore had the highest level of water stress among AMS. It is followed by the Philippines, Thailand and Viet Nam. On the other side, Cambodia, Lao PDR and Brunei Darussalam had the lowest level of water stress among AMS. ASEAN's average water stress level in 2014 is 11. Compared to Brazil, it has much higher water stress level (only Cambodia has lower water stress level than Brazil). Compared to China and India, ASEAN has much lower water stress level in the same period.

Table 3. Total Renewable Internal Freshwater Resources in AMS, 2014

Country	Flows (bil. m ³)
Brunei Darussalam	8,5
Cambodia	120,6
Indonesia	2019
Lao PDR	190,4
Malaysia	580,0
Myanmar	1003,0
Philippines	479,0
Singapore	0,6
Thailand	224,5
Viet Nam	359,4
ASEAN	4985
% ASEAN of world's water resources	12%

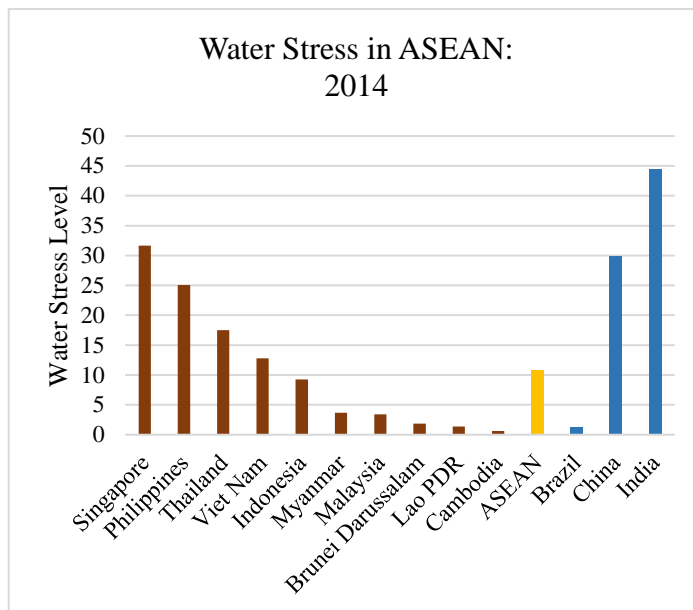


Figure 6. Water Stress Level of AMS, 2014

Source: World Development Indicators, 2019

4.2.4. Environmentally Sustainable Cities

ASEAN Initiative on Environmentally Sustainable Cities (AIESC) was launched by the ASEAN Environment Ministers in 2005, and serves to assist ASEAN cities to pursue environmental sustainability. To stimulate, benchmark, and recognize exemplary efforts on environmental sustainability, ASEAN initiated the ASEAN Environmentally Sustainable City (ESC) Award programme in 2008 that held every three years. In 2009, ASEAN implemented Clean Air for Smaller Cities project. Then, in the period of 2011 – 2017, ASEAN ESC Model Cities Programme was implemented, and currently continued by the name of ASEAN SDGs-Frontrunner Cities. The latest project of ASEAN ESC was establishment of ASEAN Smart Cities Network, a collaborative platform where cities from the ten AMS work towards the common goal of smart and sustainable urban development.

Sustainable Cities Index 2018 by Arcadis is used for the assessment on ASEAN performance in ESC. The index considers UN's criteria for sustainability and establishes a ranking of 100 best cities in the world based on three pillars of sustainability (People, Planet, Profit). The overall results include 4 capital cities in ASEAN, with Singapore ranked highest at the 4th place, followed by Kuala Lumpur, Jakarta and Manila. Sustainable Cities Index on 'People' pillar taking into account immediate needs of citizens (water supplies, sanitation and air pollution); long-term impacts (energy consumption, recycling rates, greenhouse gas emissions); investment in low carbon infrastructure (renewable energy, bicycle infrastructure and electric vehicle incentives); and city resilience (natural catastrophe exposure and risk monitoring). The results of 'People' sub-index include 6 capital cities in ASEAN, with Singapore ranked highest at the 31st place, followed by Kuala Lumpur, Bangkok, Hanoi, Manila and Jakarta. Sustainable Cities Index on 'Planet' pillar taking into account energy use and generation emission of greenhouse gases; green spaces; air quality; provision of bicycle lanes; measures to encourage the use of electric cars; control and monitoring of environmental disasters; and waste management. The results of 'People' sub-index include 6 capital cities in ASEAN, with Singapore ranked highest at the 41st place, followed by Kuala Lumpur, Manila, Bangkok, Jakarta, and Hanoi. Data on ASEAN ESC progress and performance is limited, as all ASEAN cities included in the index are the capital cities of AMS.

