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Subregional cooperation to accelerate climate action in Asia and the Pacific for sustainable development

Note by the secretariat

Summary

Higher temperatures, the rise in sea levels and extreme weather events related to climate change will have a major impact on the region, increasing risks to economies and natural and physical assets and potentially compounding development challenges, including with respect to poverty, food and energy security, and health. Although these impacts will be felt differently across the five subregions of the Economic and Social Commission for Asia and the Pacific (ESCAP), cooperation and actions at the regional and subregional levels will be critical to accelerate action to combat climate change and its impacts.

The present document provides a brief overview of the climate challenges in each of the five subregions of ESCAP, highlights top priorities and key initiatives to address these challenges and charts a way forward to accelerate climate action in each subregion.

The Commission is invited to take note of the present document and provide guidance for the future work of the secretariat in this regard.

* ESCAP/79/1/Rev.2.

I. Introduction

1. Many of the countries most vulnerable to the impacts of climate change are located in Asia and the Pacific. Since 1970, the region has accounted for 57 per cent of global fatalities from disasters and 87 per cent of the global population that has been affected by natural hazards. Between 1970 and 2020, natural hazards in Asia and the Pacific affected 6.9 billion people and killed more than 2 million people.[1] As temperatures continue to increase, the rise in sea levels and extreme weather events related to climate change will have a major impact on the region, increasing risks and compounding development challenges, including with respect to poverty, food and energy security, and health. The subregions of the Economic and Social Commission for Asia and the Pacific (ESCAP) will be affected differently, requiring strengthened cooperation at the subregional level to address those specificities more effectively.

2. The present document provides a brief overview of the climate challenges in each of the five subregions of ESCAP, highlights top priorities and key initiatives to address these challenges and charts a way forward to accelerate climate action in each subregion as the urgency to act becomes a necessity for the region in order to avoid catastrophic loss of life in every sector of the economy.

II. Subregional cooperation to accelerate climate action in Asia and the Pacific for sustainable development

A. East and North-East Asia

1. Climate change challenges in the subregion

3. East and North-East Asia, which is home to 23 per cent of the world's population, has diverse geographical and ecological conditions, has been significantly affected by climate change and climate extremes. In the past decade, the subregion has accounted for 29 per cent of all fatalities from natural disasters and 35 per cent of the people affected in the Asia-Pacific region. Climate extremes have also placed a substantial socioeconomic and environmental burden on key sectors, such as agriculture, energy, infrastructure, transport and tourism, and the trend is continuing. In 2022, the subregion witnessed significant natural disasters that caused large numbers of fatalities, injuries and relocations, including the months-long historic drought along the Yangtze River in China, which affected over 52 million people and resulted in an estimated economic loss of $7 billion; Super Typhoon Nanmadol in Japan, which caused record-breaking storms in the south-west, with fatalities and the evacuation of millions of people; and the heaviest rainstorm in over 100 years in the greater Seoul metropolitan area. In addition, Mongolia has experienced an increase of almost 70 per cent in weather- and climate-related disasters in the past 15 years, with fatalities having increased by almost 38 per cent. In 2023, herders and local communities in Mongolia will be facing a high risk of *dzud* incidence following drought in 2022.

4. At the same time, there are urgent calls for large greenhouse gas emitters in the subregion to make great strides in climate action. In 2021, China, Japan, the Republic of Korea and the Russian Federation ranked in the

[1] *Asia-Pacific Disaster Report 2021: Resilience in a Riskier World – Managing Systemic Risks from Biological and Other Natural Hazards* (United Nations publication, 2021).

top 10 countries in the world for carbon dioxide emissions. The subregion contributed to 42 per cent of global carbon dioxide emissions from fuel consumption. Being exposed and vulnerable to climate risks and responding to the global calls for climate action, countries in East and North-East Asia are raising their climate ambitions and accelerating the transformation of development pathways towards a low-carbon and resilient post-pandemic future.

2. Top priorities and key initiatives to address climate challenges

5. The countries in East and North-East Asia have developed national strategies and road maps, promoted innovations and green finance, and enhanced partnerships among public and private stakeholders at regional, national and subnational levels to address climate change.

6. All six countries in East and North-East Asia have committed to advancing their climate agenda. With updated nationally determined contributions under the Paris Agreement, China, Japan, the Republic of Korea and the Russian Federation have pledged to achieve carbon neutrality by 2050 or 2060. Considering the critical roles of the four largest emitters in shaping global decarbonization, their raised climate ambitions can generate strong, long-term political signals towards achieving a low-carbon transition, which would catalyse climate actions across the subregion and beyond. In addition, Mongolia announced higher mitigation targets with conditional measures to achieve a 27.2 per cent reduction in total greenhouse gas emissions by 2030 based on the level in 2010. The Democratic People's Republic of Korea also updated its nationally determined contributions with a targeted reduction of 35.8 million tons of greenhouse gas per year by 2030.

7. In line with their national climate frameworks and strategies, and amid the coronavirus disease (COVID-19) pandemic recovery, countries in the subregion have started to develop clear road maps and specific measures to accompany their pledges for the concrete implementation of actions. For example, China has developed the "1+N" policy framework to reach peak carbon emissions before 2030; Japan has developed a regional decarbonization road map to assist in subnational decarbonization and revitalization; Mongolia has targeted the energy, agriculture and industry sectors for mitigation efforts and launched the national "One billion trees by 2030" campaign to reduce the impact of climate change; and the Republic of Korea is in the process of developing national and local carbon-neutrality master plans.

8. Moreover, countries in East and North-East Asia have promoted innovations in technology and finance to combat climate change. In particular, China, Japan and the Republic of Korea have already invested in technological innovations and innovative financial mechanisms to better support their national targets. The leadership and collaboration of countries in the subregion are evermore needed for facilitating and utilizing innovative approaches and solutions in the energy, transport, industry and building sectors (such as geospatial technologies, remote sensing, artificial intelligence, mathematical modelling and data-driven approaches) to support climate actions in the subregion and beyond.

