U.S.-ASEAN WOMEN'S LEADERSHIP ACADEMY FOR YSEALI

Declaration for Environmental Progress

Written by women environmental leaders of the
2023 U.S. Mission to ASEAN Women's Leadership Academy for YSEALI

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Investing in women leading the change

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Foreword

Earlier this year, I had the privilege of attending the YSEALI Women's Leadership Academy in Bali, Indonesia. Over the course of the week, I met and worked with an incredible group of strong, brilliant women – women who I am proud to confidently call, friends.

To all the 2023 U.S.-ASEAN Women's Leadership Academy for YSEALI Participants:

After that week, I have never been more hopeful about our ability to work together. Seeing you lead and shine, tackling challenges not only in your home countries, but in a multilateral way that will change the course of history and deliver a brighter future for everyone across the globe.

When you joined the YSEALI Women's Leadership Academy, you were leaders already but over the course of the week, I watched you all grow even more. You used your voice and your unique stories to find your purpose and work on solutions to help build a sustainable future. But none of us can solve problems alone. Even under the best of circumstances, making change is hard. We need each other.

When we left Bali, we knew the work wasn't over – it was just the start of the journey. You learned to have hard conversations to improve yourself and your peers, to challenge each other, and to build each other up. And most importantly, you left with a network of peers to reach out to and a regional family to support you.

To the co-authors and signatories, congratulations on finishing your Climate Declaration. I continue to be so inspired by all of you, and so it's no surprise that you've all continued to work on the key issues facing your region. I'm so proud of you all for remaining invested in your work on climate resilience and ensuring a better future for Southeast Asia.

I cannot wait to see what's next.

Abby Finkenauer
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Executive Summary

Southeast Asia is globally considered one of the most vulnerable regions to climate change. The geographical characteristics and demography make Southeast Asia prone to dangerous impacts of climate change, including rising sea levels, heat waves, floods and droughts, extreme weather events, and many other climate-induced hazards and disasters. These impacts have been increasing and will affect people's livelihoods as they trigger food insecurity, water scarcity, professional and housing-related displacement, as well as severe economic damage. According to data from the Internal Displacement Monitoring Center, 54.5 million people were displaced by weather-related disasters across Southeast Asia between 2008 – 2018 (Dennis, 2020). Floods accounted for more than 60 percent of those events, which have affected more than 70 million people during the same period. The region is also vulnerable to droughts, which have intermittently affected large parts of the region. During the 2015-2016 and 2018-2020 periods, moderate drought conditions affected more than 70 percent of the land areas (Renaud *et al.*, 2021).

To put these challenges into context, the Global Climate Risk Index, which calculates the impacts of extreme weather events, ranked Myanmar 2nd, the Philippines 4th, and Thailand 9th as the top three ASEAN countries at risk (Eckstein *et al.*, 2021). In the future, countries across the region will face rising sea levels, heat waves, floods and droughts, and increasingly intense and unpredictable weather events. Climate analysts predict that a 60-centimeter rise in sea levels, expected by the end of the century, will increasingly threaten the 77 percent of Southeast Asians who live along the coast or in low-lying river deltas. By 2050, daily high tides will flood the areas where more than 48 million people in Southeast Asia now live, while average annual flood levels will inundate the homes of more than 79 million (Dennis, 2020).

The economic impacts of these climate events, if left unchecked, will be devastating. The impact of predicted climate change could cut more than 35 percent of the region's GDP by 2050, as the results would severely impact key sectors such as agriculture, fisheries and aquaculture, along with human health and labor productivity (Renaud *et al.*, 2021). All these impacts would be concerning for food security and for rural livelihoods, especially in Laos PDR, Myanmar and Vietnam, where agriculture accounts for 61% percent, 49% percent, and 31% percent employment, respectively (ASEAN, 2022). Although the region has made advancements in poverty reduction during the past 30 years, evidence suggests that the benefits have not been evenly distributed, and many people remain close to becoming poor and are highly vulnerable to climate shocks.

While the catastrophic effects of climate change are felt by everyone across the world, some people experience this growing ecological, humanitarian, and economic crisis more acutely and more

frequently than others. Research shows that women are more vulnerable to the effects of climate change than men as they constitute the majority of people living in poverty and are more dependent on natural resources for their livelihoods and survival (UN Women Watch: Women, Gender Equality and Climate Change).

In Southeast Asia, this holds true for more than one reason. The threat to lives, livelihoods, and fragile ecosystems that the climate crisis poses is more urgent, eminent and brutal here than in almost any other region, and populations are severely affected by the dangers and immediacy of climate change in myriad ways given the diversity of geographies across island nations like the Philippines and landlocked states like Laos. The Organization for Economic Co-operation and Development (2021) reported that 26.7 percent of women make up the agricultural workforce within the region. Not only do these female farmers have to carry the climate burden by virtue of working in the field and experiencing debilitating conditions firsthand they are also less likely to be granted beneficial access to natural resources such as land, water, forests and adaptation strategies which encompass information-sharing, financial mechanisms and technologies (Resurrección *et al.*, 2019).

Despite being disproportionately affected by the climate crisis, women remain widely underrepresented, or even entirely absent, in key conversations and decisions about the future of the planet. The International Union for Conservation of Nature (as cited in UN Women, 2022) saw that only 6 percent of women held ministerial positions for environmental matters within ASEAN in 2020, which may lead to solutions that do not fully incorporate women's experiences or address their needs. Evidence of this discrepancy is further supported by a study conducted by the United Nations Environment Programme and UN Women that showed only 34 percent of countries in the Asia-Pacific region currently include *gender mainstreaming* in their climate change law and policies (Reggers, 2021). In addition, while progress for women's leadership is being made in some industries, the energy sector has one of the lowest percentages of female leaders, with just 20 percent.

There is much more to lose than gain by continuing to exclude female representation in the climate discussion(s). Research conducted by the Harvard Business Review found that women have been demonstrated to be more effective leaders both in normal times and during crises such as the COVID-19 pandemic (in the U.S. and across 91 countries), and the data suggests this advantage extends to the climate crisis as well.

Through this declaration, we, the participants of the 2023 U.S.-ASEAN Women's Leadership Academy for YSEALI, highlight key issues facing the region and provide recommendations for all sectors and actors (governments, nonprofits, academics, civil society and individuals) to take action towards climate resilience, to secure a better future for the youth in South East Asia.

Recommendations

Education

A crucial step to understanding the consequences of climate change and catalyzing changes in personal behavior and international policy that can prevent the development of this global emergency.

1. Foster public awareness and education in order to promote energy equity, conservation, and environmental sustainability by:
    a. Integrating the aspect of disaster preparedness and rehabilitation and environmental resilience in schools and in the practices of non-government and government agencies;
    b. Incorporating discussions on gender equality into training sessions and materials, including the use of gender-sensitive language and illustrations in these curricula;
    c. Educating the public and youth through mainstream social media platforms and creating safe online and offline platforms through which youth can engage in climate action without fear or misinformation; and
    d. Intensively engaging with education departments to incorporate environmental issues in school curricula by:
        i. Encouraging various government stakeholders at different levels to support the implementation of biodiversity conservation and to foster public awareness and education on climate action, sustainable energy, agriculture, and water management;
        ii. Creating grants for initiatives/projects on these issues; and
        iii. Emphasizing issues of resource utilization and management, water security, and conservation in school curricula.

Policy

Governments must take note of the individuals who are affected by the climate crisis on a daily basis and implement innovative and inclusive policies that not only mitigate the effects of climate change but strive to build a more resilient and sustainable future.

2. Ensure transparency and equity in climate-related policies by:

a. Addressing gender gaps in agriculture, such as "gender-smart indicators," based on the Gender Profile of Climate-smart Agriculture in Ghana and the Gender Empowerment Index;
b. Enforcing gender-responsive policies for "invisible" care work done by women in the development sector;
c. Ensuring transparent justice systems that are able to hold governments and stakeholders accountable for climate-related damages;
d. Facilitating a gender and power analysis in the stakeholder mapping activities of crisis-affected communities to support their strategy to influence climate policy; and
e. Urging policymakers to ensure that all projects undergo an environmental impact assessment.

3. Encourage citizens to lobby governments and environmental law groups to increase inclusivity and effectively implement the recommended policies at the ground level using methods such as:
    a. Intensive engagement with various government stakeholders at different levels to support the implementation of policies supporting biodiversity protection and conservation; and
    b. Creation of effective protected areas, secondary habitat restoration, and protective forest management projects.

4. Increase government commitment and involvement in enabling just energy transition by setting targets for renewable energy use and implementing policies and regulations that incentivize the development and adoption of renewable energy technologies and battery storage through initiatives such as:
    a. Encouraging heavy investments in transition technologies such as hydrogen battery storage, and carbon capture, utilization, and storage (CCUS); and
    b. Using subsidy provisions to accomplish this goal.

5. Revisit, strengthen, and supplement national and international policies governing industries' waste management systems and protocols by:
    a. Ensuring that households, manufacturers and business owners are held accountable for excessive pollution;
    b. Addressing agricultural waste to detect and prevent water contamination from such sources;
    c. Supporting a high ambition global plastics treaty that will mandate a significant reduction in production of non-essential plastics;

d. Developing a policy roadmap to ban low value and hard to recycle single-use plastic waste, and shift to systems that encourage sustainable design of packaging and delivery systems; and
e. Upholding international agreements on waste exportation and importation that burden local waste management systems in Southeast Asia and lead to leakages of pollutants in waterways.

6. Strengthen global policy frameworks to protect endangered species such as CITIES36 (The Convention on International Trade in Endangered Species of Wild Fauna and Flora) by:
    a. Supporting capacity-building to effectively design and implement strong governance frameworks to conserve threatened species and combat wildlife trafficking, illegal wildlife trade and illegal poaching; and
    b. Publishing research and statistics on current endangered species to inform analysis-based policy recommendations and national action plans on biodiversity and population management.

Technology

Technology may pose great threats to the environment, but it also has the ability to increase sustainability; harnessing the power of technological advancements and supporting the development of new innovations is the only way to ensure that our planet can keep up with rapid modernization.

7. Increase the availability and transparency of accurate data by:
    a. Partnering with technology companies to implement open-source data systems and predictive data models for access to weather forecasts for smallholder farmers and fishermen;
    b. Emphasizing more accurate weather forecasts and market mechanisms that lower agricultural risks can help farmers make more profitable decisions and lead to greater investment and better management;
    c. Providing up-to-date information or data on current progress and ensuring the provision of basic and accessible knowledge on climate resilience in local languages;
    d. Upholding the Data Privacy Act (or its equivalent in SEA countries) and ensuring that the profile data of the community is protected and for internal use only; and

e. Pursuing regional cooperation platforms such as a joint adoption of artificial intelligence (AI) solutions and big data technology and shared access to regional data on water resources which entails:
    i. Building a regional data management system among all ASEAN countries to improve forecasting and early warning systems; and
    ii. Developing and communicating clear operating protocols.

