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Scaling up subregional and regional cooperation frameworks to manage cascading risks

Overview of the work of the secretariat and the United Nations system at the regional level

Scaling up cooperation frameworks to manage cascading risks

Note by the secretariat

Summary

Over the past two years the convergence of natural and biological hazards has starkly revealed the dangers of cascading risks in the region. These risk hotspots, summarized in document ESCAP/CDR/2021/1, include the following: hotspot type 1, intensifying risk of recurring floods and droughts with disease; hotspot type 2, intensifying risk of tropical cyclones and typhoons with related biological hazards; hotspot type 3, emerging risk of heatwaves with disease; and hotspot type 4, emerging risk of climate-change-induced multi-hazard vulnerabilities with new at-risk populations. Strengthened multisectoral and multidisciplinary cooperation at subregional and regional levels is essential for managing these cascading risks.

Such collaboration needs to evolve within the context of global frameworks. Several such frameworks already exist. The Sendai Framework for Disaster Risk Reduction 2015–2030 has a strong focus on biological hazards, epidemics, pandemics, climate-related disasters and public health. The Bangkok Principles for the implementation of the health aspects of the Sendai Framework for Disaster Risk Reduction 2015–2030, the International Health Regulations (2005) and the Health Emergency and Disaster Risk Management Framework are important global initiatives on strengthening the integration of health and disaster risk reduction in a comprehensive way.

The present document is intended to promote discussion on building back better with a focus on health, disaster and climate resilience in the region. Towards this end, and keeping in mind the commitments in the Bangkok Principles and other relevant regional and subregional frameworks and initiatives, it contains proposals for subregional and regional initiatives, in line with resolution 77/1 of the Economic and Social Commission for Asia and the Pacific.

A twin-track approach for such initiatives is proposed. Track one outlines the components of a regional strategy on disaster, climate and health resilience based on four work streams: (1) policy coherence, (2) integrated multi-hazard early warning systems, (3) climate change adaptation and (4) investing in resilient health infrastructure. Track two outlines subregional initiatives in response to the need for customized coordination, specific to each subregion, to coherently manage systemic and cascading risks.

The Committee on Disaster Risk Reduction is invited to deliberate on the issues presented and provide guidance on the proposed priorities for scaling up regional and subregional cooperation.

* ESCAP/CDR/2021/L.1.

I. Introduction

1. As the key findings of the *Asia-Pacific Disaster Report 2021: Resilience in a Riskier World – Managing Systemic Risks for Biological and Other Natural Hazards* show (see ESCAP/CDR/2021/1), the coronavirus disease (COVID-19) pandemic, combined with the persistent reality of climate change, is reshaping and expanding the contours of the region's riskscape. Cascading risks in the region revolve around four hotspots of intensifying and emerging risks. These risk hotspots include the following: hotspot type 1, intensifying risk of recurring floods and droughts with disease; hotspot type 2, intensifying risk of tropical cyclones and typhoons with related biological hazards; hotspot type 3, emerging risk of heatwaves with disease; and hotspot type 4, emerging risk of climate-change-induced multi-hazard vulnerabilities with new at-risk populations. Located in and across specific subregions, these hotspots are creating a unique set of complex risk scenarios that need to be addressed through scaled-up regional and subregional resilience-building initiatives.

2. The present document is intended to promote discussion on building back better with a focus on health, disaster and climate resilience. Towards this end, it contains proposals for subregional and regional initiatives that take into account the commitments in the Bangkok Principles for the implementation of the health aspects of the Sendai Framework for Disaster Risk Reduction 2015–2030 and other relevant regional and subregional frameworks and initiatives, in line with resolution 77/1 of the Economic and Social Commission for Asia and the Pacific (ESCAP).

3. A twin-track approach is proposed. Track one outlines the components of a regional strategy on disaster, climate and health resilience to build back better, based on four work streams: (a) policy coherence, (b) integrated multi-hazard early warning systems, (c) climate change adaptation and (d) investing in resilient health infrastructure. Track two outlines subregional initiatives in response to the need for customized coordination, specific to each subregion, to coherently manage systemic and cascading risks. New cooperation initiatives could evolve within the context of already existing international initiatives. Consequently, the present document contains a review of the relevant international cooperation instruments that may be considered in conjunction with the proposals regarding the elements of such new initiatives.

II. Review of relevant international frameworks and initiatives

A. Health in the Sendai Framework for Disaster Risk Reduction 2015–2030

4. Health is a key element of the Sendai Framework for Disaster Risk Reduction 2015–2030. Four of the seven global targets in the Sendai Framework are directly linked to health, focusing on reducing mortality, increasing the well-being of populations and the robustness of early warning systems, and promoting the safety of health facilities and hospitals. Biological hazards such as epidemics and pandemics are included together with natural hazards as key focus areas for disaster risk management. The Sendai Framework also contains a strong emphasis on creating resilient health systems by integrating disaster risk management into health care at all levels by developing the capacity of health workers with regard to disaster risk and by implementing disaster risk approaches in health care.

5. The Bangkok Principles support the implementation of the Sendai Framework. The Bangkok Principles were adopted by the International Conference on the Implementation of the Health Aspects of the Sendai Framework for Disaster Risk Reduction 2015–2030 and provide a blueprint for integrating health into disaster risk management planning as well as integrating disaster management into health planning. In the Principles, it is emphasized that health emergencies have many commonalities with natural hazards, and they should be addressed through risk assessments, surveillance, early warning systems, resilient infrastructure and coordinated incident management that extends across national borders.

B. Sustainable Development Goal target 3.d

6. Sustainable Development Goal target 3.d addresses the need to strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks. Target 3.d is also one of the 24 indicators of the International Health Regulations (2005) core capacity index, which measures 13 core capacities in health emergency preparedness. The index shows that for the developing countries of Asia and the Pacific there are critical capacity gaps in surveillance, response, preparedness and risk communication.