9. As no country can fix climate change on its own, countries in East and North-East Asia recognize the need for cooperation and partnerships at the subregional, regional and international levels in boosting innovations and facilitating the implementation of scaled-up and cost-effective measures for climate mitigation and adaptation. In this regard, countries in the subregion collaborate through, among others, the North-East Asian Subregional

Programme for Environmental Cooperation to address environmental and climate challenges. Moreover, member States of the North-East Asian Subregional Programme for Environmental Cooperation, noting the importance of global and regional cooperation on climate issues, have been engaged in a process to renew their commitments to subregional environmental cooperation. The Programme is aimed at promoting collaborative efforts and enhancing subregional cooperation mechanisms to better address climate and environmental challenges in East and North-East Asia and beyond.

10. ESCAP has promoted substantial discussions on low-carbon transformation and city-led climate action aligned with the global climate agenda. Together with the Trilateral Cooperation Secretariat and the Climate Action Team of the Executive Office of the Secretary-General, it held high-level forums on the carbon neutrality goals of China, Japan and the Republic of Korea in 2021 and 2023. At the forums, in-depth discussions were held on the national and subnational strategies, practices and experiences of the three countries with stakeholders from and beyond the subregion and on specific pathways to achieve carbon neutrality in the energy and transport sectors.

11. Through the North-East Asian Subregional Programme for Environmental Cooperation, ESCAP also held, jointly with Incheon Metropolitan City, Republic of Korea, and various partners in the subregion, the International Forum on Low-Carbon Cities in 2021 and the Second International Forum on Low-Carbon Cities in 2022. At the Second Forum, Incheon Metropolitan City announced its pledge to be carbon neutral by 2045, five years ahead of the national target. The Forum successfully demonstrated city-level leadership in advancing the journey to achieve low-carbon and resilient development and raised awareness of the need for more concrete city-led climate actions.

12. The power sector, being the largest source of greenhouse gas emissions, is at the centre of achieving the carbon neutrality goals of member States. A key climate-action strategy proposed in the subregion is to lower the carbon footprint of the power sector by tapping into the vast renewable energy resources in North-East Asia and integrating these into cross-border power grids. ESCAP is working closely with partners, including the Greater Tumen Initiative, on building the capacity of member States on policies and regulatory frameworks to increase renewable energy uptake in the power sector and strengthening dialogue on power grid interconnection using renewable energy through established platforms, such as the North-East Asia Regional Power Interconnection and Cooperation Forum.

3. Charting a way forward

13. This year marks a turning point to reflect on and assess the subregional, regional and global progress made in tackling the climate crisis, with the global stocktake under the Paris Agreement taking place during the twenty-eighth session of the Conference of the Parties to the United Nations Framework Convention on Climate Change and the Climate Ambition Summit to be convened by the Secretary-General in September. Seizing the momentum and moving forward, all countries in the subregion and beyond need to concretize specific mitigation and adaptation pathways to advance climate actions and turn their climate ambitions into reality.

14. Doing so also requires broader partnerships for climate action, engaging all stakeholders, including the private sector, young people and civil society, and sharing knowledge and experiences to achieve just transitions to renewable energy, carbon neutrality, climate justice and solidarity.

B. North and Central Asia

1. Climate change challenges in the subregion

15. Climate change trends and challenges are interlinked with environmental, economic and social vulnerabilities in North and Central Asia. In recent years, the subregion has experienced increasingly severe and frequent heatwaves and droughts, which have exacerbated water shortages, adversely affecting food and energy security and hampering recovery from the COVID-19 pandemic.

16. The total greenhouse gas emissions of all five Central Asian countries (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan) are approximately 1 per cent of global emissions, 80 per cent of which originate from the energy sector.[2] The subregion remains highly dependent on fossil fuels, with Kazakhstan, Turkmenistan and Uzbekistan having the largest carbon footprints and being among the top 100 countries in the world for carbon dioxide emissions from heavy industries.[3] The share of renewable energy has been relatively low, despite the subregion's rich wind, solar and hydropower resources.

17. Climate change is worsening the subregion's water scarcity, particularly for countries with territory in the Aral Sea basin, namely, Afghanistan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. According to the Food and Agriculture Organization of the United Nations (FAO), countries in Central Asia are expected to experience high to very high levels of water stress by 2040.[4] For example, the current water deficit of Uzbekistan could increase to 7 billion m^3 by 2030 and up to 15 billion m^3 by 2050, based on calculations from the Asian Development Bank.[5]

18. Increasing aridity, desertification, dust storms and biodiversity loss expose the subregion to significant health risks and social vulnerabilities. The population confronts degrading water quality, respiratory diseases and poor diets owing to the loss of fish from the Aral Sea and job losses from the disappearance of fisheries. The subregion's carbon-intensive energy, transport, household, industrial and agricultural activities have also created air pollution and put the population at risk of chronic respiratory and cardiovascular diseases. Women and children are the most vulnerable to interlinked environmental and health risks.

19. Water scarcity highlights the need to strengthen subregional cooperation in managing transboundary water resources for agricultural irrigation and efficient energy use. The costs of insufficient cooperation in the agriculture and energy sectors, and limited finance amount to more than

[2] For additional information, see United Nations Framework Convention on Climate Change, "Report from the Regional Dialogue on Carbon Pricing (REdiCap) in Central Asia", 26–27 February 2021.

[3] Anh Tru Nguyen, "The relationship between economic growth, energy consumption and carbon dioxide emissions: evidence from Central Asia", *Eurasian Journal of Business and Economics*, vol. 12, No. 24 (November 2019), pp. 1–15.

[4] Tamara van 't Wout, Gamze Celikyilmaz and Carmen Maria Arguello Lopez, *Policy Analysis of Nationally Determined Contributions in the Europe and Central Asia Region* (Budapest, FAO, 2021).