Table 4. Overall Sustainable Cities Index Rank 2018

Rank	City	Country
4	Singapore	Singapore
67	Kuala Lumpur	Malaysia
94	Jakarta	Indonesia
95	Manila	Philippines

Table 5. Sustainable Cities Index Rank 2018 based on 'People' Pillar

Rank	City	Country
31	Singapore	Singapore
59	Kuala Lumpur	Malaysia
83	Bangkok	Thailand
92	Hanoi	Vietnam
93	Manila	Philippines
97	Jakarta	Indonesia

Table 6. Sustainable Cities Index Rank 2018 based on 'Planet' Pillar

Rank	City	Country
41	Singapore	Singapore
83	Kuala Lumpur	Malaysia
91	Manila	Philippines
94	Bangkok	Thailand
96	Jakarta	Indonesia
100	Hanoi	Vietnam

Source: Sustainable Cities Index 2018

4.2.5. Climate Change

In 2014, ASEAN recorded to produce average of 0,6 kilogram of CO₂ per USD of GDP. This amount is higher than world's average in the same period, which was 0,5 kilogram of CO₂ per USD of GDP. Yet, compared to other developing countries such as China and India had much higher emission per GDP than ASEAN average, exceeded 1 kilogram of CO₂ per USD of GDP. Only Viet Nam among all AMS had the CO₂ emission exceeded 1 kilogram per USD of GDP. In contrast Singapore and Lao recorded the lowest CO₂ emission per USD of GDP in the same period.

Only three out of nine AMS had negative growth of Green House Gas (GHG) emission during 1990-2012 period, namely Brunei Darussalam, Indonesia and Myanmar. Those countries accounted for 19 percent, 33 percent and 40 percent decline in GHG respectively. The other six AMS, in the opposite, had increase in GHG emission. During 1990-2012, the average growth of world's GHG emissions was 40%. All six AMS with positive growth of GHG emissions accounted for higher number of GHG emissions than world's average, though Malaysia had the lowest positive GHG growth, 41 percent, close to the world's average. In the other side, Brazil, China and India also recorded increase in GHG emission in the same period, but relatively low, especially compared to Cambodia, Lao and Viet Nam.

On climate projects, AMS has significant increase during the period of 2001 – 2013. The highest increase can be seen from Indonesia, Thailand and Viet Nam. Increase of climate project across ASEAN may imply improvement on environmental governance efforts in the region. Nevertheless, the availability of climate projects data in AMS is limited, as some countries have missing data. Data of Brunei Darussalam's climate project is not available.