C. Health Emergency and Disaster Risk Management Framework

7. Drawing on lessons learned from five years of implementing the health aspects of the Sendai Framework and the International Health Regulations (2005), the Health Emergency and Disaster Risk Management Framework of the World Health Organization (WHO) is intended to strengthen capacity, within and beyond the health sector, to address the health impacts of all types of emergencies and disasters, and to reduce the health risks of future events. It is fully consistent with existing disaster risk management and health emergency policies and provides a framework for aligning these in the future.

8. The Bangkok Principles and the Health Emergency and Disaster Risk Management Framework provide a common language that can be adapted and applied by all actors for programming at the national and local levels in health and other sectors.

D. Regional and subregional cooperation mechanisms

9. Regional mechanisms are helpful to efforts to manage disaster risks of multiple dimensions and hazards, including biological hazards. Several mechanisms in the Asia-Pacific region highlight the need for transboundary cooperation for health resilience. For example, in the Action Plan 2018–2020 of the Asia Regional Plan for Implementation of the Sendai Framework for Disaster Risk Reduction 2015–2030, adopted by the Asian Ministerial Conference on Disaster Risk Reduction in 2016, countries are called upon to promote the implementation of the health aspects of the Sendai Framework, including by re-emphasizing the Bangkok Principles, with a view to ensuring more systematic cooperation, coherence and integration between disaster and health risk management.

10. The importance of international cooperation is also reflected at the subregional level. For example, scaling up capacity development in emergency risk management in South-East Asia is one of eight main regional priorities of WHO. Furthermore, in the Delhi Declaration on Emergency Preparedness in the South-East Asia Region, adopted at the seventy-second session of the

WHO Regional Committee for South-East Asia, in 2019, four focus areas were identified, namely identification of risks, investing in people and systems for risks management, implementing plans, and interlinking sectors and networks. Similarly, in the Declaration on Collective Response to COVID-19, adopted at the seventy-third session of the WHO Regional Committee for South-East Asia, in 2020, multisectoral collaboration was prioritized.

11. In the South Asian Association for Regional Cooperation (SAARC) Comprehensive Framework on Disaster Management and the Economic Cooperation Organization Regional Framework for Disaster Risk Reduction, the need for resilient health infrastructure is emphasized. In addition, the latter Framework contains calls for strengthening cross-border data sharing on transboundary animal and human diseases. In South-East Asia, the leading subregional policy framework is the Association of Southeast Asian Nations (ASEAN) Agreement on Disaster Management and Emergency Response. While the Agreement does not explicitly refer to biological hazards, the Secretary-General of ASEAN serves as the Humanitarian Assistance Coordinator during major disasters, which includes pandemics. In the ASEAN Vision 2025 on Disaster Management, ASEAN sets out the priorities for enhancing disaster risk management, including a call for enhancing cross-sectoral collaboration.

12. The Pacific has a number of subregional frameworks pertaining to health resilience. In the Framework for Resilient Development in the Pacific: An Integrated Approach to Address Climate Change and Disaster Risk Management, climate change and disaster risk are recognized as cross-cutting issues and the need for stakeholders in key sectors such as health to take action across both issues is stressed. In *Western Pacific Regional Framework for Action for Disaster Risk Management for Health*, WHO goes further, detailing specific health policy actions to prevent, prepare for, respond to and recover from disasters, including biological hazards. During the COVID-19 pandemic these frameworks played an important role in setting precedents and creating the institutional linkages required for the development of the Pacific Humanitarian Pathway on COVID-19.

13. Overall, regional and subregional frameworks are useful tools for anchoring national disaster management policy agendas and for sharing knowledge, best practices and resources among Governments. The pandemic has provided the strongest evidence to date of the need to strengthen synergies and coherence across these mechanisms.

III. A regional strategy for building back better with a focus on disaster, climate and health resilience

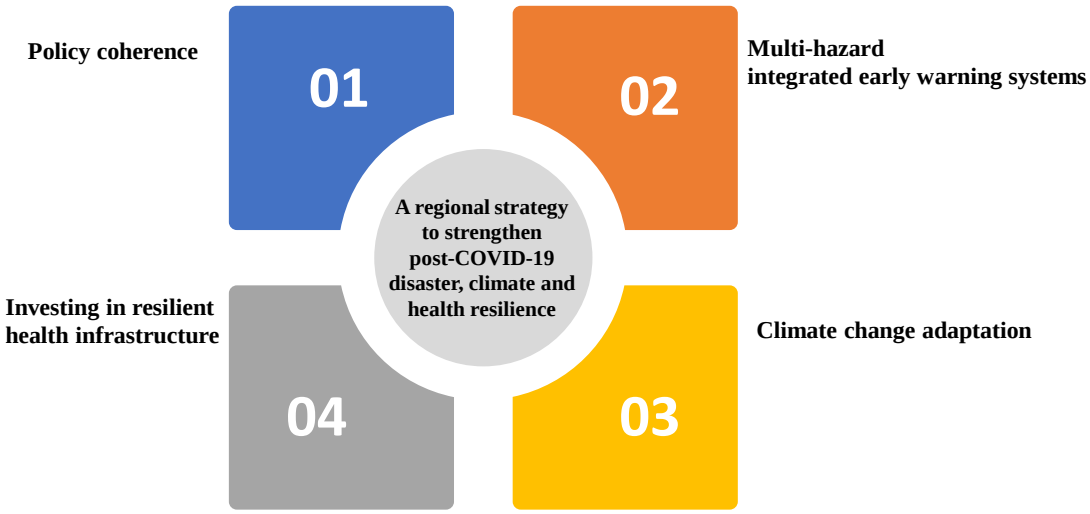
14. The key building blocks and policy action areas that promote disaster, climate and health resilience are described in document ESCAP/CDR/2021/1. The pandemic has exposed and exacerbated the underlying pre-existing vulnerabilities of people, health systems and social infrastructure to intersecting climate-related, biological and geophysical hazards. It is within this context that the secretariat proposes a regional strategy for building back better with a focus on disaster, climate and health resilience for 2022–2030 to strengthen post-pandemic disaster and health resilience.