[5] "By the numbers: climate change in Central Asia", 23 November 2022.

$4.5 billion per year for Central Asia, while better water policy could boost Central Asian gross domestic product (GDP) by more than 10 per cent.[6]

20. As the subregion consists mainly of landlocked developing countries, connectivity issues compound climate challenges. Growing transport demand will incur considerable greenhouse gas emissions. Ageing power transmission and inadequate insulation cause significant energy waste. A lack of broadband access and the digital divide worsen the uneven impacts of climate change.

2. Top priorities and key initiatives to address climate challenges

21. Countries in North and Central Asia urgently need coordinated action and international support to accelerate climate adaptation, mitigation and resiliency efforts. Through partnerships, dialogues and capacity-building programmes, ESCAP enables better coordination among international, regional and national actors to address interlinked environmental, economic and social vulnerabilities in the subregion, in line with the priorities described in the paragraphs below.

22. With climate change threatening agricultural productivity, livelihoods and water security, there is an urgent need to enhance the subregion's capacity to respond and adapt to climate-induced impacts. Adapting proactively to a changing climate will help to build resilient economies, promote strong growth, and protect lives and livelihoods. Within this context, ESCAP carries out research and provides analytical support to enable countries to better manage inland water disasters in the Aral Sea basin through adaptation and risk management and to better address transboundary risks in national adaptation plans.

23. Meeting rising energy demand and achieving energy sector development that is environmentally friendly, socially sound and economically feasible presents multiple challenges. Although countries have developed mitigation policies on emission reduction in the energy sector and strategies for renewable energy infrastructure development, there is scope to better utilize the subregion's diverse and abundant green energy resources to promote investment in energy efficiency and connectivity infrastructure. While renewable energy capacity has increased in the subregion, the share of renewable energy in the total energy supply remains small.

24. As of 2022, all countries in the subregion have made carbon reduction pledges, with five countries having made carbon neutrality pledges (Armenia, Kazakhstan, Kyrgyzstan, Russian Federation and Uzbekistan). The Energy Strategy 2030 developed by the Central Asia Regional Economic Cooperation Programme provides a long-term strategic framework on shifting to low-carbon energy sources and building resilience against climate-induced hazards. The thematic working group on water, energy and environment of the United Nations Special Programme for the Economies of Central Asia, supported by ESCAP and the Economic Commission for Europe, also provides a unique platform for countries to discuss and promote best practices in clean energy development.

[6] For additional information, see Adelphi and Central Asia Regional Economic Cooperation Programme, *Rethinking Water in Central Asia: the Costs of Inaction and Benefits of Water Cooperation* (Berlin, 2017); and World Bank, *High and Dry: Climate Change, Water, and the Economy* (Washington, D.C., 2016).

25. To address transboundary water-energy challenges, several organizations in the subregion, including the International Fund for Saving the Aral Sea, have been established and, in 2021, Kazakhstan proposed the creation of an international water and energy consortium.

26. To ensure more effective policy responses, it has been recognized that there is a need for an integrated approach to addressing the converging water availability and quality problems, air pollution, decreasing food security, biodiversity loss and the associated public health risks in the subregion. As such, in 2022, the ministers of health of Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan endorsed the Road Map for Health and Well-being in Central Asia (2022–2025), by which they noted the need to adapt the World Health Organization health systems resilience toolkit on post-disaster recovery to the subregional context. The Asia-Pacific Risk and Resilience Portal further incorporates health-related data to strengthen the capacity of countries to address the disaster-climate-health risk nexus.[7]

27. Effective connectivity corridors have a strong potential to reduce transport and industrial emissions in North and Central Asia. In this context, the capacity of countries to develop sustainable and inclusive policies and mechanisms for transboundary infrastructure connectivity was strengthened through the regional economic cooperation and integration initiative of ESCAP. Having integrated regional energy infrastructure and power grids could release capital for investment in renewable energy and increase energy efficiency gains for both renewable and non-renewable energy. The Regional Road Map on Power System Connectivity: Promoting Cross-border Electricity Connectivity for Sustainable Development provides guidance and supports member States in regional coordination in this regard. As part of the Action Plan for Implementing the Asia-Pacific Information Superhighway Initiative 2022–2026, the Digital Solutions Centre for Sustainable Development proposed by Kazakhstan aims to coordinate digitalization to address climate challenges in, for example, agriculture, water and energy management and to promote partnership with the Central Asian Climate Information Platform.

28. Adopting climate risk accounting and vulnerability accounting and taking into account subregional climate scenarios would help countries to improve financial resilience and develop risk-informed investment plans to build disaster and climate resilience across the subregion. In 2022, ESCAP collaborated with the United Nations Development Programme country teams and the Institute on Global Climate and Ecology to build capacity for developing a digitized online system to collect greenhouse gas emissions inventory data at all levels. The Disaster-related Statistics Framework of ESCAP is also aimed at accelerating and supporting disaster-related statistics for planning, analysis and reporting, enabling policymakers to deepen their understanding of climate-induced disaster risks.

29. As countries in the subregion accelerate the green transformation, it is vital to enhance access to and increase adequate finance in order to move towards achieving climate objectives. Even with the rapid increase in private investments in recent years, climate finance needs remain large, while there is considerable uncertainty around the size of mitigation and adaptation needs. There is strong potential to align national financial infrastructure, including climate finance reporting and the design of financial instruments and regulations, with international best practices. To this end, the work of ESCAP on mobilizing innovative finance in the subregion includes technical

[7] See https://rrp.unescap.org/.

cooperation to facilitate access to and mobilization of climate finance for the implementation of priority mitigation and adaptation needs in line with countries' nationally determined contributions. It also encompasses capacity-building to address existing gaps in renewable energy investment and access to technologies.