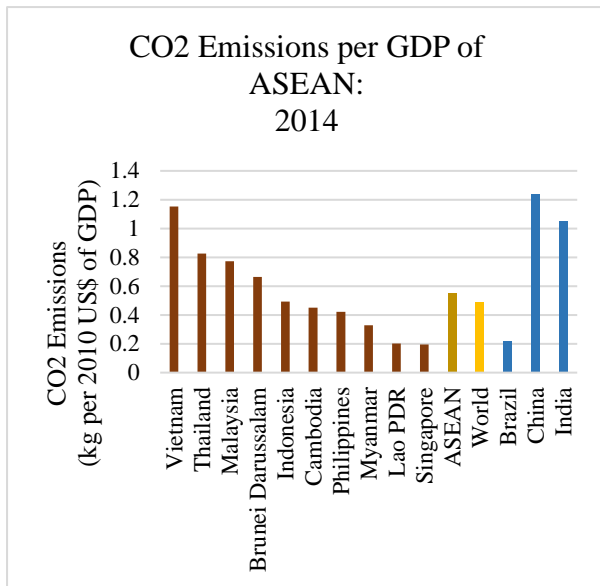


Figure 7. CO₂ Emission per GDP of AMS, 2014

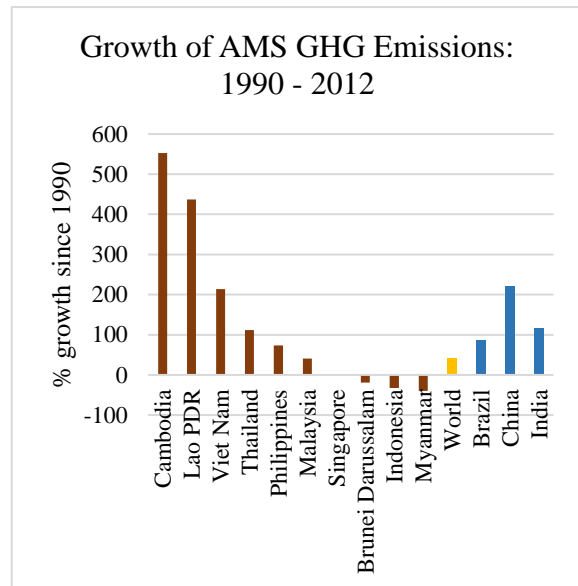


Figure 8. GHG Emission Growth of AMS, 1990 - 2012

Source: World Development Indicators, 2019

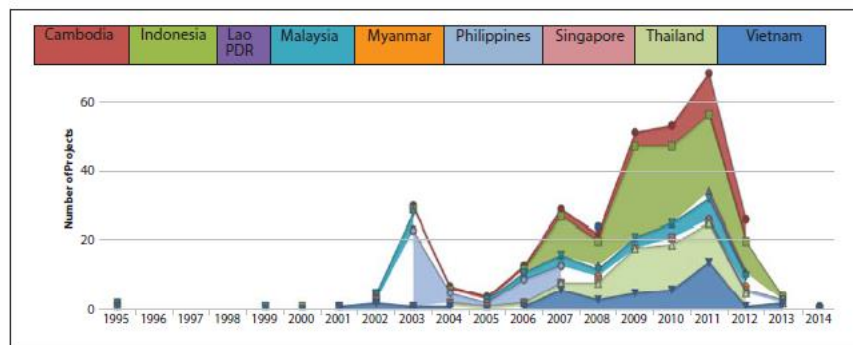


Figure 9. Growth Trends of AMS' Climate Projects

Source: ASEAN Climate Change Action Database, from Handbook for ASEAN Government Officials on Climate Change and SDGs, 2016.

4.2.6. Chemicals and Waste

In 2018, food waste has the largest proportion of ASEAN waste composition (accounted for 45 percent of ASEAN waste composition in average), followed by plastics (accounted for 12 percent of ASEAN waste composition in average). There is no data provided regarding Myanmar's waste composition in 2018. As to waste management, unaccounted waste management has the largest proportion notably in Cambodia, Myanmar, the Philippines and Viet Nam. Unaccounted waste management indicates that these four countries are still lacking in definite process of waste management. Brunei Darussalam, Indonesia and Malaysia are among AMS countries with landfills as the main waste management process (with Brunei Darussalam rely on sanitary landfills as its main waste management process). Lao PDR and Thailand are among AMS countries with open dump as the main waste management process. Waste management process in the form of open dumps, and even landfills, still have adverse environmental effects. On the other side, Singapore is the only AMS country that has recycling as its main waste management process.

On the aspect of waste management efforts, according to the World Bank What A Waste 2018 Database, all AMS already have national agencies to enforce solid waste laws and regulations. In addition, all AMS have provided national law governing solid waste management in their countries. Information about public-private partnership rules and regulation about waste management is also provided by all AMS. On the contrary, even though institutions, rules and regulations have established, there has been no information system provided regarding solid waste management. Among all AMS, only Singapore and the Philippines has provided information system on solid waste management. Information system has an important role as an instrument to improve effectiveness and efficiency of countries' waste management, by reducing asymmetric information through information provision for all interrelated stakeholders.