8. Uphold the values of equity and inclusion in climate-related technology by:
    a. Ensuring equitable access to technology for women and seeking to achieve an equal balance of unpaid care and domestic work in households;
    b. Disseminating information on sustainable agriculture to rural areas to allow farmers to access good agricultural practices and stay updated on current agricultural technologies;
    c. Promote ground-up infrastructure to empower under-represented communities to access clean and secure water sources and sanitation by working with NGOs and private sector companies to provide them with the necessary tools; and
    d. Provide incentives for private agencies to invest in water and wastewater infrastructure development to help develop expertise and technology capacity in ASEAN countries.

Cooperation

Climate change is an intergenerational global event that does not respect borders and thus calls for a holistic approach and interdependence across the public and private sectors, all levels of government, and the citizens of the world.

9. Enhance regional cooperation by:
    a. Developing a regional energy grid that allows for the sharing of energy resources and promotes energy security through the ASEAN Plan of Action for Energy Cooperation (APAEC) and ASEAN Power Grid (APG);
    b. Settling an ASEAN transition target by 2030;
    c. Establishing an ASEAN Just Energy Transition Coalition to provide:
        i. A participative, open, and accountable space for dialogue with the coalition, composed of representatives of the public sector, private sectors, civil society organizations, non-profit organizations, and youth organizations,

ii. Representation and participation of vulnerable and impacted communities, particularly women, youth, rural and indigenous people,
iii. A Just Transition Framework in ASEAN as a core value in implementing energy transition across Southeast Asia;

d. Utilization of artificial intelligence and shared data platforms as specified in clause 7;
e. Formation of monitoring committee(s) [with women, young people and leaders from ASEAN] to evaluate progress on the recommended initiatives and report on updated data periodically.

Partnerships

In order to implement effective solutions to the climate crisis, policymakers must engage with and amplify the work of organizations and individuals who are on the ground such as grassroots organizations, NGOs, members of academia, and local governments.

10. Partner with and support local women's groups already active (or seeking to be active) in coastal, mountainous, or urban communities and ensure that their indigenous knowledge and lived experiences shape the policies of local governments.

11. Challenge existing power structures and strive for equitable partnerships through the non-tokenistic inclusion and meaningful participation of:
    a. Women, indigenous people, persons with disability, youth and frontline communities in technical dialogue, roundtable, and other discussions;
    b. National and local governments and ministries; and
    c. Scientists and groups of university students that pursue environmental fields, with background or training in community engagement and policy.

Inclusion

Those most vulnerable to the effects of climate change are often those whose voices remain unheard; there is no solution to the climate crisis without the inclusion and leadership of women, indigenous communities, youth, and other underrepresented individuals.

12. Ensure the inclusion of youth, women, and local communities by taking into account diverse voices and needs while developing and implementing solutions to address climate

and biodiversity issues such as the development of platforms and resources that facilitate greater exchange of ideas amongst stakeholders.

13. Promote gender equity in climate action by:
    a. Amplifying calls for locally-led, women-led climate action in national and international advocacy fora, including youth who advocate for climate resilience;
    b. Ensuring the existence of women's advisory boards to support a strong and comprehensive climate-resilience agenda;
    c. Facilitating spaces for women and marginalized groups to voice their opinion in decision-making at the community and international policy level;
    d. Developing more platforms and resources to facilitate greater exchange of ideas and sharing amongst groups and stakeholders;
    e. Promoting and encouraging women-led and women-focused sustainable solutions through women entrepreneur networks, incubation hubs, and seed grants;
    f. Conducting comprehensive community mapping of gender vulnerabilities vis-a-vis climate risks in the region;
    g. Collecting and making use of sex-, age-, and disability-disaggregated data by developing *gender mainstreaming* indicators (e.g. the number of female representatives) in project planning and implementation; and
    h. Increasing representation of women in farming communities and cooperatives to represent the voices of smallholder women farmers and work towards more inclusive agricultural practices.

14. Establish and amplify recognition of indigenous communities, indigenous practices, and indigenous rights to their land and/or sea as solutions to protect biodiversity through a transparent natural resource management policy.

15. Ensuring inclusion of the customary law in the specific areas that heavily rely on natural resources.

Funding and Financing

Long-term solutions to climate change can only be realized if economic reform is implemented and sustainable investments are prioritized.

16. Encourage investment in climate resilience by:

a. Urging governments and financial institutions to create a conducive environment for private sector investment in clean energy, energy storage technologies, and grid infrastructure by providing subsidies, tax incentives, and regulatory frameworks while endorsing a ban on fossil fuel investments; and
b. Increasing funding from governments, international funding entities, and the private sector in regional water infrastructure.

17. Develop economic frameworks that mitigate the effects of climate change and protect ecosystems by:
    a. Allocating more funds to disaster preparedness, disaster risk reduction, and climate change adaptation (aside from disaster response or relief); and
    b. Creating a blue finance program or Payment of Ecosystem Services (PES) to support sustainable conservation in vulnerable areas with high biodiversity that are susceptible to degradation from tourism.

18. Increase the usage of equitable financing methods such as the establishment of a gender-specific (or gender-responsive) climate finance program where the focus area and criteria incorporate gender in order to expand women's access to productive resources.

Leadership and actions by the community

Building a sustainable future requires not only the work of global policymakers but, most importantly, the actions of local communities and individual behavior changes; each global citizen has a responsibility to protect the planet which they inhabit.

19. Individuals and private bodies should promote energy efficiency by reducing energy consumption through conservation practices and adopting energy-efficient practices and technologies;
    a. Governments can establish and enforce Minimum Energy Performance Standards (MEPS) that meet international standards to ensure this.

20. Facilitate awareness, training, and capacity building in communities for proper water recycling, resource management, and biodiversity and wildlife protection (including wildlife consumption/trafficking of the community in the buffer zones of nature reserves).

21. Enhance community leadership and accountability by ensuring community-led vigilance and reporting of malpractices (especially related to water usage, theft, and pollution).

22. Strengthen legal solutions to protect forests, national parks, and nature to conserve and develop the capacity for rangers.

Fair pricing

Sustainable agriculture has long been an inaccessible practice due to unfair prices; implementing reform in this sector will encourage more individuals to support sustainable farming practices.

23. Develop a system to maintain the market price of cash crops set for smallholders to ensure a fair market price for the crops produced by small farmers.

Draft Resolution Document

Sub-Committee	Biodiversity Management
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Problem Statement/ Background of the issue

The nexus of the climate-biodiversity crisis is already affecting the ASEAN region and exacerbating other destructive environmental problems such as habitat loss and degradation, overexploitation and illegal wildlife trade, bio-invasive species, and ineffective transboundary governance, all of which threaten intergenerational human survival. We, the delegates of Young Southeast Asian Leadership Initiative-Women Leadership Academy 2023 (YSEALI-WLA '23) strive to scale up transformative solutions to mitigate and adapt to the worsening impacts of climate change while recognizing the urgency for collective and holistic climate action of the ASEAN Community. Thus, we declare the following resolutions and call for prompt and tangible effort from the governments, the ASEAN Secretariat, and all global leaders representing international climate-biodiversity negotiations:

Introduction

We refer to Biodiversity Management as the use of strategies, policies, and tools to ensure the conservation and sustainable use of biological resources. This includes the implementation of conservation strategies and activities, the management of protected areas, and the development of legal and administrative frameworks to protect and restore ecosystems and species.[1]

We recognize that the ASEAN region contains three of the world's biodiversity hotspots and megadiverse countries: Indonesia, Malaysia, and the Philippines. This region is home to a wide variety of endemic species and habitats, both in terrestrial and aquatic settings. However,

[1] https://www.iucn.org/resources/issues-briefs/biodiversity-management

deforestation, forest degradation, overexploitation of natural resources (eg. overfishing), destructive coastal and marine activities, pollution, and anthropogenic climate change have threatened its biodiversity.

We affirm the evidence on the ASEAN Biodiversity Outlook 2020, which shows the region has lost more than half of its primary forests and more than 20% of threatened species populations have declined since 2000. It also showed that ASEAN is the most threatened region in terms of deforestation, with an annual loss of 8.8 million hectares of forest.[2] We further attest that "biodiversity loss and ecosystem collapse" is the fourth most severe risk to economies and societies for the next decade, a risk amplified in biodiversity-rich Southeast Asia.[3]

On the issues/ threats encompassing the climate-biodiversity nexus
We call to uphold the ASEAN Vision 2025 to strive for a clean and green environment for the peoples of the Southeast Asian nations[4] and take bolder steps to protect and conserve its remaining biodiversity through sustainable land use, climate change adaptation and mitigation, and effective and efficient management and utilization of biodiversity and natural resources.

We assert the various major ecosystems in the ASEAN region that face significant threats/ issues on biodiversity management as;

1. Terrestrial Biodiversity

The ASEAN region faces numerous issues with terrestrial biodiversity such as habitat loss and degradation.[5] A study by Hughes, 2017, cited that Southeast Asia has the highest deforestation rates in the world.[6] It is crucial for us to understand that around 14.5% of regional cover has already been denuded for the last 15 years and there is an average rate of 1% loss annually. Another prevalent issue in the region is that of invasive species, which is the introduction of non-native species to ecosystems that threaten local biodiversity by competing with native species. The Philippines alone has a long history of bio-invasive exotic tree species introduced as reforestation species.[7] The overexploitation and illegal trade of wildlife is still a major challenge in many ASEAN countries, particularly hunting, poaching, and trafficking of high-valued terrestrial species.[8] Inefficient governance and weak policy implementation of both

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[2] https://www.asean.org/storage/2020/09/ASEAN-Biodiversity-Outlook-2020_FINAL-30-September-2020.pdf

[3] https://www.marshmclennan.com/content/dam/mmc-web/insights/publications/2023/global-risks-report-2023/global-risks-report-2023.pdf

[4] https://asean.org/our-communities/asean-socio-cultural-community/environment/

[5] ASEAN Centre for Biodiversity. (n.d.). Terrestrial Biodiversity.

[6] Hughes, Alice C. "Understanding the drivers of Southeast Asian biodiversity loss." Ecosphere 8.1 (2017): e01624.

[7] Baguinon, N. T., M. O. Quimado, and G. J. Francisco. "Country report on forest invasive species in the Philippines." The unwelcome guests (2005).

[8] Potter, E. C. E., Weakley, A. S., Ngo, Q. K., & Barnett, L. K. (2019). Biodiversity Threats in Southeast Asia. Emmonsia, 19(1), 20-33

environmental laws, as well as ASEAN bilateral agreements on cross-boundary conservation, leave the region's biodiversity vulnerable to illegal, unsustainable, and destructive activities.[9]

2. Aquatic Biodiversity

The aquatic environment refers to 3 major sub-categories, namely freshwater, coastal and marine environments.