3. Charting a way forward

30. The thematic working group on water, energy and environment of the United Nations Special Programme for the Economies of Central Asia provides a unique platform to address climate challenges through regional dialogue and cooperation, joint action and integrated initiatives. The regional road map for implementing the 2030 Agenda for Sustainable Development in Asia and the Pacific also identifies climate change as a major challenge still faced by the region. Both promote effective climate action considering the subregion's landlocked context and intertwined water and energy issues. At the subregional level, the adoption of a climate agenda by the Eurasian Economic Union in 2021, and its forthcoming road map, is another promising initiative to ensure coordinated approaches to address climate risks.

31. Inclusive and meaningful multi-stakeholder participation is an important channel to tackle climate challenges. Voluntary national reviews provide a valuable framework for a comprehensive and strategic review of government approaches to climate action in the context of the implementation of the Sustainable Development Goals.

32. Lastly, innovative, catalytic partnerships with private finance will accelerate the clean energy transition by attracting climate investment. The development of sound climate-related policies will be equally essential in building a coherent subregional financial architecture and mobilizing private investment.

C. Pacific

1. Climate change challenges in the subregion

33. The Pacific small island developing States contribute less than 0.03 per cent of the world's total greenhouse gas emissions but are among the most vulnerable to climate impacts. They are made up of a land area of only 500,000 km^2, including low-lying atolls that do not reach more than a few metres above current sea levels. In addition to physical characteristics, their remoteness and lack of necessary infrastructure exacerbate their vulnerabilities. There has also been an increase in climate-related hazards, such as flooding, droughts, storms and unusually high tides.

34. Over recent decades, these countries have witnessed life-changing impacts on their environment, as well as climate change, and rising frequency and growing intensity of natural disasters, increasing the vulnerability of populations to cascading hazards. For example, Tropical Cyclone Pam in Vanuatu caused economic loss and damage estimated at 64 per cent of GDP in 2015, while the percentage of the population in Fiji suffering from food insecurity increased from 4.2 per cent in December 2020 to 11.4 per cent in February 2021 due to Tropical Cyclone Ana in late January 2021. In the midst of the COVID-19 pandemic, Tropical Cyclone Harold, a category 5 cyclone, hit Fiji, Solomon Islands, Tonga and Vanuatu in April 2020, causing widespread destruction. Furthermore, 2022 marked the third consecutive year of La Niña in the Pacific, the first time that this has happened since 1950. As

seen in Kiribati, Papua New Guinea and Tuvalu, countries in the Pacific face the risk of further droughts, as well as flooding, due to the effects of La Niña.

35. The climate events that occurred during the COVID-19 pandemic between 2020 and 2022 demonstrated how intersecting natural and biological hazards can prolong the health and economic disruptions arising from disasters. Climate-related disaster events are affecting infrastructure, crops and livelihoods, and causing climate change-induced displacement, especially among the most vulnerable population groups in these Pacific communities.

2. Top priorities and key initiatives to address climate challenges

36. In the Pacific, there has been an overall focus, including through subregional cooperation, on integrating climate change considerations across various sectors to foster synergies between different policy areas in order to advance climate goals. Limiting global warming to 1.5°C above pre-industrial levels is also a key ambition in the Pacific. Accelerating climate action in four thematic areas – disaster resilience, ocean and climate synergy, climate-smart and digital trade, and energy transition – would build resilience to climate change. ESCAP is working with subregional organizations to pool experiences and resources in these areas to support Pacific small island developing States.[8]

37. On disaster resilience, key priorities are upgrading multi-hazard early warning systems, using frontier technologies and digital solutions to drive transformative adaptation, and enhancing multisectoral approaches to accelerate transformative adaptation.

38. The Framework for Resilient Development in the Pacific: An Integrated Approach to Address Climate Change and Disaster Risk Management, adopted by Pacific Islands Forum leaders, provides guidance and support for building resilience to climate change and disasters in the Pacific. The Framework is being implemented through the Pacific Resilience Partnership, an alliance of stakeholder groups and communities of practice working towards the collective goal of building climate and disaster resilience in the Pacific. The Pacific Catastrophe Risk Insurance Company provides rapid liquidity to affected members, helping countries to respond quickly in the immediate aftermath of a natural disaster event and sustain hard-won development gains.

39. ESCAP has piloted early warning and impact forecasting systems in Fiji, Papua New Guinea and Samoa through the Regional Integrated Multi-hazard Early Warning System for Africa and Asia and is working with Pacific small island developing States to address gaps in the effectiveness of early warning systems. Strong subregional partnership mechanisms, such as the Typhoon Committee and the Panel on Tropical Cyclones, established by ESCAP and the World Meteorological Organization, could also be established in the Pacific. The Asia-Pacific Risk and Resilience Portal can be utilized to make risk-informed decisions that span multiple sectors in the subregion.

40. On ocean and climate synergy, key priorities are strengthening links between ocean and climate change science, building research capacity in the subregion, and expanding and facilitating access to data in order to address issues pertaining to climate change and ocean management.

[8] *Pacific Perspectives 2022: Accelerating Climate Action* (ST/ESCAP/3062).

41. The Office of the Pacific Ocean Commissioner, established within the Pacific Islands Forum Secretariat, provides advice on cross-sectoral ocean issues, supports subregional preparatory processes to review and develop ocean policy, identifies emerging issues and reports progress under Sustainable Development Goal 14 (Life below water). An important output of the Office is the *Blue Pacific Ocean Report 2021*, which contains an examination of progress in key regional and international ocean initiatives in major ocean sectors and proposes strategies to facilitate effective subregional and sectoral collaboration. Similarly, the Pacific Climate Change Centre, hosted at the secretariat of the Pacific Regional Environment Programme, is the subregional centre of excellence for climate change information, research and innovation. It builds capacity in adaptation, mitigation, climate services and project development, and promotes applied research on these topics.