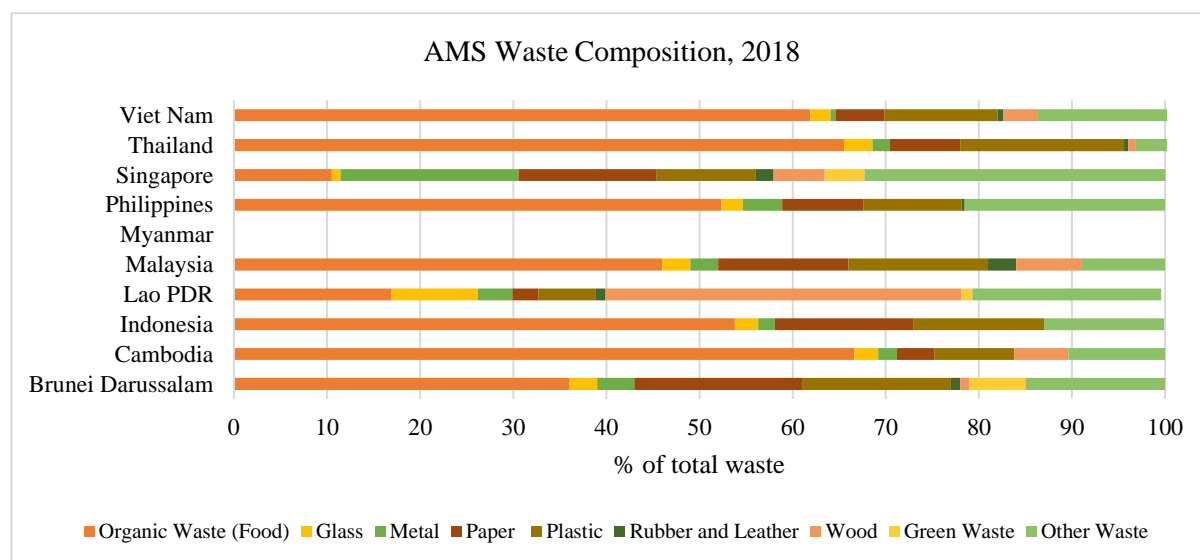


Figure 10. Waste Composition of AMS, 2018

Source: World Bank What a Waste Global Database, 2018

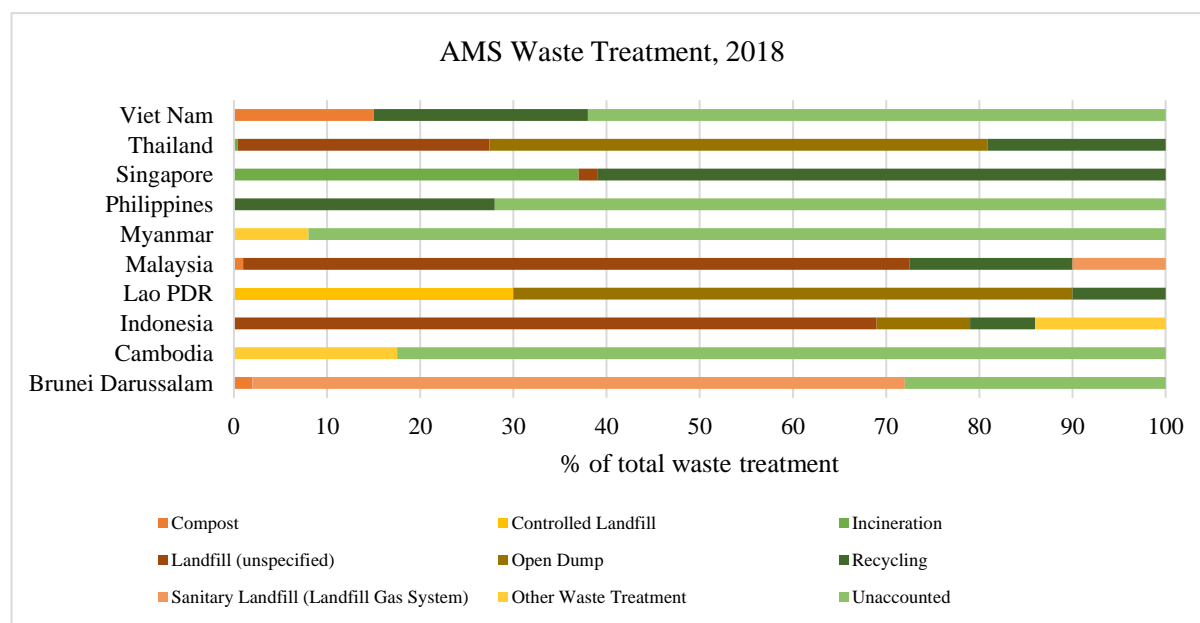


Figure 11. Waste Treatment in AMS, 2018

Source: World Bank What a Waste Global Database, 2018

4.2.7. Environmental Education and Sustainable Consumption and Production (SCP)

Environmental education has been defined as the process of helping people, through formal and informal education, to acquire understanding, skills and values that will enable them to participate as active and informed citizens in the development of an ecologically sustainable and socially-just society (ASEAN, 2019). One of its goal is to improve environmental awareness and sustainable practices of ASEAN citizen. The ASEAN Environmental Education Action Plan (AEEAP) was developed for the period of 2000-2005, 2008-2012, and 2014-2018, serving as a roadmap of actions related to environmental education and Education for Sustainable Development (ESD) at national and regional level. ASEAN's effort in regional communication, environmental education and public awareness can also be seen from projects such as ASEAN Eco-Schools Award Programme, ASEAN Green Higher Education Programme, ASEAN+3 Youth Environmental Forum (AYEF), ASEAN Youth Eco-Champions Awards (AYECA), ASEAN Biodiversity heroes, and ASEAN Environmental Year. In addition, ASEAN has established a platform of environmental education inventory database to improve the accessibility of environment education materials, even though the contents are still limited.

Brunei Darussalam and Thailand have developed communication, education and public awareness materials on biodiversity. In Thailand, over 100 projects were carried out between 2008 and 2012 to educate the public on biological diversity, such as exhibitions on the International Day of Biodiversity and Wetlands