15. Drawing on the principles in the Sendai Framework, the Bangkok Principles, the Health Emergency and Disaster Risk Management Framework, and aligned with Commission resolution 77/1, the proposed strategy is focused on promoting the systemic integration of health with disaster and climate

resilience-building strategies. It is based on four multidisciplinary streams consistent with the secretariat's programme of work, which includes the secretariat's framework for the socioeconomic response to COVID-19 (figure I).

16. In the next sections, in preparation for the development of a regional strategy, under each work stream, the regional state-of-play is reviewed, gaps are identified and areas for policy action are proposed.

Figure I
A regional strategy for building back better with a focus on disaster, climate and health resilience



A. Work stream 1: policy coherence

17. A recent review of national disaster risk management strategies revealed ways in which the integration of the health sector with disaster risk analysis, governance and implementation could be strengthened. Most of the strategies were based on hazards that had already occurred, rather than relying on a comprehensive multi-hazard risk assessment, and biological hazards were not sufficiently covered. While several strategies took into account the health impacts of natural disasters, none contained methods to assess the economic or social impacts of biological hazards, including pandemics. The underlying vulnerabilities highlighted by the COVID-19 pandemic, such as poor health infrastructure and services and social protection coverage gaps, were typically omitted from discussions of vulnerability. Furthermore, the support provided by national disaster risk management actors to the health and agriculture sectors during epidemics or animal disease or pest outbreaks was insufficient.

18. Additionally, while health sector inclusion in many national disaster risk management strategies could be strengthened with references to international frameworks, strategies adopted after 2015 do not cite the Bangkok Principles and very few cite the International Health Regulations. All, however, cite the goals, outcomes or priorities for action of the Sendai Framework for Disaster Risk Reduction.

19. While most national disaster risk management strategies state that mainstreaming disaster risk reduction across multiple sectors is a priority, only some specifically mention local-level health institutions. There is thus scope to develop more detailed plans for decentralized risk governance to address biological hazards and to strengthen the resilience of the health system to natural hazards. The most common measure to strengthen health resilience is to increase the resilience of infrastructure and increase health service preparedness for disaster response. A few national strategies focus on scaling up health services in response to natural hazards. However, only a few, notably in Japan and the Republic of Korea, include biological hazards, such as emerging infectious diseases. The focus on health infrastructure resilience is repeated for preparedness. More encouraging is the prevailing reference to the importance of building disease surveillance into multi-hazard early warning systems, although again, more detail about implementation could be provided.

20. Based on the above assessment, the immediate next step is to increase the inclusion of biological hazards and to integrate hazard-specific or single-hazard mechanisms into a multi-hazard framework. This framework should also have ways to take into account the potential for cascading risks, as many of the national contingency plans focus only on one disaster occurring in one area of the country, rather than cascading disasters, or multiple areas of a country or neighbouring countries being affected simultaneously. A regional approach that includes cascading risks can therefore effectively address these policy gaps.

B. Work stream 2: integrated multi-hazard early warning systems

21. Globally, one person in three is still not adequately covered by an early warning system.[1] In their nationally determined contributions on climate change, almost all least developed countries and small island developing States identify early warning systems as a top priority, yet they often lack the capacity or financial resources to implement them.

22. With regard to the weather, for example, impact-based forecasting represents a paradigm shift from “what the weather will be” to “what the weather will do”. Implementation of this second-generation system is being accelerated by the use of drones, big data and big data analytics. In Australia, for example, the hazard risk outlook includes a daily breakdown for the next four days, as well as a map, risk matrix and detailed impacts. The Government of the Philippines provides estimates of the damage that a tropical cyclone could cause to buildings and the number of people affected. The Viet Nam Meteorological and Hydrological Administration is implementing a project on impact-based forecasting and warning and communication. The ESCAP secretariat has also developed a methodology to operationalize impact-based forecasting for extreme events and slow-onset disasters.

23. However, notwithstanding these emerging computational innovations capitalizing on big data analytics and algorithms which can also be used to detect unusual patterns or clusters of illness, the pandemic has brought to the forefront the criticality of early warning systems for epidemics; real-time disease surveillance, with immediate estimates of potential exposure and vulnerability of at-risk communities, is crucial for contagion containment. The ability to quickly establish such patterns boosts epidemiologists’ disease

[1] World Meteorological Organization (WMO), “State of climate services 2020 report: move from early warnings to early action”, press release, 13 October 2020.

forecast trajectories and enables them to issue warnings of possible outbreaks with reasonable lead times.

24. While there has been progress in real-time disease surveillance, it varies widely across the region and not all countries have progressed equally. Real-time disease surveillance requires highly granular personal data for contact tracing, which raises data security and privacy issues. While these concerns are being addressed by several international frameworks, which have been advanced significantly in record time, innovations in computational epidemiology and international standards for privacy will continue to evolve. At the regional level, Governments will need to agree on how to best devise robust surveillance systems, with effective early warning protocols that support a vigilant emergency health response, while respecting data security and privacy.

25. The Asia-Pacific Disaster Resilience Network has been providing solutions with regard to the management of the intersection of COVID-19 and extreme climate events, based on four types of risk analytics: predictive (forecasting, early warning); descriptive (situation analysis/disaster impacts); prescriptive (policy options under different risk scenarios); and discursive (risk communication, engaging community interactive response). For example, in South Asia in mid-2020 when COVID-19 was spreading rapidly, the most immediate concern was the June–September monsoon season. The Network forecast the cascading risk hotspots for floods and drought.