42. Pacific small island developing States have established marine protected areas to help to maintain ecosystem services, including carbon uptake and storage. In 2008, Kiribati established the Phoenix Islands Protected Area, a 408,250 km^2 expanse of marine and terrestrial habitats in the southern Pacific Ocean. Others have followed suit and established their own protected areas, including Palau, whose protected areas cover 80 per cent of its waters.

43. ESCAP plays a vital role in helping to translate ocean science into effective policymaking. It has been increasingly collaborating with various subregional agencies to create and strengthen policies and initiatives.

44. On climate-smart and digital trade, key priorities are providing increased access to the Internet and digital services, integrating digital and energy policies, removing tariffs on goods and services that support the environment, promoting cross-border paperless trade procedures, and greening the logistics and transportation sectors. In this context, ESCAP has worked with Tuvalu on its national trade development strategy for 2022–2026. National strategies are key to advancing the implementation of policies related to climate change and digital trade. However, climate-smart considerations in the national trade policies and overarching digital policies of Pacific small island developing States are currently scarce.

45. On energy transition, key priorities are setting ambitious targets to achieve Sustainable Development Goal 7 (Affordable and clean energy) across the subregion, integrating energy access policies with other sectoral agendas, supporting capacity-building for policy design and planning, and monitoring and integrating new technologies into energy transition policies. Many countries have implemented measures such as tariff policies to reduce the cost of energy-generating technologies and goods; these policies include reducing or eliminating the tariffs for solar panels, batteries, turbines, windmills and other goods needed for deploying renewable energy projects.

46. To further support these efforts, the Office of the Pacific Energy Regulators Alliance, established by the energy regulators of Samoa, Tonga and Vanuatu with the assistance of the Pacific Community, promotes the modern regulation of energy utilities in the Pacific and its platform delivers capacity-building, enables the exchange of knowledge and skills, and helps countries to address common challenges. Similarly, in August 2021, Pacific Islands Forum leaders endorsed the Framework for Energy Security and Resilience in the Pacific 2021–2030. Through the Framework, Pacific leaders envision a future where Pacific people have universal access to secure, robust, sustainable and affordable electricity, transport, fuel and household energy services.

47. In this regard, ESCAP developed the national expert Sustainable Development Goal tool for energy planning to support the development of national road maps to achieve Goal 7. The tool has been used to develop such road maps for Fiji and Tonga, while a road map is being developed for the Federated States of Micronesia and another project is being planned in Kiribati.

3. Charting a way forward

48. There are several opportunities for strengthening cooperation in the subregion on climate action. On integrating the disaster-climate-health nexus, the Asia-Pacific Risk and Resilience Portal and existing subregional cooperation architecture are key enablers. The Portal, with climate risk profiles on adaptation priorities for the subregion, is also an important initiative in this regard.

49. On ocean and climate synergies, the subregion should work collectively to mobilize financial resources to strengthen cooperation on both national programmes and transboundary initiatives in ocean science and technology.

50. On climate-smart and digital trade, many Pacific small island developing States have begun to take concrete steps towards facilitating digital trade through national strategies. Governments can have access to support by becoming parties to the Framework Agreement on Facilitation of Cross-border Paperless Trade in Asia and the Pacific, as another step in this direction.

51. On energy transition, policymakers should collaborate through existing subregional initiatives to support the scaling up of local capability and to align the energy transition approach of States through collective advocacy.

52. Additional resources need to be mobilized for the new funding arrangement that has been established to respond to loss and damage. Regional mechanisms to develop and better understand the methodological aspects of loss and damage should be developed to support the seamless integration of the new funding arrangement in the context of the subregion.

53. Lastly, ESCAP supports the 2050 Strategy for the Blue Pacific Continent, adopted in July 2022. The Strategy provides an important opportunity for urgent and appropriate action to build resilience and support the achievement of the Sustainable Development Goals.

D. South-East Asia

1. Climate change challenges in the subregion

54. South-East Asian countries have been exposed to climate change-related shocks such as floods, droughts, urban heat, and biodiversity and habitat losses, with significant economic consequences. In 2022, heavy rain and strong winds swept across the Lao People’s Democratic Republic, Myanmar, Thailand and Viet Nam, causing floods and landslides that resulted in heavy casualties and extensive damage. Climate change adds great complexity and uncertainty to the global environment, dramatically escalating losses from natural hazards and related biological hazards.

55. South-East Asian economies are set to rebound in 2023 from the impact of the COVID-19 pandemic, but achieving full recovery requires sustainable development strategies that include climate- and environment-related considerations and policy options.

56. For decades, urbanization has been a crucial driver of economic growth in South-East Asia, with 80 per cent of the subregion's GDP coming from megacities like Jakarta, Manila and Bangkok. Currently, half of the population in South-East Asia lives in urban areas, with an additional 70 million citizens forecasted to live in cities by 2025. However, urbanization also poses challenges related to climate change and environmental pollution, economic efficiency (linked to rising traffic congestion), health and cultural heritage. Unrestrained urbanization also contributes to global warming in a significant manner.

57. It is thus not surprising that a few of the most polluted cities in the world are in the subregion. Air pollution, for one, has led to serious health impacts and damaged quality of life, causing serious long-term socioeconomic implications. Furthermore, plastic waste, which is generated in abundance, threatens ecosystems and livelihoods across South-East Asian cities and communities.

58. At the same time, rising temperatures and changing rainfall patterns due to human-induced climate change have increased the frequency and severity of droughts. Over the past 30 years, droughts have affected more than 66 million people in South-East Asia.[9] This accounts for 17 per cent of the total number of people in the region who are affected by natural hazards – in ranking, after storms (44 per cent) and floods (34 per cent).

59. Not only is climate change detrimental to planetary health but it is a significant public health risk factor for older persons, children and the poor. Amid the vicious circle of disaster, climate and health challenges, they continue to be the most vulnerable groups.