Day, youth camps, and trainings. The NParks agency in Singapore implemented the Community in Nature initiative, and held events such as Festival of Biodiversity. Indonesia, Cambodia, Viet Nam and Singapore have used brochures, posters and educational materials from FAO to raise awareness on food loss and waste issues. Capacity building activities on reducing post-harvest losses in horticultural chains have been provided to Cambodia, Lao PDR, Thailand and Viet Nam. Indonesia, the Philippines, and Viet Nam are among AMS that had government programs to raise awareness and mainstream biodiversity into National Development Plans.

Sustainable consumption and production (SCP), is defined as the use of services and related products, which respond to basic needs and bring a better quality of life while minimising the use of natural resources and toxic materials as well as the emission of wastes and pollutants over the life cycle of the service or product so as not to jeopardise the needs of further generations (ERIA, 2018). It focused on consuming the goods and reducing the creation of wastes in a sustainable way. ASEAN's effort in promoting SCP across the region can be seen through ASEAN Joint Statement on the Implementation of SCP, and initiatives such as Forum on Sustainable Consumption and Production (AFSCP) and Regional Forum on the Promotion of Sustainable Consumption. ON ASEAN' intra-regional cooperation regarding SCP, ASEAN cooperate with Japan, South Korea, and China in ASEAN+3 Programme on SCP, and also a member of Asia-Pacific Roundtable for Sustainable Consumption and Production (APRSCP). Nevertheless, Among AMS, only Malaysia and Viet Nam that included SCP as their National Programme (ASEAN, 2017). Nevertheless, data shows that AMS are increasing its total domestic material consumption as well as primary energy supply as the cost of rapid development in the region.