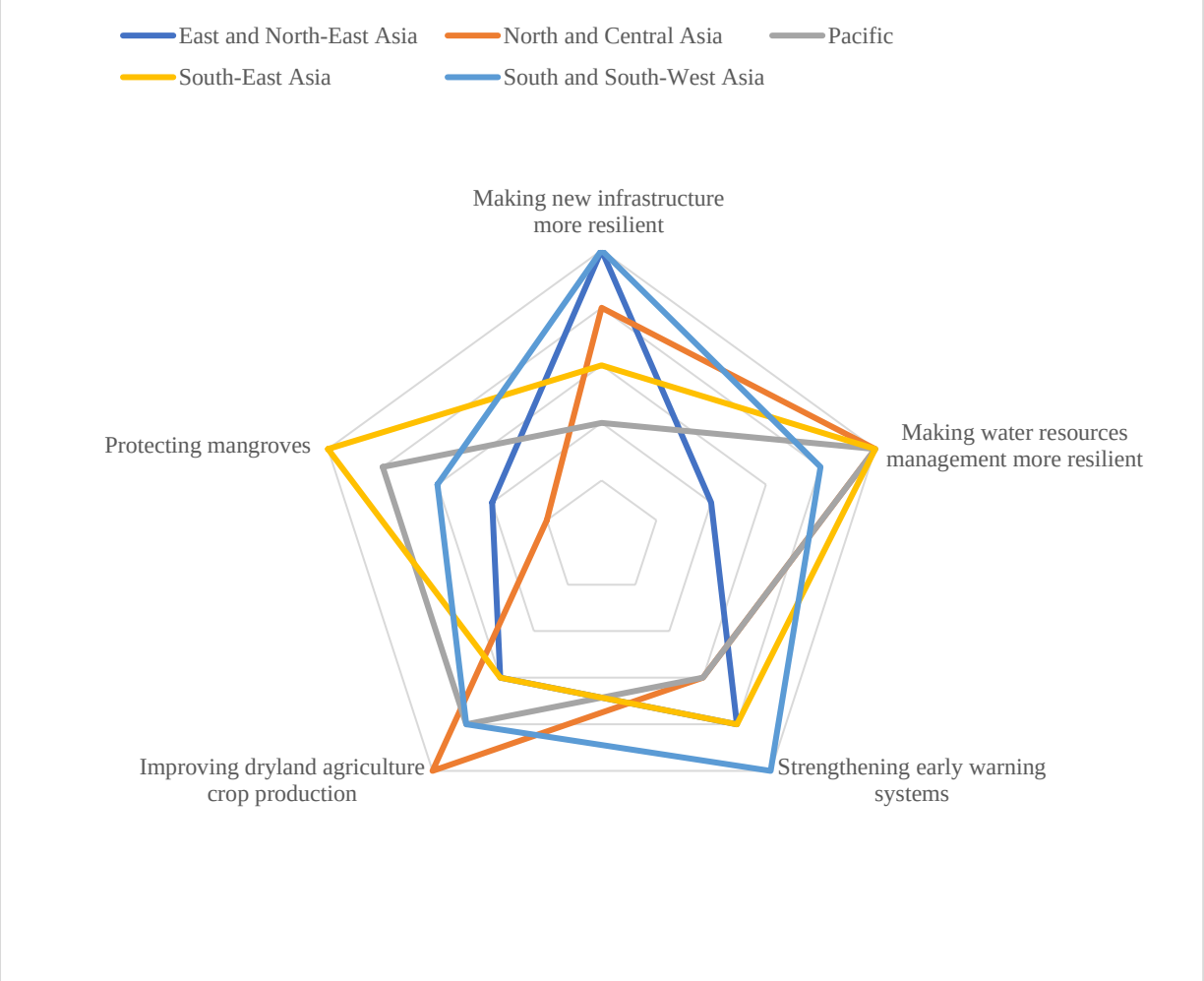
26. The proposed regional strategy could further leverage the work of the Asia-Pacific Disaster Resilience Network on regional products and services that seamlessly combine risk information for different timescales. Additionally, the annual subregional and national climate outlook forums could then provide technical resources and capacity-building to national hydrometeorological services and forecast user sectors.

C. Work stream 3: climate change adaptation

27. In the *Asia-Pacific Disaster Report 2021*, the secretariat identified top adaptation priorities for the Asia-Pacific region as well as for each subregion based on the specific riskscapes. This analysis builds on the five key priorities established by the Global Commission on Adaptation: strengthening early warning systems, protecting mangroves, making new infrastructure resilient, improving dryland agriculture crop production and making water resource management more resilient. The Global Commission concluded that investing $1.8 trillion in these five key areas could generate $7.1 trillion of total net benefits.[2] The analysis adaptation priorities for each subregion are presented as a radar chart (figure II). For example, as shown in the figure, the highest priority for South and South-West Asia is strengthening early warning systems and making new infrastructure resilient, followed by resilient water resource management, improving drylands and protecting mangroves. In South-East Asia, however, the key priorities are protecting mangroves and making water resource management more resilient – reflecting the increasing impact of droughts, floods and cyclones. In North and Central Asia, the key priorities are making water resource management resilient and improving dryland agriculture. Such prioritization can guide the scaling up of subregional cooperation initiatives across the Asia-Pacific region.

[2] Global Commission on Adaption, *Adapt Now: A Global Call for Leadership on Climate Resilience* (n.p., 2019).