The ASEAN region is home to several freshwater biodiversity hotspots, including the Mekong River and its tributaries. However, this ecosystem is under threat, with more than 40% of freshwater species assessed in the region considered to be threatened, endangered, or critically endangered.[10]

In the Asia-Pacific region, Indonesia has the largest coastal coverage with 54.72 thousand kilometers, followed by the Philippines with 36.29 thousand kilometers. Comparatively, Singapore has a coastline coverage of nearly 200 kilometers. The majority of the ASEAN communities rely on the coastal ecosystems for their livelihoods.[11] *However, climate change has significantly impacted coastal biodiversity in the ASEAN region. Rising sea surface temperatures, acidification, and extreme weather events are already affecting species composition, migration patterns, and habitat availability.*[12] *As the sea level rises, shorelines recede and habitats such as mangroves, coral reefs, and seagrass beds are destroyed, impacting the many species that depend on them for survival. Changes in water temperature, salinity, and other conditions are contributing to the degradation of the fish nurseries and other habitats, reducing biodiversity and the availability and the human availability of fish for human consumption.*[13]

Various scientific evidence and relevant research have identified marine biodiversity in the ASEAN region as some of the richest and most diverse marine ecosystems in the world, but these are increasingly threatened. In Indonesia alone, over 80% of coral reefs are considered to be in poor or fair condition due to overfishing, destructive fishing practices, and pollution.[14] *Overfishing is a significant problem in the ASEAN region, with over 55% of global tuna catch coming from the Western and Central Pacific Ocean, where many ASEAN countries have fishing fleets.*[15] *Climate change is also increasingly threatening the region's marine biodiversity*

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[9] Sodhi, N. S., & Brook, B. W. (2019). Southeast Asian biodiversity in crisis. Cambridge University Press.

[10] https://www.iucn.org/sites/dev/files/content/documents/freshwaterbiodiversityindo-burma_0.pdf

[11] https://aseanbiodiversity.org/climate-change-impacts-on-biodiversity/

[12] http://www.aseanbiodiversity.org/environment-and-climate/climate-change/effects-of-climate-change-on-asean-coastal-ecosystems/

[13] https://aseanbiodiversity.org/wp-content/uploads/2015/08/The-State-of-ASEAN-Biodiversity_Coastal-and-Marine-Biodiversity.pdf

[14] https://www.worldwildlife.org/places/coral-triangle.

[15] https://www.greenpeace.org/southeastasia/publication/42293/the-hidden-impacts-of-canned-tuna/

in which around 97% of its coral reefs are at risk due to warming sea temperatures.[16]

[16]https://www.reefcheck.org/status-of-coral-reefs-in-southeast-asia/

Regional Significance

Despite occupying only three percent of the world's total land area, Southeast Asia houses a multitude of species, habitats, and ecosystems. Almost one-fifth of the planet's plant and animal species, one-third of coastal and marine habitats, one-third of the world's coral reef species, more than half of tropical peatlands, and almost half of the world's mangrove areas are located within Southeast Asia[17]. The region also contains four of the 25 global biodiversity hotspots: Indo-Burma, Sunderland, Wallacea, and the Philippines[18]. For example, the Indo-Burma Biodiversity Hotspot comprises the Greater Mekong countries – Cambodia, Lao PDR, Myanmar, Thailand, and Vietnam. Another example, is Borneo island, which encompasses three Southeast Asian countries namely Indonesia, Brunei, and Malaysia, is the third largest island in the world and holds about 6% of the world's global biodiversity in its rich tropical forests.

As iterated in the above statement, the rich biodiversity within Southeast Asia, whether it be terrestrial or aquatic, is constantly under threat from many angles. Despite the importance of these habitats, the biodiversity in Southeast Asia is in fast decline[19]. Southeast Asia consists of Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Timor-Leste, Thailand, and Vietnam and is of particular conservation concern because it has the highest rate of habitat loss of the tropical regions in the world and is estimated to already have lost 95% of its original habitat [20]. According to the International Union for Conservation of Nature (IUCN), Southeast Asia has the highest number of threatened mammal species in the world, with 13% of all mammal species at risk of extinction.

More than 660 million people depend on the region's biodiversity for their livelihoods and welfare, but only six percent of Southeast Asia is under conservation. Furthermore, Southeast Asia, being a young growing economic region, is expected to grow substantially within the years to come, with the population projected to grow by another 100 million people by 2030. Around 60% of the world's population growth is in Asia, where the number of people has tripled in the last 65 years[21]. Unsustainable growth within this region will further stress the existing ecosystems, including both the biodiversity and the communities relying on these ecosystems for their livelihood [22]. While discussing the importance of protection, it is worth noting that investing in measures to protect the biodiversity of Southeast Asia's forests and seas could produce benefits valued at more than $2.19 trillion a year - while slowing down climate change[23].

Regional significance of ecosystems

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[17] https://outlook-southeastasia-en
[18] https://wildcru.org/south-east-asia-hotspots-of-biodiversity/
[19] https://outlook-southeastasia-en
[20] https://www.diva-portal.org/smash/get/diva2:1483969/FULLTEXT01.pdf
[21] https://www.conservation.org/places/
[22] https://www.conservation.org/places/asia-pacific
[23] https://www.akademisains.gov.my/asm-publication/nexus-of-biodiversity/

As per the above statement, we classify the regional significance of our environment on biodiversity into 2 main categories: terrestrial and aquatic.

1. Terrestrial environments

Tropical Asia is likely to be proportionately richest in plant diversity, and for biodiversity in general, for its size [24]. Despite that, deforestation rates in Southeast Asia are some of the highest globally [25]. Additionally, it has the highest rate of mining in the tropics, around the greatest number of hydropower dams under construction, and consumption of species for traditional medicines which is a threat to biodiversity globally. Tree plantations and deforestation represent one of the most imminent threats, and some countries have already lost over half their original forest cover. The Philippines and part of Indonesia have projections of as much as 98% loss for some regions in the coming decade. Hunting and trade represent a significant threat as demand stems not only from food but also from medicine and ornamentation[26]. Biodiversity loss in the region will likely happen due to wildlife harvesting, overhunting in biodiversity hotspots[27], agricultural expansion, climate change, infrastructure development, and pollution[28].

2. Aquatic environments

The Coral Triangle, which spans six countries in Southeast Asia and the Pacific, is home to more than 500 species of reef-building corals and 3,000 species of fish. It is also one of the most threatened marine regions in the world, with overfishing, destructive fishing practices, and pollution all contributing to its decline. The Southeast Asia region recorded the world's highest number of threatened species in 2014, and extensive coastal development and sustainable exploitation of marine resources have resulted in the disappearance of over 40% of coral reefs and mangroves, leading to declines in fish stocks[29].

Ecosystem changes impacted by both human activity and non-human activity can cause instability of biodiversity such as the emergence of pathogens, microbes and parasites, and disease agents [30]. Pathogens and disease agents will attack aquacultures, such as fish, shrimp, and seaweed, which will result in a decrease in fishery production, which will affect Southeast Asia, an area that has high fishery and marine production in the world. This includes Indonesia, Malaysia, and the Philippines [31].

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[24] https://www.science.org/doi/full/10.1126/sciadv.abc6228
[25] https://www.nature.com/articles/s41467-019-09646-4
[26] *https//esajournals.library.wiley.com*
[27] *https://www.nature.com/articles/s42003-019-0640-y*
[28] *https://eprints.soton.ac.uk/430698/1/Coleman_et_al_2019_Biol_Conserv_Top_100_research_Qs_SE_Asia_final_MS.pdf*
[29] *https://outlook-southeastasia-en*
[30] *https://www.fao.org/3/cc0461en/cc0461en.pdf*
[31] *https://www.competecaribbean.org/wp-content/uploads/2021/05/Global-status-of-seaweed-production-trade-and-utilization-Junning-Cai-FAO.pdf*

South East Asia's marine biodiversity and habitats play a very important role in the region, supporting the livelihoods of more than 625 million people and coastal inhabitants, accounting for 60% of the world's capture fisheries and 80% of the world's aquaculture, and providing both direct and indirect value and ecosystem services, i.e., ensuring food security, coastal protection, research, tourism, recreation, employment, carbon storage, etc.[32] [33]*. Furthermore, South East Asia's coral reef fisheries are valued at $2.4 billion per year* [34]*. Unfortunately, marine habitats and biodiversity in this region continue to be threatened by anthropogenic activities such as overfishing, destructive fishing practices, pollution, and coastal development* [35]*.*

[32] WCS, 2021
[33] https://seads.adb.org/solutions/breaking-waves-kickstarting-global-sustainable-blue-economy-southeast-asia
[34] https://seads.adb.org/solutions/breaking-waves-kickstarting-global-sustainable-blue-economy-southeast-asia
[35] https://png.wcs.org/About-Us/

Recommendations

We resolve the following priority solutions to address the overarching issues on the climate-biodiversity nexus:

The Government Sector

- *To lobby environmental law inclusive for sectors and effectively implement these policy instruments at the ground level.*
- *To intensively engage with various government stakeholders at different levels to support the implementation of biodiversity protection/conservation by the establishment of the local unit force (e.g. rangers).*
- *To deliver effective protected area and protection forest management*
- *Secondary habitat restoration*

Sub-sections

1. ***Protect wildlife conservation:***

- *Strengthen global policy frameworks to protect endangered species such as CITIES[36] (The Convention on International Trade in Endangered Species of Wild Fauna and Flora)*
- *Strengthen national legislation and regulation; Support capacity-building to effectively design and implement strong governance frameworks to conserve threatened species and combat wildlife trafficking, illegal poaching*
- *Training for a customs officer to detect different techniques used by poachers to illegal smuggle wild products into the country*
- *Publish research about the threats, analysis-based policy recommendations, national action plan biodiversity loss*
- *To publish and share statistics on current endangered species population and population management strategy*

2. ***Protect endangered species' environment:***

- *Strengthen legal solutions to protect forests, national parks, and nature to conserve and develop the capacity for rangers*
- *Strengthen laws against illegal timber import and trade; Join regional, and international agreements to prevent illegal trade of wood products*
- *Secure government policies to protect coral reefs and sustainable fishery (policies to ensure that fish being imported into the country and purchased by consumers have been caught legally and sustainably.*

[36] CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) is an international agreement between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten the survival of the species.