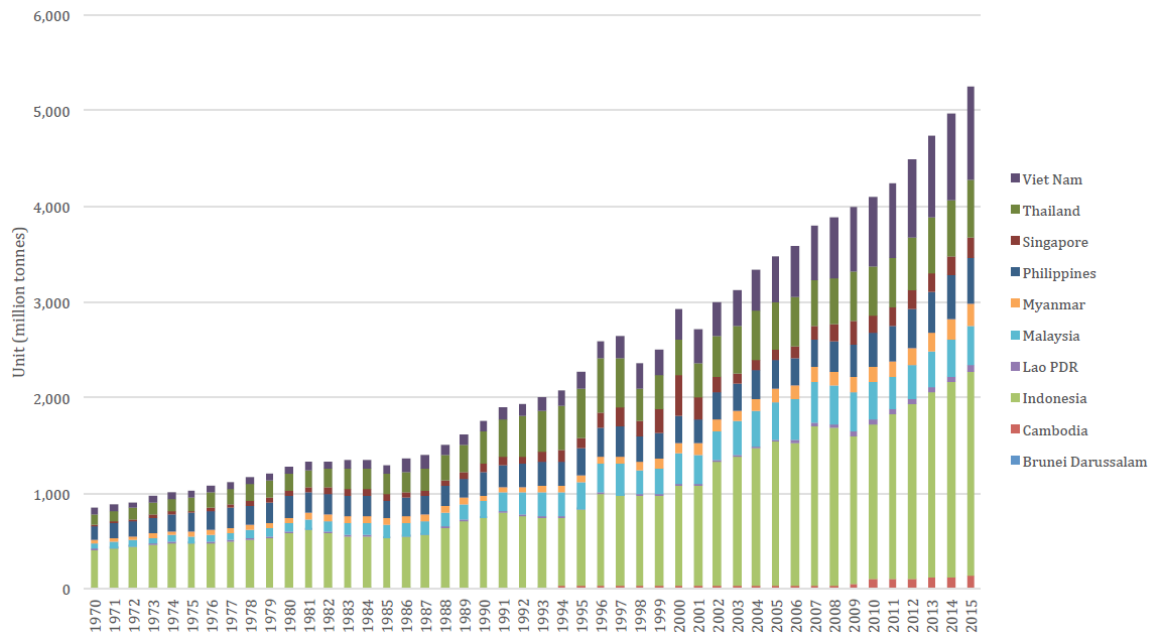


Figure 12. Domestic Material Consumption in AMS

Source: Shandl et. Al., 2016, in 5th ASEAN State of The Environment Report, 2017.

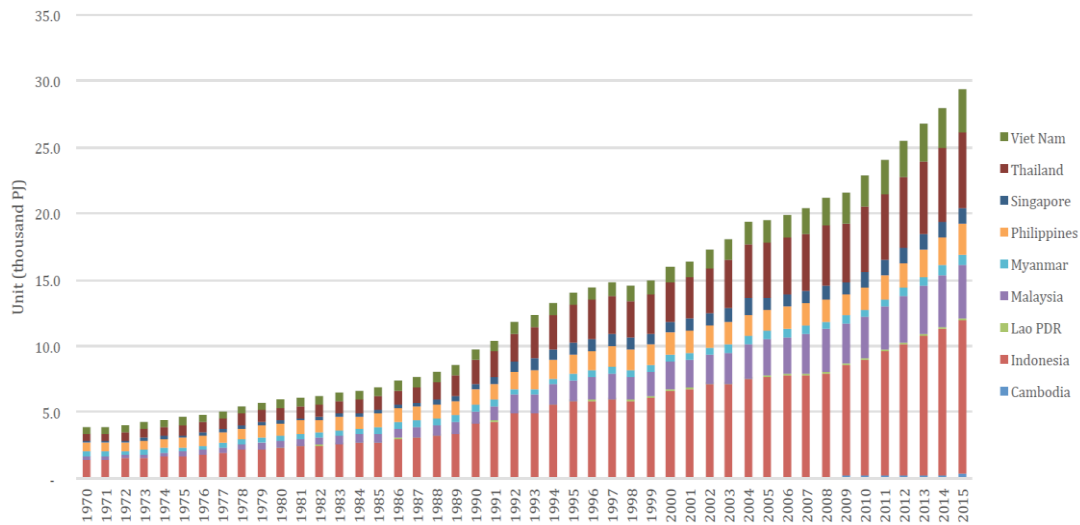


Figure 13. Domestic Material Consumption in AMS

Source: Shandl et. Al., 2016, in 5th ASEAN State of The Environment Report, 2017.