Figure II
Adaptation priorities for all subregions



28. Additionally, the *State of the Global Climate 2020*, a multi-agency report spearheaded by WMO, provides comprehensive details of climate indicators and serves as a valuable substantiative report for the United Nations climate action summits and climate conferences. In 2021, investigation for the report was initiated at the regional level, notably in Asia and the south-western Pacific. The secretariat has joined WMO and other partners and is taking the lead on the thematic chapters on climate-related socioeconomic impacts and climate resilience policy. The findings will further guide the secretariat's development of the regional strategy as well as its work on scaling up subregional cooperation programs.

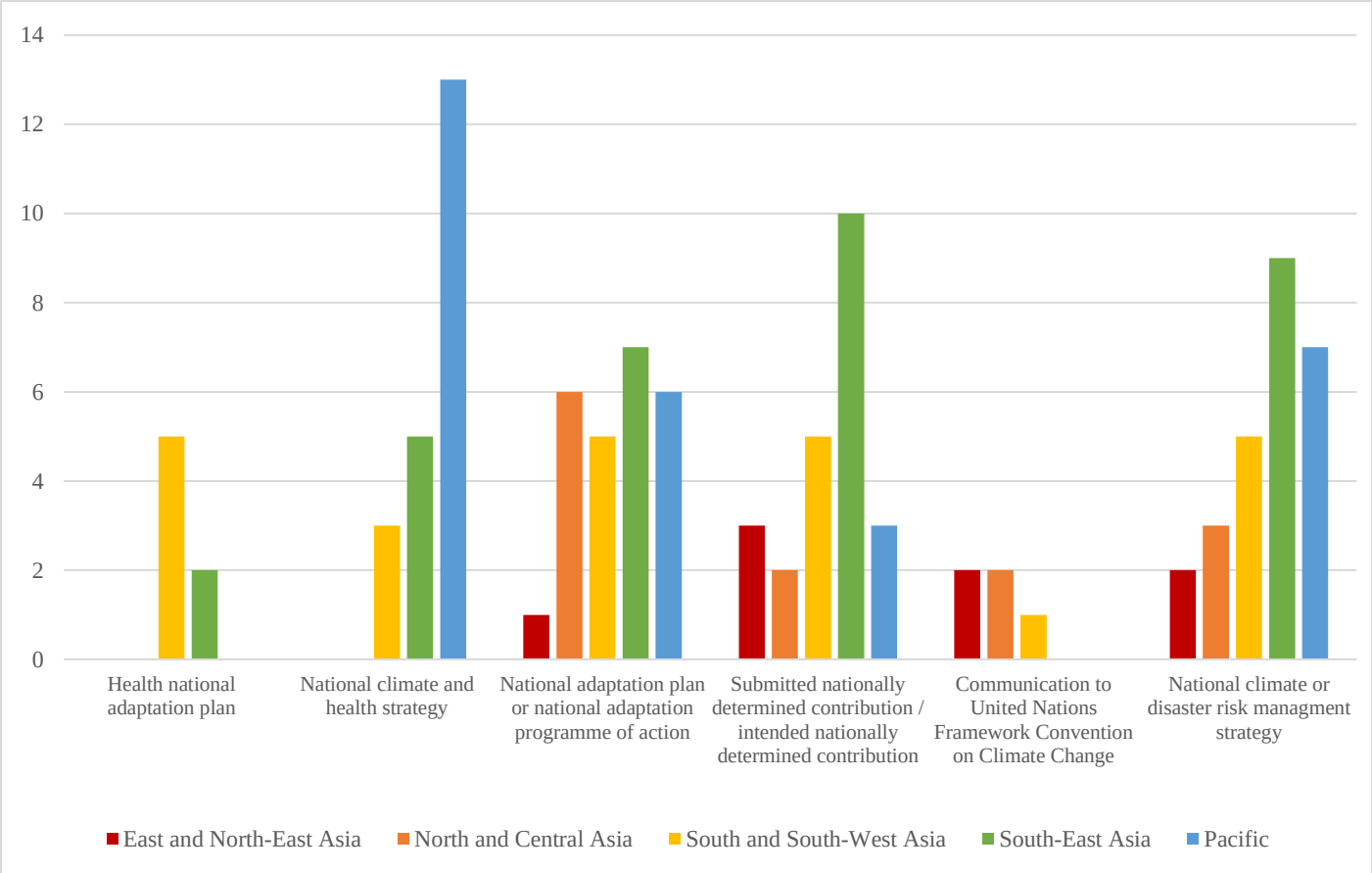
D. Work stream 4: investing in resilient health infrastructure

29. Strengthening the functioning capacity of critical infrastructure in the face of complex risk scenarios will require building complex risk projections of simultaneous disasters, for example a flood affecting a quarantine facility or hospital during a pandemic or a cyclone evacuation centre needing space for physical distancing during a disease outbreak. Risk scenarios must take into account how cascading disaster risks overlap with areas of poverty and inequality in order to highlight the critical infrastructure that serves the most exposed and vulnerable populations.

30. In addition to national disaster risk management, policymakers need to deal with uncertainties in the health sector, and the pandemic has added many more. Much remains unknown about the COVID-19 virus itself and its evolving mutations, its impact on different age groups, the effectiveness of treatment protocols and the likelihood of a population achieving herd immunity. The uncertainties are even greater when it comes to local drivers of risk and the impact of various policies on virus transmission. Without fast action, disease and climate change will have devastating impacts on human health.

31. The World Health Organization advises that Governments enact change through health national adaptation plans to be submitted as part of their official national adaptation plans under the Paris Agreement. However, progress across the Asia-Pacific region has been mixed so far (figure III). Forty-three countries have at least one climate strategy that includes the health sector, although that encompasses anything from brief mentions within nationally determined contributions to completed health national adaptation plans. Only four countries have formally submitted and are implementing a completed health national adaptation plan: Bangladesh, Bhutan, Nepal and Sri Lanka. In India, Indonesia and Thailand, plans are drafted and await approval. In addition, 13 Pacific countries, 5 South-East Asian countries and Maldives have developed national strategies to address health and climate change. Additionally, 24 countries have submitted nationally determined contributions or intended nationally determined contributions that include health sector adaptation, and 4 have submitted national communications to the secretariat of the United Nations Framework Convention on Climate Change that include health adaptation measures.