- *To develop blue finance or payment of ecosystem services (PES) for the sustainable conservation in the area with the high biodiversity often being a destination for tourism that is vulnerable to be degraded*

3. Education and outreach:

- *To intensively engage with the education department to mainstream environmental conservation into schools' curricula*
- *To intensively engage with various government stakeholders at different levels to support the implementation of biodiversity protection/conservation*
- *Open grants and support for initiatives/projects on biodiversity management*

The Private Sector

- *Develop certification/standard for companies on sustainable and responsible trade. For example: To consider and encourage the application of the Taskforce on Nature-related Financial Disclosures (TNFD) framework and integrate nature into their decision-making.*
- *Publish a report on measuring the impact of global trade on biodiversity[37] and suggest biodiversity-conscious supply chain management methods[38].*
- *To promote conservation-friendly enterprises in forest communities like non-timber forest products, high-value agriculture, community-based ecotourism, and medicinal plants, to provide alternative livelihood opportunities, increase incomes and reduce pressure on forests and biodiversity.*

The Civil Society

- *To ensure inclusion of youth, women, and local communities by taking into account their voices and needs while developing and implementing solutions to address climate and biodiversity problems*
- *To ensure inclusion of the customary law in the specific areas that rely much on the natural resources*
- *To apply social and behavioral sciences in conservation interventions to increase their effectiveness*
- *To develop more platforms and resources to facilitate greater exchange of ideas and sharing amongst groups and stakeholders.*
- *To design and implement rehabilitation ecosystem programs that are science/evidence-based on any scale*
- *To raise awareness about protecting the wildlife environment, wildlife consumption/trafficking of the community in the buffer zones of nature conserves*

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[37] E.g. Measuring the Impact of Agricultural Supply Chains on Biodiversity: https://ec.europa.eu/environment/biodiversity/business/assets/pdf/2021/Measuring%20the%20Impact%20of%20Agricultural%20Supply%20Chains%20on%20Biodiversity_A%20corporate%20needs%20assessment.pdf

[38] E.g. Unilever biodiversity conscious supply chain management https://www.cbd.int/business/GP%20meeting%20doc/3_Third%20meeting%20of%20the%20GPBB/PPts/Supply%20Chain%20Management_Rajendra%20Dobriyal.pdf

- *To reduce demand for wildlife product consumption through behavior change campaigns*
- *To ensure vulnerable local communities such as fishermen mitigate coastal damage and adapt to environmental changes by implementing aquaculture biosecurity.*

We, the YSEALI-WLA '23 believe in our strong capability as women to galvanize and mobilize all Southeast Asian youths to Climate Action and Biodiversity Management towards a sustainable, equitable, and resilient ASEAN Community.

#WomenForE4

Amplifying Women's Leadership for Climate Resilience

Climate Adaptation

&

Resilience

Draft Declaration Document

Sub-Committee	Climate Adaptation & Resilience
Co-Leads	Dina Danomira Aprille Juanillo
Members	Dina Maria Danomira - Indonesia Aprille Juanillo - Philippines Pin Udomcharoenchaikit - Thailand Sokha Roeurn - Cambodia Husni Jo - Malaysia T. H. Aye - Myanmar Hazwani Wajihah binti Jefery - Brunei Darussalam Wai Pan - Myanmar Kara Medina - Philippines Vath Sok Khorng - Cambodia Khong Phuong Anh -Vietnam

Background

Climate change is the defining issue of our time and we are at a defining moment. Average temperatures are already changing, seasons are shifting, and extreme weather events are becoming more frequent. These events result in significant impacts on food production, water resources, human health, poverty, gender inequality, infrastructure, and ecosystems. Without drastic action today, adapting to these impacts in the future will be more difficult and costlier.

There are three major problems identified in climate adaptation and resilience space of Southeast Asia region:

1. **Absence of equity and inclusivity in climate partnership**

Currently, climate action is not inclusive and responsive to the needs of minority groups and level of participation is now pseudo-participation. Hidayah et al. (2018) stated that indigenous representation in development agendas is low in which indigenous people have been seen as an object of development, not the subject. Therefore, this has resulted in problems such as environmental degradation, loss of land ownership and control, etc.

2. **Poor gender-responsive policies and programmes in climate resilience**

Women's organisations and feminist groups are traditionally at the forefront of change for gender equality and the empowerment of women in many sectors and areas. However, their technical expertise in regards to climate change remains limited, and the number of groups and organisations that play a prominent role in this respect remains small. However, technical expertise on the many facets of climate change, as well as on gender equality, and the intersection of the two fields are needed to enhance advocacy and provide inputs for gender-responsive climate policy and action.

3. **Need for community-centered climate science and education**

There is a lack of climate infrastructure that focuses on preparation, rather than rehabilitation and a lack of large-scale climate solutions to reach smallholder farmers and minorities due to funding and resource limitations. Climate education has been exposed to students, however, it is not strong enough to create an impactful change of behaviour (Eilam & Trop, 2012). Research has proven that climate crises is not a top priority compared to other

trending global crises like national war or the pandemic. Hence, this downplays the gravity of the climate emergency. On the other hand, resigning to a "climate doom" perspective is an easier option. Overall, there is a clear lack of climate education within the school syllabus which adds to this lack of behavioural change.

Regional Significance

Southeast Asia is globally considered one of the most vulnerable regions to climate change. According to data from the Internal Displacement Monitoring Center, 54.5 million people were displaced by weather-related natural disasters across Southeast Asia between 2008 – 2018 (Dennis, 2020). Floods accounted for over 60% of those events which have affected more than 70 million people over the same period. The region is also vulnerable to droughts, which have intermittently affected large parts of the region. During the 2015-2016 and 2018-2020 periods, moderate drought conditions affected more than 70% of the land areas (Renaud et al., 2021).

To put it into context, the Global Climate Risk Index, which calculates impacts of extreme weather events, ranked Myanmar 2nd, the Philippines 4th, and Thailand 9th as the top three ASEAN countries at risk (Eckstein et al., 2021). In the future, countries across the region will face rising sea levels, heat waves, floods and droughts, and increasingly intense and unpredictable weather events. It is predicted that the 50-70 centimetre rise in sea levels expected by the end of the century will increasingly threaten the 77% of Southeast Asians who live along the coast or in low lying river deltas. By 2050, daily high tides will flood the areas where over 48 million people in Southeast Asia now live, while average annual flood levels would inundate the homes of over 79 million (Dennis, 2020).

The economic impacts of these climate events, if left unchecked, will be devastating. Climate change could cut over 35% of the region's GDP by 2050 as it can severely impact key sectors such as agriculture, fisheries and aquaculture, along with human health and labour productivity (Renaud et al., 2021). All these impacts are concerning for food security and for rural livelihoods, especially in Laos PDR, Myanmar and Vietnam where agriculture accounts for 61%, 49% and 31% of employment respectively (ASEAN, 2022). Although the region has made advancements in poverty reduction over the last 30 years, evidence suggests that the benefits have not been evenly distributed and many people remain close to becoming poor and highly vulnerable from climate shocks.

As such, climate change can exacerbate existing socioeconomic inequalities through disproportionate impacts on the poorest and most marginalised communities, including women, ethnic minorities and indigenous communities. For instance, the Organisation for Economic Co-operation and Development (2021) reported that 26.7% of women make up the agricultural workforce within the region. Not only do these female farmers have to carry the climate burden, they are also less likely to be granted beneficial access to natural resources such as land, water, forests as well as adaptation strategies which encompass information-sharing, financial mechanisms and technologies (Resurrección et al., 2019).

Such hindrances for access to resources and ability to adapt are particularly felt by women and girls due to prevalent societal norms and existing culture. These social norms can also limit their representation and influence in the decision-making process of climate actions. In fact, the International Union for Conservation of Nature (as cited in UN Women, 2022) saw that only 6% of women hold ministerial positions for environmental matters within ASEAN in 2020 which may lead to solutions that do not fully incorporate women's experiences or address their needs. This is further supported by a study conducted by United Nations Environment Programme and UN Women that showed only 34% countries in the Asia-Pacific region currently include gender mainstreaming in their climate change law and policies (Reggers, 2021). There is much more to lose than gain by continuing to exclude female representation in the climate discussion, and an opening for opportunities such as knowledge and appropriate skills must be provided in both formal and non-formal systems so they can be confident in making informed decisions without fear of reprisals.

Indigenous recognition is also important because globally, indigenous communities protect 80% of the world's biodiversity (UNFCCC, 2022). They are considered as "repositories of learning and knowledge about how to cope successfully with local-level climate change and respond effectively to major environmental changes" (United Nations Human Rights, n.d.) whereby women typically play an important role in preserving and transmitting their ancestral knowledge. Nevertheless, these communities are also highly vulnerable to the effects of climate crises, worsened by the constant extraction of natural resources in which they depend upon. In addition, while their rights are incorporated in treaties, instruments and standards, these are not legally binding and oftentimes, the core principles to respect their rights are not upheld. Field et al. (as cited in Johnson & Boyland, 2018) pointed out that Southeast Asian indigenous communities still remain at risk due to compounding factors such as insufficiencies in

government support, infrastructure and access to basic services as well as insecure land tenure and lack of citizenship.

The aforementioned barriers also limit women's access to existing climate funds, which is imperative to addressing the climate crisis. In fact, women would lose opportunities to tap into an estimated average amount of $22.25 billion for East Asia and the Pacific as well as $14.05 billion for South Asia respectively based on World Bank's figures (as cited in UNDP, 2013). Having access to these funds will not only lead to effective and efficient adaptation and mitigation outcomes, but it will also simultaneously lead to the betterment of women's lives in terms of empowerment, productivity and socioeconomic development.

Much work needs to be done to resolve gender disparity and unequal distribution of resources in climate change impacts and efforts. Yet, the lack of sex-disaggregated data remains a challenge to analyse and tackle deep-rooted issues. Ultimately, policies and interventions should focus on creating synergies which address the needs and priorities of the poor and the marginalised groups to ensure an equitable and inclusive climate adaptation and resilience.

Recommendations

As young women in the ASEAN working in climate resilience, community development, and humanitarian response, we recommend **five key priorities** to achieve gender-just climate resilience approaches and programming in Southeast Asia:

1. Inclusive and equitable partnerships in climate action
2. Community-centred climate science
3. Women-led, locally-led climate resilience programmes
4. Transparent and gender-responsive climate policy
5. Popularised climate education

In our work and training, we find that these priorities are most relevant and crucial to our regional context. We propose the following recommendations addressed to government agencies and units, international and local civil society, climate scientists and educators, and grassroots organisations committed to strengthening climate resilience.

Inclusive and equitable partnerships in climate action

For government agencies, non-government organisations, and funding organisations

- Partner with and support local women's groups already active (or seeking to be active) in coastal, mountainous, or urban communities; and ensure that their indigenous knowledge and lived experiences shape the calls to action for local government units
- Promote gender equity in climate action by
    - Amplifying calls for locally-led, women-led climate action in national and international advocacy fora, including youth who advocate for climate resilience.
    - Ensuring existing women's advisory boards toward a strong and comprehensive climate-resilient agenda, vs. only specific to humanitarian action or disaster risk reduction.
    - Facilitating spaces for women and marginalised sectors to voice their opinion and ensure their voices are heard in decision-making at the community and policy level.
- Establish and amplify recognition of indigenous communities, indigenous practices, and indigenous rights to their land and/or sea as solutions to protecting biodiversity, through a transparent natural resource management policy.
- Challenge existing power structures and strive for equitable partnerships through the non-tokenistic inclusion and meaningful participation of:
    - Women, indigenous people, persons with disability, youth and frontline communities in technical dialogue, roundtable, and other discussions
    - National and local government, such as the ministry of agriculture (women in the field are encouraged), which plays a vital role in supporting marginalised groups
    - Scientists or groups of university students that pursue environmental fields, with background or training in community engagement and policy

Community-centred climate science

For non-government organisations, funding organisations, climate science non-profits, and tech companies involved in satellite data and artificial intelligence

- Partner with technology companies to implement open source data systems and predictive data models for access to weather forecasts for smallholder farmers and fisherfolk; more accurate weather forecasts and market mechanisms that lower agricultural risks can help farmers make more profitable decisions and lead to greater investment and better management.
- Ensure equitable access to tech for women, and seek to achieve an equal balance of unpaid care and domestic work in households.
- Establish trust and make the community feel safe by providing up-to-date information or data on current progress, and ensure the provision of basic and accessible knowledge on climate resilience in local languages
- Uphold the Data Privacy Act (or its equivalent in SEA countries); ensure the profile data of the community should be safe and for internal use only.