2. Top priorities and key initiatives to address climate challenges

60. South-East Asian cities need urban development strategies not only to sustain the momentum of trade and business activities, of provision for inclusion and of energy services, but also to mitigate and adapt to the impacts of climate change. In countries with expanding economies and growing energy demands, enabling regulatory and financing frameworks to attract private investment in all sectors can help to reduce the costs of clean energy projects.

61. Building the resilience of countries and populations is vital to accelerate climate action. Pathways to shape systemic resilience to multi-hazard and interregional risks can be developed through regional and subregional cooperation mechanisms, such as the cooperation framework between the Association of Southeast Asian Nations (ASEAN) and the United Nations. Strengthened cooperation in research, analysis and policy formulation through the ASEAN Committee on Disaster Management and the ASEAN Centre for Sustainable Development Studies and Dialogue can assist countries in addressing gaps in their adaptive, anticipatory and transformative capacities. In this regard, ESCAP is further developing various workstreams of the framework to support the implementation of a regional plan on disaster management.

62. As not all ASEAN member States have air pollution monitoring systems and the capacity to identify sources of pollutants and analyse pollution characteristics and patterns, difficulties have arisen in the understanding and comparison of situations in ASEAN countries. Collaboration to support an

[9] *Ready for the Dry Years* (United Nations publication, 2020).

initiative on clean air for a sustainable ASEAN between Seoul National University, the National Institute of Environmental Research and the World Health Organization is aimed at increasing capacity to use digital technologies and digital data for monitoring and mitigating air pollution and its negative impact on people in ASEAN countries. Ultimately, the information from the project can be processed to draft more effective national environment and information and communications technology policies, development plans and strategic priorities to address air pollution in the subregion.

63. Thematic bonds, such as green, social, sustainability and Sustainable Development Goal-aligned bonds, can fund projects that generate environmental and social benefits and help to mobilize commercial investment towards clean energy and green industries and jobs. The work of ESCAP on finance for sustainable development includes formulating pathways to enhance thematic bond issuances in ASEAN countries, the analysis of the green and sustainable financial market in Cambodia, a sustainable bond issuance case study in Thailand, and training on thematic bond-issuance best practices and standards. As countries in the subregion are keen to accelerate their green transformation, they can leverage thematic bonds to catalyse the transformation and take their respective economies to the next level of sustainable development.

64. Transitioning the energy sector to achieve the 2030 Agenda for Sustainable Development and the objectives of the Paris Agreement presents a complex and difficult task for policymakers. It requires sustaining economic growth while responding to increased energy demand and reducing emissions. To initiate this process, the national expert Sustainable Development Goal tool for energy planning can assist policymakers to make informed policy decisions to support the achievement of Goal 7 targets, as well as emission reduction targets. Some South-East Asian countries are already developing their Goal 7 road map, with others soon to follow.

65. Investment in climate action remains low and unevenly distributed across the subregion, particularly in sustainable energy projects. Boosting investment, particularly foreign direct investment (FDI) flows, into sustainable energy projects is critically important to securing the subregion's future energy security. The secretariat will be commencing work in the subregion to develop a regional investment promotion action plan aimed at boosting FDI flows in sustainable development projects. The action plan will be focused on relevant sectors in which the subregion as a whole has a competitive advantage and countries in the subregion could work jointly to streamline investment promotion activities in particular value added segments of the value chain across a sector. For instance, and related to sustainable energy as whole, one potential sector that the action plan may focus on is electric vehicle production, as many ASEAN countries are involved in its value chains. Through the action plan, investment promotion activities would be developed for each country involved in the initiative in order to promote investment in their particular segment and to boost overall FDI flows to the subregion as a whole. Such an initiative could strengthen the subregion's intra-trade and investment efforts, as well as deepen its sustainable participation in regional and global value chains.

66. The transport sector is a large contributor to climate change, being chiefly responsible for greenhouse gas emissions. Challenges to freight sustainability in South-East Asia include the rapidly rising volumes of trade and the associated high levels of carbon emissions, as well as significant logistics costs and a fragmented logistics industry. In this context, ESCAP has supported greater rail interoperability in ASEAN countries by strengthening

institutional framework on railway cooperation among ASEAN member States and highlighting the opportunities for a shift towards a more sustainable freight system.

67. Future climate impacts will threaten the well-being and quality of life of all citizens, but certain people will be affected more than others, including children, older persons, persons with disabilities, the poor and women. Climate affects access to food, water, sanitation, housing, and health and social care, as well as work and mobility. Through various policy initiatives, ESCAP promotes the active participation of all groups to contribute to climate action and to protect the environment for future generations, and the right to a safe, clean, healthy and sustainable environment.

3. Charting a way forward

68. The Plan of Action to Implement the Joint Declaration on Comprehensive Partnership between ASEAN and the United Nations (2021–2025) and the Complementarities Road Map (2020–2025) are important frameworks to address climate change and other environmental issues. Moreover, policy dialogues through this South-South cooperation can address the challenges and opportunities in developing multi-hazard frameworks for ASEAN, including in the context of implementing the health aspects of the Sendai Framework for Disaster Risk Reduction 2015–2030. Other prospective actions are implementing the ASEAN Declaration on the Strengthening of Adaptation to Drought through the ASEAN Regional Plan of Action for Adaptation to Drought 2021–2025 and leveraging the Asia-Pacific Risk and Resilience Portal.

69. Partnerships with the private sector, civil society and other stakeholders in South-East Asia are important for tackling climate change issues. The voluntary national review process, for instance, remains a valuable tool for stakeholder engagement to better align policy implementation with societal needs and expectations. It will also contribute to long-term sustainability and help to identify priority environmental issues and improve policy decision-making and accountability.