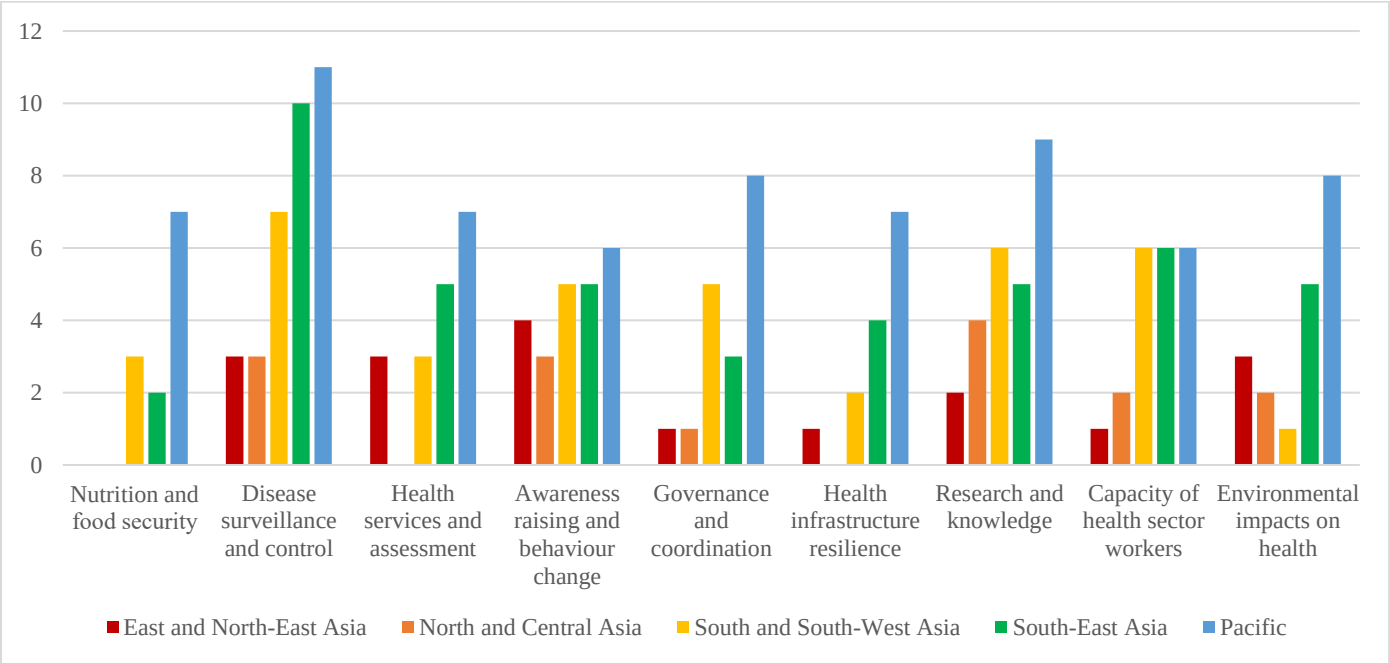
Figure III
National adaptation strategies that include the health sector, by subregion



Note: This figure includes data on strategies that are under development.

32. In terms of health-care adaptation priorities, as shown in figure IV, disease surveillance and control is a priority. In this respect, the countries performing best with their adaptation plans and strategies are those countries in the Pacific that cover at least five of the health priorities detailed in the figure. As is evident from the review in the present document, the need to invest in health infrastructure to make it more resilient is acute, and countries need to update their estimates for adaptation by incorporating health strategies.

Figure IV
Priorities for the health sector identified in national adaptation strategies, by subregion



Note: Information is available for 5 countries in East and North-East Asia, 4 in North and Central Asia, 8 in South and South-West Asia, 11 in South-East Asia and 12 in the Pacific.

33. In response to the pandemic, Governments have used stimulus packages to address the underlying risk drivers for health, disaster and climate change. Forty-four countries have included some aspect of health in their fiscal stimulus packages and thirty-three have covered social assistance, but it varies widely from country to country. To date, in most countries the financial commitment for the health sector is less than 10 per cent of the total stimulus package spend.

34. In addition to new fiscal stimulus instruments, Governments can also make use of existing finance instruments for climate adaptation and disaster risk management to strengthen health resilience. Conventional disaster risk management funds such as national disaster funds, contingent credit lines, insurance products and regional risk pools, such as the Pacific Catastrophe Risk Insurance Company, have been used to respond to the pandemic. Furthermore, global climate adaptation funds remain a largely untapped resource for health sector resilience. The Special Climate Change Fund, the Least Developed Countries Fund, the Pilot Programme for Climate Resilience, the Adaptation Fund and the Green Climate Fund, as well as bilateral instruments and programmes of multilateral development institutions such as the Coalition for Disaster-Resilient Infrastructure all include provisions for health sector adaptation. The health sector has fallen behind other sectors in accessing these funds, and there is room to develop a common regional strategy that better utilizes such funds.

E. Regional strategy for building back better with a focus on disaster, climate and health resilience

35. The secretariat's proposal to develop a regional strategy for building back better with a focus on disaster, climate and health resilience takes into account the building blocks already in place and the gaps identified in each of the four work streams (integrated multi-hazard early warning systems, climate adaptation and resilience, infrastructure resilience, and policy coherence for health and disaster risk reduction). The strategy can serve as a blueprint on guidance, coordination and adjusting regional policy actions to the changing contours of the Asia-Pacific disaster riskscape. Priorities will vary from country to country, but the strategy will provide all countries with sound principles for managing cascading systemic risks from biological and other natural hazards in a more coherent manner based on firm political commitment.