Gender-responsive climate resilience programmes

For public and development sector, including regional and national government agencies and non-government organisations

- Promote and encourage women-led and women-focused sustainable solutions through women entrepreneur networks, incubation hubs, and seed grants.
- Establish gender-specific (or gender-responsive) climate finance program where the focus area and criteria incorporates gender lens in order to expand women's access to productive resources.
- Conduct comprehensive community mapping of gender vulnerability vis-a-vis climate risks in the region
- Collect and make use of sex-, age-, and disability-disaggregated data by developing gender mainstreaming indicators (e.g. the number of female representatives) in project planning and implementation.

Gender-responsive climate policy

For national governments, with regional ASEAN oversight

- Ensure transparency in climate-related policies.

- Put policies in place to address gender gaps in agriculture, such as "gender-smart indicators" which measure gender results in five main areas to measure the degree of gender empowerment, based on the Gender Profile of Climate-smart Agriculture in Ghana and the Gender Empowerment Index.
- Enforce gender-responsive policies for "invisible" care work done by women in development.
- Ensure transparent justice systems that are able to hold governments and/or stakeholders accountable for damages.
- Allocate more funds into disaster preparedness, disaster risk reduction, and climate change adaptation, apart from disaster response or relief.
- Facilitate a gender and power analysis in the stakeholder mapping activities of crisis-affected communities, to support their strategy to influencing climate policy.

Popularised climate education

For public schools, non-profits in education and development, and private sector

- Integrate the gender-aspect of disaster preparedness and rehabilitation courses in schools, and in the practices of non-government and government agencies.
- Incorporate gender aspects into training sessions and/or materials, including the use of gender-sensitive approaches such as languages and illustrations in publicity or awareness materials.
- Educate the public or young generation through mainstream social media platforms, and create safe online/offline platforms in which the youth can engage in climate action without fear or disinformation.

We recognise that addressing the climate crisis requires a comprehensive effort, and that some ASEAN states may have more experience in some of these actions than others. As such, we call for a collaborative, learning-focused, reinvigorated nexus approach to amplify women's voice and leadership in climate adaptation and resilience in Southeast Asia.

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Draft Resolution Document

Sub-Committee	Sustainable Agriculture
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Members	Xiaoyun - Singapore Kanjana - Thailand Siti Jaafar - Brunei Maiyer - Laos Milky - Philippines Nguyen Thi Hai Yen - Vietnam Ret Thaung - Cambodia Lucrecia Cesar - Timor Leste Isaura Barros - Timor Leste

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Problem Statement/ Background of the issue

[*Here you should add a short explanation of the problem that your Sub Committee is analyzing - for example, Water Security refers to _____ (use examples and statistics to illustrate the issue)]*

PROBLEMS IDENTIFIED:

1. Insufficient technical knowledge and skills on sustainable and good agricultural practices among existing farmers
2. Land loss to fulfill agriculture demands and growing population whereby land is converted for agricultural purposes and for outside of agricultural use
3. Women-centric field that lack women to lead farmer cooperatives, representation and participation
4. No system to identify the market and no standard and premium price for produce, driven by investors in the type of crop to produce

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Regional Significance - why does this matter?

[In the space below, you should write about how this issue is important to Southeast Asia, which countries and people it affects and statistics/ facts/ examples that support the regional significance of the problem]

1. Insufficient technical knowledge and skills on sustainable and good agricultural practices among existing farmers. Farmers in Southeast Asia have differing income levels, ranging from US$200 to $1100 per farmer per year based on the different levels of technology and inputs (1). Farmers often have limited market information and may lack production technologies to meet the standards to access markets.

2. Land loss to fulfill agriculture demands and growing population whereby land is converted for agricultural purposes and for outside of agricultural use. Smallholders face the issue of insufficient access to land with many of them owning 3 hectares or less. Many of them do not have legal security over their land (2). The last 10-15 years, smallholders were evicted with their land confiscated by state or private actors to be given to private foreign and domestic investors (3).

3. Women-centric field that is lacking women to lead farmer cooperatives, representation and participation. Women smallholders constitute 45% of economically active women in the Southeast Asia region. They still face a number of legal and social hurdles, including access to land, credit and education (2). This is especially apparent for Cambodia and Vietnam.

4. No system to identify the market and no standard and premium price for produce, driven by investors in the type of crop to produce. Smallholders, particularly in Cambodia, Laos, Myanmar and Vietnam have difficulties accessing both regional and global markets (2). They often struggle to receive fair prices, obtaining a small percentage of their retail prices.

(1) Haggblade, S., & Boughton, D. 2013. A strategic agricultural sector and food security diagnostic for Myanmar (IDWP 131). Prepared for USAID/BURMA. https://ageconsearch.umn.edu/record/161372
(2) Marks, D. 2019. Common challenges of smallholders in ASEAN: Lacking access to land, water, market and state: Environmental governance and strategies for the sustainability in the lower mekong basin.

(3) Amanor, K. 2017. The global land grab: Beyond the hype. The Journal of Peasant Studies, 44(2), 506-509.

Recommendations

[In this section, you should list down recommendations from your research/ debate and discussions. They can be framed in this manner: "We recommend the establishment of a youth water security force, which includes children from local schools. This force will be responsible for working with local schools to ensure clean water access to young children. They will work with authorities to do 1), 2) and 3) and work towards_____"]

1. We recommend the formation of a monitoring committee to monthly monitor and evaluate the efficiency of the project.
2. We recommend having women as part of the farming communities/cooperatives to ensure that there are more women leadership within the sector. They will work to represent the voices of the smallholder women and work towards a more inclusive system that includes women in the agricultural workforce.
3. We recommend disseminating information on sustainable agriculture to the local area. This will allow farmers to access good agricultural practices whilst matching the current use of technology for farming activities.
4. We recommend that a system to maintain the market price of cash crops be set for smallholders, ensuring that there is a fair market price for the crops produced by smallholders.

Farmers will work with authorities to do 1), 2) 3) and 4) and work towards a fair system in place for smallholders in the competitive and thriving ecosystem.

Draft Resolution Document

Sub-Committee	Sustainable Energy
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Members	Fhiliya Himasari - Indonesia Syaharani **(Rani)** - Indonesia **Rinna** Santi Sijabat - Indonesia Paleena Xaiyalath - Laos Lim Zheng **Syuen** - Malaysia Fatin Farhanim Mohammad - Malaysia Thu Thu Aung - Myanmar Jitsai Santaputra - Thailand Sonia Pedrunela Ximenes - Timor Leste

***The bold + underline section is the preferred nicknames**

Problem Statement/Background of the issue

[Brief] state of climate change, how climate change disproportionately impacts vulnerable groups, and why we need to transition towards sustainable energy. *Explain why moving towards cleaner energy is important for SEA because climate change is getting worse, SEA is very vulnerable to CC impacts, and etc.*

Climate change refers to long-term shifts in temperature and weather patterns. The driving factors associated with human activities are primarily due to the burning of fossil fuels since the 1800s (https://www.un.org/en/climatechange/what-is-climate-change). The historic development of CO2 emission in ASEAN from 1970 to 2010 was a result from the population growth and the heavy reliance on fossil fuels as the dominant fuel source which shaped the country's production structure towards the energy-intensive industrial sector (Sandu et al., https://eneken.ieej.or.jp/3rd_IAEE_Asia/pdf/paper/046p.pdf). Oil, natural gas and coal being the cheapest and most readily available fuel are the largest share in ASEAN's primary energy mix at 78% and are expected to continue to dominate until 2050 in meeting the growing energy demand (Phoumin et al., 2021 https://doi.org/10.3390/su13052819). The energy demand in ASEAN has

grown appreciably over the past four decades, driven essentially by high economic growth, underpinned by increased urbanization and industrialisation. In 2013, about 3.6% of global greenhouse-gas emissions were emitted from this region and the share is expected to rise substantially (Chontanawat, 2019 https://doi.org/10.3390/en12040764).

For the ASEAN region, oil will be the largest energy source in the primary energy mix in 2050, at 39.6%, down from 36.9% in 2017. Coal was the second largest energy source after oil in 2017, at 21.6%, and is projected to have a 22.4% share in 2050. Natural gas is projected to have the second largest share of the primary energy mix in 2050, at 24.7%, overtaking coal (https://www.mdpi.com/2071-1050/13/5/2819).

Hotter weather, longer monsoon seasons, increased droughts and rising sea levels will severely impact key sectors such as agriculture, tourism and fishing. Amongst the ASEAN nations, Myanmar, the Philippines and Thailand are ranked by Germanwatch the top three most susceptible to climate change with economic damage and fatalities (Eckstein, D.; Künzel, V.; Schäfer, L. Global Climate Risk Index 2021; Germanwatch e.V.: Berlin, Germany, 2021). One extreme weather example can be seen with Typhoon Haiyan in the Philippines in 2013, which devastated approximately 600,000 hectares of farmland causing 1.1 million tons of crop losses and claiming over 6,000 lives. ASEAN is at risk of losing over 35% of its GDP by 2050 as global temperatures are predicted to increase by 1.5 °C above pre-industrial levels
(https://www.openaccessgovernment.org/asean-climate-change/123591/#:~:text=Their%20report%20emphasises%20that%20ASEAN,human%20health%20and%20labour%20productivity).

One of the greatest challenges in all countries in ASEAN of increasing the share of variable renewable energy (e.g., wind and solar) in the power mix is the high cost of upgrading and integrating the systems that need more investment in grids, the internet of things, technological know-how, and quality energy infrastructure. In a recent virtual conference on Asia—Carbon Capture, Utilization, and Storage (CCUS)—organized by ERIA on 18 February 2021, experts in Asia generally expressed that ASEAN would need to create an energy bridging from the current fossil based energy system to a cleaner energy system that will need to consider the role of cleaner use of fossil fuels through innovative technologies such as clean coal technologies and CCUS, the technology that can remove carbon dioxide from flue gas and atmosphere, followed by recycling carbon dioxide for utilization and further determining safe and permanent storage options. In this way, the CCUS can reduce CO2 and GHG emissions. Therefore, urgent steps need to be taken to decarbonise the energy sector through pathways to a low-carbon economy which require the rapid deployment of the clean use of fossil fuel technologies, renewable energy development, and a doubling of energy efficiency, given that the energy sector accounts for two-thirds of global GHG emissions (https://www.mdpi.com/2071-1050/13/5/2819). The transition to renewables also

poses challenges to some ASEAN countries such as Thailand, Singapore and Vietnam as they are more vulnerable to potential risks from the global supply chain of natural gas and oil due to their high import dependence on natural gas (https://aseanenergy.org/outlook-on-asean-energy-2023/).