70. Faced with multiple crises and the urgency to raise capital for a climate-resilient world, the time is now for Governments of and financial institutions in South-East Asian countries to accelerate climate finance and investment opportunities that support the hastening of access to clean energy, particularly to meet climate commitments and targets. Partnerships with private sector entities will increase investment in the subregion’s inclusive, resilient and sustainable future.

E. South and South-West Asia

1. Climate change challenges in the subregion

71. Countries in South and South-West Asia are some of the most vulnerable to climate-induced and other natural and biological hazards. A declining share of green energy and emissions from transport, fossil fuels, industry, urbanization and construction-related activities are depleting the ozone layer and increasing air pollution. The subregion contributes about 11.5 per cent of total global greenhouse gas emissions that drive climate

change.[10] Seven of the 10 countries in the subregion are ranked among the top 30 countries most affected by extreme weather events listed in the Global Climate Risk Index for 2019, produced by Germanwatch.[11] ESCAP estimates that, with current policies in place and with current emissions trajectories, average annual losses in the subregion are about $160 trillion, or 3.4 per cent of subregional GDP, which increases up to 6.8 per cent of subregional GDP under a future worst case scenario.[12]

72. The geographic and ecological diversity of South and South-West Asia presents a variety of climate change challenges. Rising temperatures in the Hindu Kush contribute to melting glaciers and snow, which changes river discharge patterns, water availability and the frequency of glacial lake outbursts. Floods, landslides and the sedimentation of riverbeds affect downstream communities, resulting in the loss of lives and livelihoods, as well as damage to houses, roads and hydropower infrastructure. FAO estimates that Himalayan snow and ice, which provide vast amounts of water in Asia, will decline significantly by 2030.[13]

73. Increased frequency and intensity of droughts, excessive rainfall and floods have a major impact on declining crop production, increased pests and disease infestations, and higher livestock mortality. Poor and vulnerable households that depend on rain-fed agriculture are disproportionately affected. In 2022, Pakistan witnessed unimaginable devastation caused by climate change with the onset of drought-like conditions that hardened soils, followed by unprecedented rains that resulted in disastrous flooding, affecting 33 million people across 2 million acres of the country. Damage and economic losses are estimated to have exceeded $30 billion, and $16 billion is needed for a resilient recovery. In semi-arid areas, intensified droughts and greater occurrences of extreme weather events increase vulnerability to sandstorms, dust storms and forest fires, which affect the economy, human health and the climate. In low-lying deltas and coastal areas of the subregion, rising sea levels are increasing soil erosion, salt content and saltwater intrusions, affecting the quality of groundwater, the depletion of water levels and agricultural production. Ocean warming is damaging coral reefs, which affects the livelihoods of people working in the tourism and fishery sectors.

2. Top priorities and key initiatives to address climate challenges

74. The priorities to accelerate climate action in South and South-West Asia are: (a) strengthening disaster risk management and early warning systems to deal better with increasing incidences of climate-induced disasters; (b) accelerating a just energy transition that reduces carbon emissions, optimizes renewable energy and improves access to renewable energy for remote communities and low-income households; (c) enhancing the sustainability of transport systems; (d) promoting climate-resilient agriculture;

[10] Climate Watch, “Global historical emissions”, Historical GHG Emissions database. Available at www.climatewatchdata.org/ghg-emissions?chartType=percentage&end_year=2019&start_year=1990 (accessed on 16 January 2023).

[11] David Eckstein, Vera Künzel and Laura SchäferMarie, *Global Climate Risk Index 2021: Who Suffers Most from Extreme Weather Events? Weather-Related Loss Events in 2019 and 2000–2019* (Bonn, Germany, Germanwatch, 2021).

[12] Asia-Pacific Risk and Resilience Portal. Available at https://rrp.unescap.org/ (accessed on 9 January 2023).

[13] FAO, “Climate-smart agriculture” Available at www.fao.org/climate-smart-agriculture/overview/en/.

and (e) strengthening capacities to mobilize finance for inclusive and green economic transition.

75. With the increasing severity and frequency of natural disasters, the need for robust disaster risk reduction and management systems in the subregion is important. ESCAP has been fostering regional cooperation in disaster risk reduction and the resilience building of member States. For example, capacities for impact-based forecasting are being supported through regional climate outlook forums, and the Typhoon Committee and the Panel on Tropical Cyclones established by ESCAP and the World Meteorological Organization. ESCAP also provides member States with high-quality analysis, strategy and policy options, and training to enhance resilience and adaptation to multiple disasters and promotes the application of space technology and Geographic Information Systems for disaster risk reduction and inclusive and sustainable development. The Asia-Pacific Disaster Resilience Network, established by ESCAP, supports integrated multi-hazard early warning systems, and the Asia-Pacific Risk and Resilience Portal deepens policymakers' understanding of cascading risks from the disaster-climate-health nexus. All of these help to inform decision-making through the use of estimations of losses and costs of adaptation at national, subregional and regional levels. Subregional organizations, such as the South Asian Association for Regional Cooperation (SAARC), through its Disaster Management Centre, offers capacity-building and training to its member States for holistic disaster risk management. All South Asian countries are members or collaborating members of the Regional Integrated Multi-hazard Early Warning System for Africa and Asia, which provides regional early warning services and capacity-building in end-to-end early warning of tsunami and hydrometeorological hazards.

76. Electricity and heat generation is the largest greenhouse gas-emitting sector and contributes to about 31 per cent of total emissions in the subregion.[14] Reliance on fossil fuels needs to be reduced with the greater incorporation of renewables in the subregional energy mix. While investment in renewable energy is increasing, the share of renewable energy out of the total share of energy consumption has decreased over the years due to even larger increases in investments within the non-renewables sector. The subregion has reserves of wind power in Sri Lanka, hydropower in Bhutan and Nepal, and solar energy in India. The greater integration of electricity markets provides opportunities to decarbonize the energy sector, brings stability to volatile prices, lowers energy costs and mitigates climate change.