4.3. Multilevel Environmental Governance: Role of Non-State Actors in ASEAN Environmental Governance

Environmental governance is one of important challenges for ASEAN regionalism. There has been slow and uneven development of environmental governance arrangements in AMS. ASEAN principle which allow AMS autonomy in regional practices is often used by the member states to resist regional initiatives that contradict to their important domestic interests – Indonesia, for example, took twelve years to finally ratify ASEAN’s Agreement on Transboundary Haze Pollution despite its crucial role in transboundary haze. The influence of ASEAN Way in ASEAN’s environmental governance results in environmental cooperation that has been characterized by soft institutionalism, preference for non-binding agreements, and reliance on national institutions. ASEAN environmental regionalism, rather than being constructed through private, bottom-up, and spontaneous processes, has been very much driven by ASEAN member states (Elliott, 2011).

ASEAN still heavily rely environmental issues to its national governments. Major environmental-related instrument in AMS are mandatory regulations and legislations set by the state. In general, decision-making in ASEAN takes place at two levels, the interstate level and the national level. Key environmental issues only have a chance to be dealt by ASEAN when they are put on the agenda of interstate meetings, the highest level of decision-making. Actors at the national level include business associations, interest groups, and community organisations that have been invited by the government organisations, shaped the second level of ASEAN's decision-making process. Though ASEAN encourages the participation of non-state stakeholders, there has been slow progress in the overall integration of non-state actors in ASEAN's policy formation process (Nesadurai, 2017). Regional environmental governance structures in ASEAN have been ineffective in offering channels of communication for and among a wide-range of stakeholders (Elliott, 2011). Transboundary environmental issues need not only interstate collaborations, but also enforcement at local level that need strengthened capacity and coordinated actions by different stakeholders.

The concept of 'governance' is not limited to the government or government agencies. In fact, government is not the most significant source of decision-making authority on environmental issues (Chang, Dong, and Liu, 2019). Multilevel governance is also an important aspect of environmental governance, and non-state actors shall play a crucial role in the decision-making process on various governance levels, which further emphasizes the significance of stronger decentralization in the process of policy formulation and implementation. Non-state actors' efforts have become increasingly important in supporting ASEAN programmes, also in facilitating other mechanisms for dialogue, cross-border cooperation and sometimes regulation and standard-setting in the areas where the government has limited authority (Elliott, 2011). Nevertheless, there has been a slow progression of non-state actors' networks on environment and environment-related issues in ASEAN (Elliott, 2011).

Multilevel environmental governance, for example, has been implemented in EU. The idea of spontaneous, bottom-up processes that recognize the importance of a wide-range of stakeholders in the making of ASEAN regional systems and institutions defines a much newer alternative regionalism. Multilevel governance that do not rely on the state may be more effective than the intergovernmental ASEAN framework in addressing Southeast Asia's environmental challenges. ASEAN need to improve its effectiveness in promoting the role of non-state actors in ASEAN environmental governance. This demands regional governance, including regional environmental governance, to be 'people-centred', not just 'people-oriented', in line with the objectives of ASEAN Community. Non-state actors offer a solution in filling the gap of ASEAN Way's restrictions for better environmental governance practice, particularly in ensuring state compliance.

6. CONCLUDING REMARKS

This research aims to assess ASEAN Way of environmental governance in addressing the region's environmental challenges. In accordance with its ASEAN Way principles, ASEAN addresses regional environmental challenges through prevention and cooperation measures, rather than by establishing a liability regime or adopting formal legal instruments to protect the environment. ASEAN regionalism pursues informal, flexible and network-like institutionalisation. National actions, rather than centralised regional bureaucracy, serve as the main force of ASEAN regionalism. ASEAN Way of addressing environmental challenge raises question on ASEAN's progression in the face of rapidly evolving environmental demand.