Strong renewable resource potential across the region also creates opportunities for more ambitious development. However, this development is often lagging due to uncertainty over policy and investment frameworks. For example,Vietnam has one of the best wind resources in Southeast Asia with an estimated potential of 311 GW.7. While reporting indicates that Vietnam is likely to increase the role of renewables in its Power Development Plan 8, the release of this plan has been delayed. Moreover, there are indications that fossil fuels may remain the backbone of its economic development in the medium term. Other persistent challenges related to structural and regulatory barriers which have enabled the continued prioritization of fossil generation over renewables remain. The lock-in of fossil fuel-based electricity sources through inflexible power purchase agreements has generally inhibited renewables investment to date. Incumbent interests in coal, concerns about energy security and uncertainties related to operating under a very different power model have all contributed to overall slow progress in policy and regulatory reform.

Higher costs represent another barrier. Despite dramatically falling technology costs for renewables around the world in recent years, capital expenditure requirements for utility-scale solar PV and wind projects remain significantly higher in Indonesia than in China or India. Lack of scale in deployment and underdevelopment of supply chains, amid high domestic content requirements, have all contributed to elevated project costs. Persistent development, operational and economic risks in many Southeast Asian countries also contribute to a relatively high cost of financing. These risks typically fall around priority areas: power sector sustainability, project bankability, financing, the cost of capital, and the degree to which countries have taken an integrated policy approach to scale up renewables. In many countries, renewables projects are only marginally bankable. This stems in part from lack of certainty over cash flows, but also from foreign exchange risks in some markets, with power purchase agreements priced in local currencies while a portion of project equipment costs (e.g. solar panels, wind turbines) is priced in international currencies.

Countries are most aware of the trade-offs required to attain the energy trilemma but it is a real concern as to whether ASEAN will achieve energy transition within the context of climate change timeframe together. Navigating the ASEAN energy transition in 2023 should shift from grand pledges to careful long-term planning and clear policy directions, balancing energy security, economic growth and sustainability.

Regional Significance - why does this matter?

Southeast Asia is globally considered one of the most vulnerable regions to climate change. The geographical characteristics and demography make Southeast Asia prone to suffer from dangerous climate impacts such as sea levels, heat waves, floods and droughts, and any other climate-induced weather events or disasters. These impacts have been increasing and will affect people's livelihood as they trigger food insecurity, water scarcity, jobs and housing displacement, as well as severe economic damage. With archipelagic landscape, it is estimated that 77% of Southeast Asia's total population lives in coastal areas working mainly in coastal fisheries and aquaculture (PEMSEA, 2015). This fact alone raises the level of vulnerability against climate change in Southeast Asia, as millions of people are at risk of losing their home and livelihood due to sea-level rise. This vulnerability is heightened also by the fact that 30% of SEA population still depends on the agricultural industry (World Bank, 2020), which is prone to climate-associated drought and extreme weather. For example, Indonesia and Thailand have half of their population working in agriculture. Consequently, mitigating and strengthening adaptive capacity against climate change impacts inherently should be one of Southeast Asia's main priorities, particularly since climate change disproportionately affects the most vulnerable and poor communities. After the COVID-19 pandemics, 5 million people in Southeast Asia are being pushed into extreme poverty (ADB, 2022) and climate change threatens the survival of these people.

As for now, Southeast Asia faces a dual challenge. It not only must adapt to climate change caused largely by greenhouse gasses emitted over decades long by advanced economies, it also must alter development strategies that are increasingly contributing to global warming. Southeast Asia is heavily dependent on coal and oil, and its growing reliance on fossil fuel is set to increase as energy demand is projected to triple by 2050 in the absence of new policies to accelerate sustainable and clean energy transition. IRENA projects by accelerating renewable energy deployment, Southeast Asia can meet about two-third of its growing energy demand with renewables while cutting 75% of its energy-related carbon emission by 2050 (IRENA, 2022). It's true that Southeast Asia has an abundance of renewable energy potential, with solar energy potential of 939 GW, wind energy potential of 1.289 GW, and hydro energy potential of 350 GW. There is also more renewable source being used in smaller portions around the SEA region such as geothermal, biomass, and tidal wave. However, despite the large renewables potential and the urgency, Southeast Asia still faces a lot of hurdles in transitioning to a cleaner and more sustainable energy source, mainly in achieving the energy trilemma throughout the transition process and ensuring that the transition is just. For example, the affordability of cleaner energy and the capacity to replace the installed base load or even enhancing the capacity are transition issues yet to be settled.

<u>Energy security</u>

The main issues facing all the ASEAN countries for decades are mostly on how to reduce the energy demand and supply gap contributed mainly from the rapid increase of energy demand; over dependence on fossil-fuel resources to meet energy demand; and increasing dependence on energy imports due to depletion of domestic resources. The situation across ASEAN is not homogenous – each country has quite different diversity supply and generation, and each relies on different import sources. Transitioning away from fossil fuel and diversifying the the energy mixes with fast adoption of renewables is crucial to reduce the reliance on foreign sources of energy and increase energy security in the region. Improving the energy security in the region also means increasing energy access, increasing energy supply and generation, and improving energy system reliability though investments in energy infrastructure. Also, ASEAN as a energy secure community means it should be able to withstand and respond to supply shocks to minimise disruption to economic activity and consumer.

Energy equity/access

It is estimated that around 70 million people in ASEAN are without access to electricity. Access to reliable and affordable energy which include basic access to an affordable and reliable abundance of energy for electricity and clean cooking fuels.

Extending energy access to all is a multi-layered challenge for ASEAN, given the different and diverse geographical characteristics of its member states. Indonesia and the Philippines as archipelagic countries certainly encounter far more obstacles to reach their thousands of islands and rural communities, and the possibility of utilising multilateral power interconnections from neighbouring countries is limited.

Providing affordable energy adds another obstacle, which manifests itself in different sets of challenges. For example, electricity prices in Cambodia, Singapore, and the Philippines are the highest in ASEAN, which has a negative impact on their economic activities. In other member states like Indonesia, ensuring the affordability of energy through fuel subsidy has created a dilemma for the government. Inefficient and unwise subsidy allocation can either burden the country's budget or set an unfair playing field for renewable energy to compete with the conventional fuels.

Environmental Sustainability

Climate change is posing unprecedented challenges to energy systems, with worsening physical impacts on infrastructure often not designed to withstand more frequent and intense weather extremes. Adverse climate events across the region have also displaced many people which lead to increase demand for energy. This accelerate the need for decarbonisation of energy however efforts to decarbonise have been partly counterbalanced by a rapid rise in energy consumption and ASEAN's fast-expanding economies and growing populations. ASEAN earnestly need a low-carbon

electricity generation and energy system efficiency. Substantially increasing its share of low-carbon electricity generation and striving to lower the GHG emissions from the energy sector can help mitigate the environmental impact from energy sector. Achieving carbon neutrality will require decarbonisation of energy systems, and governments and private organisations are ramping up investments in low-carbon generation, energy efficiency, grids, and storage.

Some countries and governments in Southeast Asia have already put some effort in further advancing energy transition in the SEA region while trying to attain the energy trilemma and ensuring the just aspect is at play. Last year, Indonesia and Vietnam received funding from the developed economies under Just Energy Transition Partnership (JET-P) schemes. But, more support in form of technology transfers, capacity building, investment, and incentive are needed to accelerate energy transition and ensure that the energy trilemma will be met. Aside from that, it is also important to focus on making the transition process just and beneficial while leaving the most impacted, the most vulnerable, and the poorest behind by empowering the communities particularly opening wide access to women to participate in energy transition.

Recommendations

[In this section, you should list down recommendations from your research/ debate and discussions. They can be framed in this manner: "We recommend the establishment of a youth water security force, which includes children from local schools. This force will be responsible for working with local schools to ensure clean water access to young children. They will work with authorities to do 1), 2) and 3) and work towards_____"

- **Increase government commitment and involvement in enabling a just energy transition:** Governments should set targets for renewable energy use and implement policies and regulations that incentivize the development and adoption of renewable energy technologies and battery storage. Encourage heavy investments in transition technologies such as hydrogen, battery storage, and carbon capture, utilization, and storage (CCUS) through subsidy provision.

- **Promote Energy Efficiency and Minimum Energy Performance Standards (MEPS):** Individuals and private bodies can play a role in promoting energy efficiency by reducing energy consumption through conservation practices and adopting energy-efficient

technologies. Governments can establish and enforce MEPS that meet international standards.

- **Enhance regional cooperation:** ASEAN member countries to strengthen their collaboration to develop a regional energy grid that allows for the sharing of energy resources and promotes energy security through the ASEAN Plan of Action for Energy Cooperation (APAEC) and ASEAN Power Grid (APG). Further, the ASEAN member countries should also settle a transition target by 2030 or 2050.

- **Encourage investment in clean energy and divestment from fossil fuels:** Governments and financial institutions can create a conducive environment for private sector investment in clean energy by providing subsidies, tax incentives, and regulatory frameworks that support the development of renewable energy projects while endorsing a ban on fossil fuel investments.

- **Foster public awareness and education:** Individuals can play a role in promoting energy equity and environmental sustainability by increasing public awareness about energy issues and advocating for policies that promote clean energy sources.

- **Establishment of an ASEAN Just Energy Transition Coalition**: Governments to provide space for dialogue with the coalition, composed of representatives of public sector, private sectors, civil society organizations, non-profit organizations, youth organizations etc. which are participative, open, and accountable. Ensuring the representation and participation of vulnerable and impacted communities, particularly women, youth, rural and indigenous people, to ensure a truly just energy transition that leaves no one behind. One of the first steps is to create a Just Transition Framework in ASEAN as core value in implementing energy transition across Southeast Asia.

Draft Resolution Document

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Agenda	Problem Statement Regional Significance Recommendations Appendix

Problem Statement

The current unprecedented anthropogenic climate change is causing significant impacts on water resources in ASEAN and **exacerbates existing challenges** related to water management and water use in ASEAN, thus threatening water security in the region.

While ASEAN nations have benefited from the rapid urbanisation, industrialisation, globalisation, and economic and population growth in the past three to five decades, it has unfortunately triggered a slew of resource bottlenecks, environmental degradation, and compromised quality of life. The rapid development has induced much pressure on the natural ecosystem at a rate that outpaced the ability of the natural ecosystem to mitigate these risks.

Water security refers to the availability, access, and quality of water resources necessary to support human well-being, economic development, and ecosystem health. It involves ensuring that there is enough clean water to meet the needs of communities and industries, while also protecting the environment and natural systems that provide water resources.[1]

The increased greenhouse gas emissions from rapid urbanisation and industrialisation have led to rising temperatures, which at present is increasing at a rate of 0.2°C per decade.[2] This increased temperature has a direct thermodynamic effect on the water cycle with two opposing effects at different times throughout the year in ASEAN as well as globally.