36. The strategy may also contain a matrix of the key activities that Governments, international organizations and other partners commit to for implementation between 2022 and 2030, on a voluntary basis and in line with national circumstances. The purpose of the strategy is to align policy priorities and responses and strengthen capacity for reducing cascading risks at the national, subregional and regional levels.

37. The regional strategy could be developed by a working group of experts from members and associate members of the Commission established with the express purpose of drafting the strategy. Subsequently, the Committee on Disaster Risk Reduction could adopt it at an ad hoc session before its next session. The secretariat will collaborate with relevant United Nations agencies, subregional intergovernmental organizations and key experts to develop the strategy and to (a) consolidate national experiences; (b) capitalize on the Asia-Pacific Disaster Resilience Network to facilitate peer learning and the sharing of good practices; (c) provide technical advice and capacity-building support to ESCAP members and associate members, and (d) facilitate access to the technical support available to members and associate members for implementing the Bangkok Principles through the regional Issue-Based Coalition on Building Resilience.

IV. Scaling up subregional cooperation

38. The pandemic showed how essential it is for subregional multi-hazard frameworks to include cascading risks and also how subregional cooperation can be a particularly effective means of building disaster resilience. As discussed in document ESCAP/CDR/2021/1, the *Asia-Pacific Disaster Report 2021* builds on the work of the Global Commission on Adaptation, which established five key priorities for adapting to the new riskscape at the subregional level. As shown in the *Report* the common top priorities for subregional disaster resilience building, with some variations across subregions, are strengthening early warning systems, improving dryland agriculture, making water resources more resilient, protecting mangroves and improving infrastructure resilience. The opportunities for scaling up subregional cooperation are considered in more depth below.

A. South-East Asia

39. In South-East Asia, 110 million people are exposed to drought and related biological hazards. As of 2020, in 5 of 10 ASEAN member States, more than 30 per cent of the total employed population was in the agricultural sector, ranging from a high of nearly 62 per cent in the Lao People's Democratic

Republic, to 31 per cent in Thailand and Cambodia. As droughts have a greater impact on countries that depend heavily on agriculture, those countries place greater importance on building resilient water resources and improving dryland agriculture. As 41.5 million people in the subregion are exposed to cyclones and related biological hazards, it is also important to strengthen early warning systems.

40. The *Ready for the Dry Years* publication series was jointly published by ASEAN and ESCAP as part of the effort to mobilize region-wide action as the drought risk intensified. It provided the evidence base for the negotiations for the ASEAN Declaration on the Strengthening of Adaptation to Drought, which was adopted at the thirty-seventh ASEAN Summit on 13 November 2020.

41. Working in partnership to follow up on those efforts, ASEAN and ESCAP support the development of a regional road map or action plan for the Declaration that is focused on the creation of capacity-building materials to build resilience to drought in South-East Asia. National case studies will be prepared for two pilot countries, namely Cambodia and Thailand. In addition, ESCAP is working with the Brunei Climate Change secretariat of the Ministry of Development of Brunei Darussalam on a technical assistance project for the Regional Integrated Multi-hazard Early Warning System for Africa and Asia with a focus on improving climate adaptation, resilience and disaster preparedness in Brunei Darussalam.

42. The collaboration between ESCAP and ASEAN on a regional action plan or road map is a good example of how the secretariat can scale up efforts to strengthen cooperation between countries in other subregions. These achievements were possible in South-East Asia due to the coherent cross-sectoral efforts to manage drought risk, led by the ASEAN Committee on Disaster Management. This cooperation was reinforced by ASEAN and ESCAP by using the *Ready for the Dry Years* publication series to mobilize cross-sectoral support for drought action in the areas of agriculture, disaster management, energy, environment, finance, planning, science and technology. Additionally, the adoption of the ASEAN Declaration on the Strengthening of Adaptation to Drought was facilitated by the strong partnerships in South-East Asia between the United Nations, ASEAN, national Governments and other stakeholders, structured on the implementation of the Plan of Action to Implement the Joint Declaration on Comprehensive Partnership between ASEAN and the United Nations (2021–2025). This foundation allowed ESCAP to combine the extensive experience of ASEAN in bringing South-East Asian Governments together, with the expertise of many sectoral actors, to develop a new transformative approach to drought management across the region. Moving forward, ESCAP proposes to replicate the cross-sectoral and intergovernmental approaches in other subregions, while recognizing that each subregion is unique in its characteristics and institutional set-ups.

B. East and North-East Asia

43. In East and North-East Asia, approximately 260 million people are vulnerable to heatwaves, 196 million to cyclones, and 68 million to drought and the associated biological hazards. In March 2021, amid the COVID-19 pandemic, the subregion was hit by the worst sand and dust storms in a decade. In East Asia, a global temperature rise of 1.5 degrees Celsius above pre-industrial levels, projected to occur between 2030 and 2052, will expose 48 million people to water scarcity. This would severely impact countries such

as the Republic of Korea where more than half the employed population works in agriculture. The importance of investing in early warning systems, appropriate land management for improved agricultural production and water resource management is easily grasped.

44. Since 1993, the North-East Asian Subregional Programme for Environmental Cooperation has served as a comprehensive intergovernmental cooperation framework in the subregion. China, the Democratic People's Republic of Korea, Japan, Mongolia, the Republic of Korea and the Russian Federation are members. The Programme has pursued a multidisciplinary and multisectoral approach to address subregional environmental challenges. Desertification and land degradation is one of the five programmatic areas of the North-East Asian Subregional Programme for Environmental Cooperation Strategic Plan 2021–2025. In the Plan, it is recognized that the world's soils store more carbon than the planet's biomass and atmosphere combined, and that appropriate land management is urgently needed to increase soil carbon stocks that can offset the anthropogenic greenhouse gas emissions to generate multiple benefits for both the environment and society. Many interventions to achieve land-degradation neutrality commonly deliver benefits for climate change adaption and mitigation.