Analysing the Statements, Declarations, Action Plans and Agreements of ASEAN Cooperation on Environment, it is evident that ASEAN has ambitious plans and programmes in its implementation of environmental governance. Vast areas of environmental issues are covered in ASEAN environment plans and programmes. Yet, from the total of 35 Statements and Declarations, 6 Action Plans and 3 Agreements, only one instrument of ASEAN environmental governance, which is Agreement on Transboundary Haze Pollution, has legally binding feature. It indicates transboundary haze pollution problem as the most important environment issue in ASEAN. Comprehensive instruments of ASEAN

environmental governance (such as Action Plans and Agreements) have well-established institutional arrangements and detailed means of implementation, but lacking in monitoring and evaluation system planning. The principle of common goal but differentiated responsibility allows AMS to address environmental challenges have been dependent on the voluntary compliance of member state, that may result in slow progression of AMS' environmental actions. This is amplified by non-existence of sanctions mechanism or dispute settlement system, and AMS' tendency to avoid ratification of unfavourable agreements.

Quantitative data analysis on ASEAN environmental performance shows that AMS have different degree of environmental progress and performance. Singapore and Brunei Darussalam have high index of environmental performance, while Cambodia and Lao PDR are among the countries with the lowest index of environmental performance. On nature conservation and biodiversity, most of AMS recorded declines in forest area during the period of 1996-2016, except Lao PDR, the Philippines, Thailand and Viet Nam that recorded increase of their forest areas. Indonesia and Malaysia accounted for more than 900 jeopardized species in 2018. ASEAN has relatively small marine protected areas in comparison to ASEAN's territorial water, with the biggest marine protected area is only 3 percent of the country's total territorial water in Indonesia in 2018. With abundance internal freshwater resources, ASEAN owned 12 percent of total world's internal freshwater resources in 2014. Yet, the level of water stress in ASEAN is relatively high, particularly in Singapore and the Philippines.

Most of AMS experienced high growth of GHG emissions in the period of 1990-2012, higher than the world's average growth of GHG emissions. As climate change occurs, the risk of AMS population to exposure of natural disaster such as droughts, floods and extreme temperature increases. Thailand, Viet Nam and Cambodia are among AMS that have highest population affected by natural disasters. On ASEAN waste management, AMS are either have not implement definite process of waste management or rely waste management processes on open dump and landfill that still have high risks for the environment. All AMS have established national agency to enforce solid waste management, provided national law governing solid waste management, and provided information about public-private partnership on waste management; but only Singapore and the Philippines provided information system on solid waste management. ASEAN has extensive plans and programmes on Environmentally Sustainable Cities (ESC), Environmental Education, and Sustainable Consumption and Production (SCP). Yet, data on the progress and achievement of AMS in these matters remain limited.

Significant problem in ASEAN environmental governance assessment is the availability of the data with regard to ASEAN progress and performance of various environmental aspect. ASEAN has not provided pooled data on its environmental aspects in the region despite having platforms of several environmental-related centres. Environmental-related data is often not available in country level. ASEAN has published five editions of ASEAN State of the Environment Report as a measure of monitoring ASEAN environmental government, yet it still lacks in comprehensiveness. Analysis on ASEAN Cooperation on Environment documents and certain environmental indicator data represent exhaustive plans and programmes of ASEAN in addressing environmental challenge, even though effectiveness of the implementation remains uncertain. Under ASEAN Way principles, voluntary compliance in environmental action has resulted in unresolved environmental issues (for example, recurring transboundary haze pollution problem in several AMS countries).

As ASEAN environmental governance still heavily relies on national government initiative, there arise limitation on its implementation by the principle of ASEAN Way. Environmental governance should not be limited to the government. Transboundary environmental issues need not only interstate collaborations, but also enforcement at local level that need strengthened capacity and coordinated actions by different stakeholders. Acknowledging this concept of multilevel governance, non-state actors shall play a crucial role in filling the gap of AMS national government boundary. Multilevel environmental governance, which emphasizes the role of non-state actors in governance practices may be a solution for better regime of ASEAN environmental governance. Thus, even with ASEAN Way principles, environmental governance in ASEAN could be implemented effectively to catch up with rising environmental demands in the region.

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