Changes in rainfall and temperature can have significant impacts on the occurrence of floods and droughts.

> **Floods.** When there is a significant increase in rainfall, the amount of water flowing in rivers and streams also increases, leading to flooding. Heavy rainfall can also saturate the soil, making it unable to absorb any more water, resulting in an increased runoff that can lead to flash floods. In addition, high temperatures can cause rapid melting of snow and ice, leading to increased runoff and flooding.
>
> Conversely, droughts can occur when there is a prolonged decrease in rainfall. As the soil becomes drier, it is less able to hold water, leading to reduced runoff and low river levels. This can affect the availability of water for human and animal consumption, agriculture, and industry.
>
> **Droughts.** High temperatures can increase evaporation and transpiration rates, causing more water to be lost from the soil and vegetation, leading to droughts. Additionally, in areas where precipitation is limited, even a small reduction in rainfall can lead to drought conditions.
>
> Changes in temperature and precipitation patterns can also affect the timing and intensity of rainfall events. For example, in areas where rainfall is concentrated during specific seasons, if these seasons are shortened or if rainfall events become more intense, it can increase the likelihood of flooding.

Overall, changes in rainfall and temperature can cause significant impacts on the occurrence of floods and droughts, which not only affects domestic and industrial use but also affects crop yield and subsequently disrupting food supply chain, hence, it is important to understand how climate change can exacerbate these natural phenomena.

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[1] Pahl-Wostl, C., Palmer, M., & Richards, K. (2013). Enhancing water security for the benefits of humans and nature—the role of governance. Current Opinion in Environmental Sustainability, 5(6), 676-684.

[2] Nema, P., Nema, S., & Roy, P. (2012). An overview of global climate changing in current scenario and mitigation action. Renewable and Sustainable Energy Reviews, 16(4), 2329-2336.

Disruption to the water cycle is a major driver of weather changes and further climate changes, as it impacts the availability, distribution, and quality of water resources– also taking into account seasonal and annual water discharge and water yield– that are essential for many weather patterns and climate processes that feed into our daily water supply needs. Weather and climate changes are already happening and intensifying by the hour with no signs of slowing down if no measures are taken to mitigate these risks.

The current water infrastructure design and water resource management practices in most ASEAN countries **ill-equipped** to face the effects of weather and climate changes– these emphasize social and economic benefits; however, much consideration must also be afforded on the environment and sustainability to avoid major loss to natural resources and exacerbation of climate change. Besides impacts of climate change, existing water-related challenges that all ASEAN countries face include, but are not limited to:

1. **Point sources** and non-point sources of **water pollution including plastic wastes, microplastics, untreated domestic, agricultural, industrial wastes and logging activities**
   ASEAN countries are home to some of the world's largest manufacturing factories and food producers. However, this rapid industrialisation has led to a severe water pollution crisis in this region. Industries such as textiles, electronics, chemicals, agriculture are some of the primary contributors to water pollution. The discharge of toxic chemicals, heavy metals, drift logs, sediments, microplastics, and other pollutants into rivers, lakes, and seas has contaminated water sources, impacting human health, terrestrial and aquatic lives, as well as the environment.[3]

   Studies have found the presence of microplastics in water, sediment, air, and even human blood.[4] This poses a threat not only to the environment but also to human health. The continued global production of unnecessary plastics coupled with low recycling rates and poor waste management, including waste dumping from one country to another, leads to pollution of environments and compromises the quality of water and water systems.

   Every 60 seconds, the amount of plastic waste that is discharged into the ocean is equal to the capacity of one garbage truck. This issue is not limited to a specific region but is a worldwide concern. From 1950 to 2017, around 7 billion out of 9.2 billion tonnes of plastic manufactured were discarded or sent to landfills. Plastic pollution is capable of modifying ecosystems and disrupting

[3] Bhateria, R., & Jain, D. (2016). Water quality assessment of lake water: a review. Sustainable Water Resources Management, 2, 161-173.
[4] Ageel, H. K., Harrad, S., & Abdallah, M. A. E. (2022). Occurrence, human exposure, and risk of microplastics in the indoor environment. Environmental Science: Processes & Impacts, 24(1), 17-31.

natural processes, leading to a decrease in the ecosystems' resilience to climate change, which can impact millions of people's livelihoods, food production, and well-being. [5]

2. **Over-extraction of surface and groundwater resources**

Over-extraction occurs when the rate of water withdrawal from a source exceeds the rate of replenishment, leading to depletion of surface and groundwater aquifers, increased saltwater intrusion and land subsidence, with devastating impacts on agriculture, industry and urban and rural water supply and increase risks of droughts. In many ASEAN countries such as Bangkok in Thailand, Jakarta in Indonesia, Mekong Delta region in Vietnam, Phnom Penh in Cambodia and Yangon in Myanmar, the demand for water has exceeded the available supply, particularly in urban areas and during times of drought. This has led to increased pumping of groundwater and surface water, which result in over-extraction and depletion of these water resources.

3. **Inadequate or derelict infrastructure for water supply and sanitation**

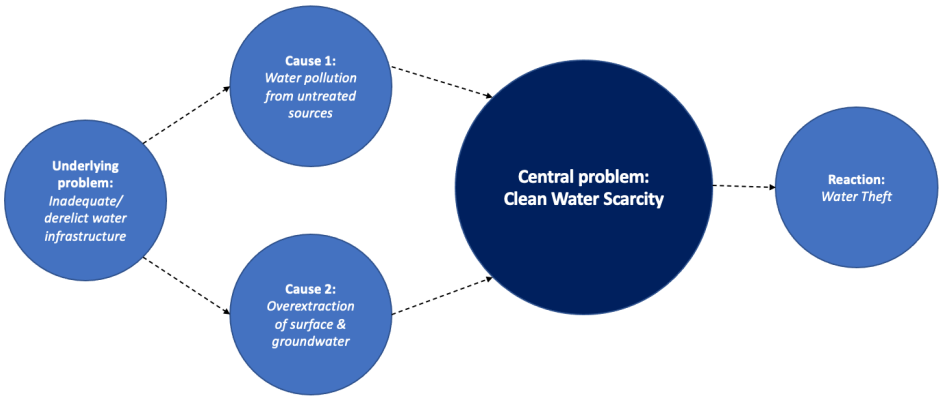
Inadequate water infrastructure refers to a situation where the water supply and distribution systems are not sufficient to meet the demand for water in a particular area. According to the World Bank report, in 2021, ASEAN countries with the least improved access to water supply and sanitation are Myanmar (36% and 27%, respectively), followed by Timor-Leste (49% and 32%), and Cambodia (58% and 21%). Examples of inadequate water infrastructure include aging or poorly maintained pipelines, inadequate water treatment and storage facilities, insufficient water storage capacity and insufficient water supply systems. Inadequate infrastructure can lead to water shortages, contamination of water sources and poor water quality, which can result in waterborne diseases and health problems. Rural areas are most impacted by access to clean water supply due to inadequate water infrastructure and people often rely on untreated surface water sources such as rivers and streams for drinking and domestic use, which increases the risk of waterborne diseases. However, urban areas are also increasingly impacted due to increased population growth exceeding the capacity of existing water infrastructure. Most countries in ASEAN are limited by budgetary resources to invest in infrastructure development and upgrades.

4. **Water theft**

Aforementioned water woes have led to the emergence of water theft, which poses serious implications for both the environment and the economy. Water theft is the illegal taking of water from public and natural sources, such as diverting water to unauthorised users, tampering with water meters or water supply systems. Water theft can exacerbate water scarcity as it reduces the amount of available water for legitimate users. This can lead to conflicts over water resources as competing users such as

[5] Liu, C., Luan, P., Li, Q., Cheng, Z., Sun, X., Cao, D., & Zhu, H. (2020). Biodegradable, hygienic, and compostable tableware from hybrid sugarcane and bamboo fibers as plastic alternative. Matter, 3(6), 2066-2079.

households, farmers and industries vie for access to a limited supply of water. In addition to its impact on water availability, water theft can also have economic implications. For example, water utilities may lose revenue due to unauthorised water use, while businesses that rely on a reliable and affordable water supply may be forced to pay more for water or suffer disruptions to their operations. Furthermore, water theft can damage the environment by causing disruptions to natural ecosystems and affecting wildlife that rely on water sources for survival. For example, diverting water from rivers or streams can impact fish populations and other aquatic species, while unauthorised pumping from groundwater sources can cause subsidence and other geological hazards.



To conclude, we have identified clean water scarcity as the central problem with respects to water security in Southeast Asia. The other causes and challenges identified, including overextraction of surface and groundwater, water pollution from untreated sources, inadequate water infrastructure and water theft are all linked as causes and reactions to this central problems.

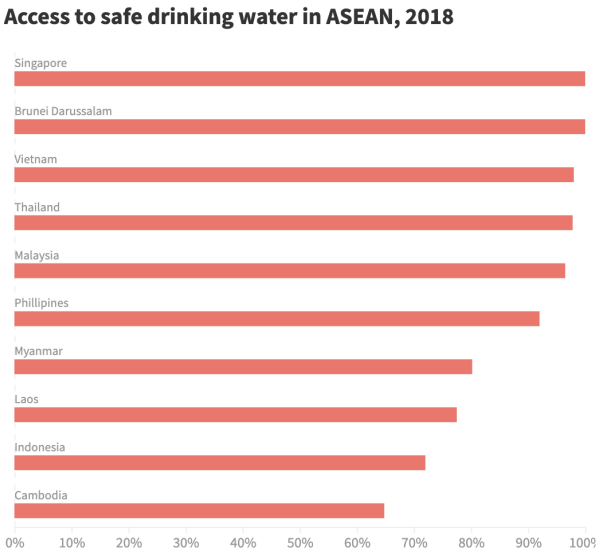
Demand for clean water in the region is on the rise due to contributing factors of population growth, rapid urbanization and industrialisation. However, the current capacity of ASEAN countries, especially the developing countries are struggling to meet these rising needs due to budgetary constraints and political priorities. With potentials of climate change further aggravating water resources in the region in the foreseeable future, we pledge that ASEAN members help each other improve water infrastructure and water management practices to ensure long term water security for all.