45. There is room to scale up the Programme's work on desertification and land degradation and their interlinkage with climate change through strengthened subregional cooperation. As a first step, a study will contribute to enhanced scientific understanding of risk management and the implementation of early warning systems. The study will also provide guidance on the acceleration of adaptation actions, such as building individual and institutional capacity to address implementation gaps and accelerating knowledge transfer on enabling financial mechanisms.

C. South and South-West Asia

46. As the pandemic unfolded in South and South-West Asia, the intersection of COVID-19 and extreme climate events acutely highlighted the urgency of subregional actions to address the crisis of cascading disasters that are reversing progress towards the Sustainable Development Goals in the subregion. Although the SAARC and Economic Cooperation Organization frameworks are already aligned with the Sendai Framework for Disaster Risk Reduction, they do not address cascading risks.

47. Recognizing the need to address cascading risks, ministers dealing with environment and/or disaster management in Afghanistan, Bangladesh, India, Maldives and Pakistan met at the Special High-Level Event on Disaster and Climate Resilience in South Asia, held online on 4 December 2020. As a result of that meeting, they called upon the secretariat to shape a longer-term, holistic, coordinated and more strategic approach to building disaster and climate resilience and develop a new regional framework for managing cascading risks from natural and biological hazards through cooperation with subregional bodies. In response, ESCAP published "Weaving a stronger fabric: managing cascading risks for climate resilience".[3] Accordingly, and working in partnership with the relevant subregional organizations, the secretariat plans to provide support to scale up the subregion's frameworks to encompass cascading risks.

[3] ESCAP, Asia-Pacific Disaster Resilience Network Policy Study, No. 8/2021 (Bangkok, 2021).

D. North and Central Asia

48. In North and Central Asia, where large proportions of the population depend on agriculture, approximately 22 million people are exposed to heatwaves and related biological hazards and 5 million are exposed to drought and food insecurities. In the *Report*, the region is identified as an emerging hotspot. Furthermore, the projected global temperature rise of 1.5 degrees Celsius above pre-industrial levels between 2030 and 2052 would expose many more people to water shortages.

49. The drying up of the Aral Sea, which is the biggest lake in Central Asia, its resources shared by Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan and Turkmenistan, is often considered the world's worst environmental catastrophe. Additionally, this catastrophe was exacerbated by cascading disaster risks as slow-onset disasters such as drought, land degradation, desertification, and sand and dust storms that spread salt and dust increased. With the threat of climate change, together with increasing demands for food and water, which are exacerbated by a growing population, the risks of other water-related disasters in the inland basin systems are clearly of emerging concern.

50. While these phenomena have been studied extensively from the perspective of the sustainable management of natural resources, relatively less work has been done on disaster risk reduction and associated climate change adaptation with regard to inland water basins, which means that cascading risk assessments and integrated multi-hazard early warning, mitigation and prevention are lacking. Consequently, the secretariat is conducting a study to better understand the risk drivers of water-related disasters in inland water basins, including the impacts of climate change, by using technological advances in earth observation, digital elevation modelling, geospatial techniques and high-resolution climate modelling. The findings should support the development of regional cooperation processes that could address the Aral Sea catastrophe from a multisectoral risk management perspective and provide examples for disaster risk reduction in other inland water basins.

51. The work should also provide support for efforts to implement the commitments in a resolution drafted by the Government of Turkmenistan tentatively entitled "Creating regional mechanisms to study, mitigate and minimize disasters in endorheic (inland) water basins and to prevent them, in particular considering modalities for the establishment of the United Nations Special Programme for the Aral Sea basin". The Government intends to submit it to the Commission at its seventy-eighth session, in 2022.

E. Pacific

52. In the Pacific island developing countries, large portions of the population are exposed to risks from drought and heatwaves and related biological hazards. This subregion is also highly vulnerable to cyclones and their related biological hazards. With the intensity of these events on the rise, the subregion is identified in the *Report* as a hotspot of emerging cascading risk.

53. The secretariat, jointly with the Government of Samoa and the wider United Nations system, is implementing a project on strengthening the resilience of Pacific island States through universal social protection with funding support from the Joint Sustainable Development Goals Fund. The programme offers a strategic opportunity to consider disaster risk in the design and implementation of social protection systems in countries that are at the

centre of social protection innovation. The policy brief series "Disaster responsive social protection" by the secretariat and the United Nations Joint Programme provides practical suggestions on how to design social protection schemes that build resilience to disasters in the Cook Islands, Niue, Samoa and Tokelau. The first issue of the policy brief series was co-published by ESCAP and the Ministry of Natural Resources and Environment of Samoa. The ESCAP secretariat is partnering with the Regional Environment Programme and the Pacific Community to scale up subregional activities related to disaster, climate and health resilience. Further, ESCAP is ready to provide technical and other support on this, if requested.

V. Issues for consideration by the Committee

54. Taking into account the building blocks and policy gaps identified in the four work streams of the regional strategy proposed in section III, as well as the needs and opportunities for scaling up cooperation at the subregional level identified in section IV, the Committee may wish to take the following actions:

(a) Provide guidance on the future work of the Committee and the secretariat;

(b) Recommend that a regional strategy on disaster, climate and health resilience, covering the period 2022–2030, and drawing on the four work streams identified above, be developed;

(c) Encourage member States and international organizations as well as stakeholders in the private sector, policy think tanks, foundations and academia to support the development of the regional strategy, in a regionally coordinated way.