77. ESCAP has been supporting member States in developing national Sustainable Development Goal 7 road maps that assess energy systems in a country and present a range of opportunities to achieve Goal 7 targets while improving energy security. The Regional Road Map on Power System Connectivity: Promoting Cross-border Electricity Connectivity for Sustainable Development, developed by ESCAP, is aimed at enhancing cross-border electricity connectivity that brings mutual benefits to countries in several ways,

[14] Climate Watch, "Global historical emissions", Historical GHG Emissions database. Available at www.climatewatchdata.org/ghg-emissions?breakBy=sector&chartType=percentage&end_year=2019&regions=AFG%2CBGD%2CBTN%2CIND%2CIRN%2CMDV%2CNPL%2CPAK%2CLKA%2CTUR&sectors=agriculture%2Cindustrial-processes%2Cland-use-change-and-forestry%2Cbuilding%2Celectricity-heat%2Cfugitive-emissions%2Cmanufacturing-construction%2Cother-fuel-combustion%2Ctransportation%2Cwaste&start_year=1990 (accessed on 17 January 2023).

namely, gaining access to lower-cost resources, managing electricity surpluses and deficits and generating export revenues, increasing economies of scale for power infrastructure investment and providing access to areas with higher renewable energy potential. A multilateral agreement building on existing bilateral electricity trade agreements of India with Bangladesh, Bhutan and Nepal can further expand benefits to the subregion. The energy centres of the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation and SAARC, the South Asia Regional Initiative for Energy Integration and other development partners are some actors involved in promoting greater electricity connectivity in the subregion.

78. The transport sector accounts for about one fourth of total global greenhouse gas emissions. According to the International Transport Forum, the South and South-West Asian subregion accounts for about 10 per cent of aggregate emissions by the sector, and the demand for passenger and freight transport is estimated to triple between 2015 and 2050.[15] For sustainable transport systems, a mix of policy responses are needed, including the promotion of electric or hybrid urban mobility and mass transit systems, the transition from fossil fuels and the shift towards cleaner modes of transport. As part of promoting sustainable transport in the subregion, ESCAP has recently assisted Bangladesh in drafting a national sustainable freight transport strategy. A broader level of technical assistance and subregional cooperation is needed to promote sustainable transport policies in order to decarbonize the transport sector.

79. Agriculture is an important economic sector in the subregion. According to calculations from FAO and the World Bank, the average share of employment in agriculture, forestry and fishing is about 35 per cent and the sector contributes to about 15 per cent of GDP in the subregion.[16] The agriculture sector is also the second highest emitter of greenhouse gases, contributing to about 21 per cent of total emissions in the subregion. Droughts, floods, landslides, saltwater intrusion, disease and pest infestations brought about by climate-induced hazards have damaging effects on agriculture production, food security and rural livelihoods. While burning crop residues facilitates the timely clearing of land for the next crop cycle, it reduces soil fertility and contributes to air pollution, affecting the health of rural and urban populations across borders. Many national agricultural research institutions, international agencies and development partners are involved in promoting climate-smart agricultural practices, while reducing the level of greenhouse gas emissions in the sector.

80. The COVID-19 pandemic, conflict and climate change have slowed economies, increased inflation and expanded balance-of-payment deficits in the subregion. Fiscal and debt pressures have raised interest rates and consequently increased future debt-servicing costs. The cascading pressures are forcing Governments to reduce spending, increase taxes, remove subsidies and depreciate exchange rates, making finance mobilization for sustainable development and climate action needs even more difficult. Some countries are

[15] "ITF South and Southwest Asia transport outlook", International Transport Forum Policy Paper, No. 104 (Paris, Organisation for Economic Co-operation and Development Publishing, 2022).

[16] FAO, "Employment indicators: agriculture", FAOSTAT database. Available at www.fao.org/faostat/en/#data/OEA (accessed on 12 January 2023); and World Bank, "Agriculture, forestry, and fishing, value added (% of GDP)", World Bank Open Data database. Available at https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS?view=chart&locations=AF-BD-BT-IN-IR-PK-LK-MV-TR-NP (accessed on 12 January 2023).

developing and implementing integrated national financing frameworks to find holistic ways to make ends meet. Thematic bonds are an instrument that can help to mobilize resources for projects with environmental and social benefits. ESCAP has been supporting member States in assessing fiscal needs for achieving the Sustainable Development Goals, developing green bond frameworks and building capacities on green and sustainable bond issuance.

3. Charting a way forward

81. Ongoing regional and subregional cooperation activities in South and South-West Asia to strengthen early warning and disaster risk reduction and management systems are vital to prepare better for climate-induced disasters and to minimize economic and human losses. Subregional cooperation in early warning systems should be facilitated to mitigate climate-related risks. Institutional capacities at the national, subnational and local levels need to be strengthened to integrate early warning and disaster risk reduction and management.

82. Regional and subregional cooperation between countries, international agencies and development partners should be fostered in research, knowledge-sharing and capacity-building. This should lead to the greater integration of activities such as just energy transition and climate-smart agriculture practices into government policies, planning and budget frameworks, and disaster risk management strategies.

83. In light of the crises facing the subregion, there is an urgent need to support capacities of member States to gain access to innovative financing mechanisms that can support public- and private-sector investments in climate-resilient infrastructure, clean energy and climate-resilient agriculture. The loss and damage fund adopted during the twenty-seventh session of the Conference of the Parties to the United Nations Framework Convention on Climate Change, once operationalized, is also a new instrument for which regional and subregional cooperation can be used to develop capacities and know-how for gaining access to climate disaster financing.

III. Issues for consideration by the Commission

84. The Commission may wish to reflect on priority areas and opportunities for advancing regional cooperation for accelerating climate action in the subregions and provide guidance to the secretariat on priority areas of work at the subregional and regional levels with a view to strengthening cooperation among subregions to address climate change and its impacts.