Regional Significance

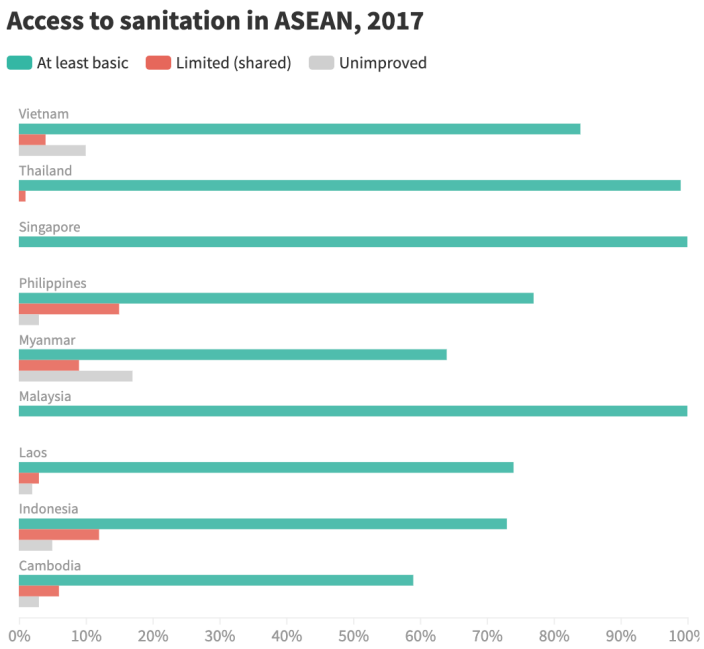
The challenge of water security is one that has been recognised as an extremely important challenge as it affects a significant number of individuals and communities across the region. More than 100 million people live without access to safe water in Southeast Asia, highlighting the importance and urgency of this issue in the region.

We recognise that the central issue of water security, alongside the myriad of symptoms and underlying causes, differentially affect the different countries in Southeast Asia.

First, we look at the issue of access to safe drinking water in ASEAN across the different Southeast Asian countries. Some countries like the Philippines, Myanmar, Laos and Indonesia have worrying statistics related to access to safe drinking water, that highlights the pressing urgency of this problem in these countries. For other Southeast Asian countries with relatively developed water infrastructure like Singapore and Brunei that enjoy an almost universal access to safe drinking water, they are still vulnerable to threats and risks that could see access to safe drinking water negatively affected. Issues like climate change affect hydrological cycles which will affect the reserves such countries draw from. For example, The quality and quantity of water from the Johor river basin which Singapore draws a significant portion of its water from, has in most recent times been threatened by increased demand, unsustainable tariffs, climate variability, and a deficit in infrastructure investment



Source: ASEAN Statistical Leaflet 2018



Source: World Health Organisation

Another critical issue affecting water security in Southeast Asia is transboundary of the region's rivers such as the Mekong River. This river traverses multiple countries, including China, Myanmar, Laos, Thailand, Cambodia, and Vietnam. Any changes in the water in one country can have impacts on the downstream countries. Furthermore, combined with the climate threats, this region will be more exposed to extreme climate events like storms, flooding, and droughts. Crop yield, especially rice, and maize, are the two main foods of people in a region and agricultural employees' livelihood security (around 65 million people) are highly dependent on irrigation.

As such, the national governments of Southeast Asia and ASEAN, the regional cooperation body, has recognised this issue as an increasingly important, urgent and strategic challenge. In the Kuala Lumpur Declaration on ASEAN 2025, water security was recognised as an important strategic pillar with governments committing to regional cooperation to advance this goal. The governments of Southeast Asia have also made individual public declarations and rolled out policies acting to safeguard water security in their own countries, highlighting its importance at a national level. Indonesia's water security plan, Rencana Pengamanan Air Minum, was rolled out to ensure clean water access and security to Indonesian communities.

Recommendations

The United Nations Sustainable Development Goals (SDGs), adopted by UN member-states including those in Southeast Asia, aim to achieve universal and equitable access to safe drinking water by 2030. With the integrated nature of the SDGs, achieving clean water and sanitation affects–and is affected by– other SDGs including poverty reduction, and good health and wellbeing among others.

Considering this and the gravity of the situation and the urgent need for action in the face of the climate crisis, we urge governments and other stakeholders to act on the following:

Water pollution from microplastics and untreated domestic, agricultural, industrial wastes and logging activities

- Revisit, strengthen, and supplement national and international policies governing industries' waste management systems and protocols to ensure that manufacturers and any business owner would be held accountable for any pollution that they would end up creating and not mitigating
- Governments must ensure adequate policies are in place to monitor and address agricultural wastes to stop any possible water contamination from such sources
- Support a high ambition global plastics treaty that is currently being negotiated by over 175 countries which is a huge opportunity to address plastic pollution from extraction of fossil fuels to end-of-use and mandate a significant reduction in production of non-essential plastics which pollute the environment and marine ecosystems.
- Develop a policy roadmap to ban low value and hard to recycle single-use plastic waste, and shift to reuse systems that would encourage redesign of packaging and delivery systems of goods without resorting to throwaway packaging.
- Uphold international agreements on waste exportation and importation that burden local waste management systems in Southeast Asia and lead to leakages of pollutants in waterways.

Over-extraction of surface and groundwater resources

- For the academe to include resource management in school curricula which would include emphasis on water security as part of environmental education
- For all stakeholders to work on promoting climate and environmental education and awareness in local communities, industries, and educational institutions
- For businesses to commit to sustainable management of shared water resources, and practice public transparency in operations, including releasing publicly accessible data pertaining to water usage and waste water management
- Conduct awareness training and capacity building in communities for proper water recycling and resource management
- For businesses—especially those which are affecting river basins across ASEAN from their business and industrial zones—to work on achieving sustainable water use, efficient energy management, and cleaner production practices

- For governments to ensure proper groundwater level mapping and annual evaluation of such mapping and adherance

Inadequate or derelict infrastructure for water supply and sanitation

- Increase funding from governments, international funding entities and the private sector, in water infrastructure in the region
- Promote incentives for private agencies to invest in water and wastewater infrastructure development and upgrades
- For international organizations and other nations to develop expertise and technology capacity of countries in the ASEAN to support water supply chain and sanitation
- Promote ground-up infrastructure to empower under-targeted communities for access to clean and secure water sources and sanitation, through working with NGOs and private sector companies to provide them with the necessary tools

Water theft

- For the public to be vigilant and report malpractices in water usage (such as water theft) and pollution
- Empower community-driven policing approaches through education and capacity building to enable community members to police and manage water theft
- Pursue regional cooperation platforms such as a joint adoption of artificial intelligence (AI) solutions and big data technology, and shared access to regional data on water resources. This entails building a regional data management system among all ASEAN countries to improve forecasting and early warning systems, as well as developing and communicating clear operating protocols.
- Policies and policy implementors must ensure that all projects undergo an environmental impact assessment

With a society that is well-educated and climate-literate, supported and powered by good governance and honest business practices, we can all join forces in practicing responsible consumption and water management, while holding all stakeholders accountable and urging each sector to take action in combatting water scarcity in the face of the three planetary crises that we are facing today—pollution, climate crisis, and biodiversity loss.

Appendix

Water pollution

In For instance, in Thailand, the discharge of untreated or partially-treated wastewater from industrial estates and factories has led to high levels of pollution in waterways, especially in the Chao Phraya River, which is a major source of drinking water for Bangkok. Similarly, in Indonesia, the discharge of untreated wastewater from textile factories has contaminated the Citarum River, which is considered as one of the most polluted rivers in the world. In Vietnam, the rapid expansion of shrimp and fish farming has led to high levels of nitrogen and phosphorus in water bodies, which have caused toxic algal blooms, reducing oxygen levels in water and leading to the death of fish and other aquatic species.

In Malaysia, the country's golden cash crop – palm oil industry – generates large amounts of wastes, including oil palm fronds, empty fruit bunches and palm oil mill effluent. The discharge of these organic wastes and untreated mill effluent into rivers and seas has led to the contamination of water sources, causing severe environmental and health problems. Another severe and persisting water pollution in Malaysia occurs in industrial estates in Johor with more than 2,000 legal factories within 359.57 km2 area, with at least 252 chemical factories. Though the effluents discharged by individual factory were within legal limit, collectively, they amount to very high when added with other illegal discharge of untreated effluents and dumping of household wastes, leading to severe water pollution in 2019, affecting some 4,000 people who sought treatment for shortness of breath, nausea and vomiting after inhaling toxic fumes evaporated from the polluted river.

In the Philippines, the mining industry is one of the primary contributors to water pollution. The mining process involves the use of toxic chemicals such as cyanide and mercury, which are discharged into water sources, contaminating rivers and other water bodies. The high levels of heavy metals in water have impacted human health, leading to serious illnesses such as cancer and neurological disorders.

In Myanmar, water quality in agriculture, manufacturing, mining, and waste management facilities are threatened due to insufficient wastewater treatment, chemical overuse, plastic waste and other substances.

Inadequate infrastructure

In Malaysia, for instance, although the country has 99% and 96% improved access to water supply and sanitation, the country is currently facing dire challenges with greater demand for uninterrupted clean water supply as its population and economy continue to grow. Most of the existing water infrastructures were built during colonial times more than 60 years ago, and are unable to cope with this increasing demand as the country battles with the effects of accelerated development. For example, these water infrastructures have experienced numerous operational failures and down-times particularly due to increased turbidity from driftwoods and garbage and high volume of industrial pollutants that are discharged into rivers and other water bodies that clog the water treatment plants especially during heavy rainfall events, resulting in water supply disruption. In addition, derelict water infrastructure such as leaking pipes or non-functioning metres have incurred loss of treated water amounting to 7.084 million litres

or RM 2 billion annually. Budgetary constraints and delays in investment have also impeded the much-needed upgrades to these dilapidated water infrastructures.

In Myanmar, inadequate water infrastructure, particularly sanitation and wastewater treatments results in intermittent water supply and low water pressure. This has led to reliance on groundwater sources, which are often contaminated with untreated chemicals from agriculture, textile, food processing, and plastic manufacturing industries. According to the World Bank, only about 20% of wastewater in Myanmar is treated before discharge. Climate change may exacerbate groundwater contamination through increased severity and frequency of floods and storms which can cause wastewater and pollutants to be carried into groundwater sources in wider reaches of the country and neighbouring ASEAN countries.

Water theft

Countries such as Malaysia, Indonesia, Vietnam and the Philippines have reported cases of water theft from public water supplies. In Indonesia, illegal wells and pipelines are being used to extract water from public supplies. In the Philippines, water theft is prevalent particularly in areas with weak enforcement of regulations and inadequate water infrastructure.

In Malaysia, water theft occurs mainly through illegal tapping of pipelines, unauthorised connections to water supply systems, and the use of private pumps to extract water from public supplies. In 2022, Malaysia's National Water Services Commission (SPAN) reported that the national average of non revenue water was 37.2%, resulting in a waste of 7.085 million litres of treated water daily with a total loss of RM 2 billion a year.

In Vietnam, water theft is a growing issue in Ho Chi Minh City, with private tanker trucks illegally extracting water from public supplies and selling it to consumers. On a regional scale, while not considered as water theft, the diversion of the upstream Mekong River for dam water retention in China has reduced the amount of downstream water in Vietnam. This has brought about devastating effects on the ecosystem and the people who rely on it. The reduced water flow affects fish migration and breeding, causing a decline in fish populations and affecting the livelihoods of fishermen. In addition, the reduction in water flow downstream also leads to saltwater intrusion, which can contaminate freshwater sources and affect agricultural productivity that Vietnamese nations rely on.