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Economic and Social Commission for Asia and the Pacific
Committee on Disaster Risk Reduction

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Trends emerging from the midterm review of the Sendai Framework for Disaster Risk Reduction 2015–2030 in Asia and the Pacific, including the implementation of its health aspects

Building resilience to cascading risks, including disasters, climate change and health crises

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 Asia-Pacific region. Pathways to strengthen the integration of climate and disaster risk reduction in a comprehensive manner are highlighted in resolution 78/1 of the Economic and Social Commission for Asia and the Pacific; the Sendai Framework for Disaster Risk Reduction 2015–2030; and the Bangkok Principles for the implementation of the health aspects of the Sendai Framework for Disaster Risk Reduction 2015–2030.

The present document contains an analysis of the trends emerging from the midterm review of the Sendai Framework, with a focus on its health aspects. Based on the review, the document is aimed at fostering a broader exchange of knowledge across multiple disciplines. Subregional and regional initiatives to facilitate the integration of health and disaster risk reduction in Asia and the Pacific are also examined.

The Committee on Disaster Risk Reduction is invited to discuss the trends emerging from the midterm review at the global and regional levels and to provide further guidance on evolving strategies, as well as to further develop policy toolkits and guidelines on building disaster, climate and health resilience, covering the period 2023–2030.

* ESCAP/CDR(8)/1/Rev.1.

I. Overview of the main findings and recommendations of the midterm review of the implementation of the Sendai Framework for Disaster Risk Reduction 2015–2030

1. The Sendai Framework for Disaster Risk Reduction 2015–2030 has been instrumental in shifting the approach to disaster management. Instead of focusing solely on managing disasters, the new comprehensive risk management approach encompasses understanding and managing disaster risks and incorporating those perspectives into policy planning processes and actions within social, economic and environmental systems.

2. Although some progress has been made in reducing the impact of disasters, the report on the main findings and recommendations of the midterm review of the implementation of the Sendai Framework for Disaster Risk Reduction 2015–2030[1] reveals that countries are not on track to achieve the four priorities of the Sendai Framework by 2030. Some of the challenges identified and recommendations made in the report are discussed below.

A. Understanding disaster risk

3. In the report, priority 1 was identified as understanding disaster risk. Risk is better understood than it was in 2015, given the increase in the number of risk models and assessments. Nonetheless, fewer than half of the countries reported having fit-for-purpose, accessible and actionable risk information. The absence of such data limits the ability to address the systemic nature of risk. Data ecosystems, therefore, need to be strengthened, including through enhanced interoperability across systems, as well as the inclusion of local, traditional, and Indigenous knowledge, feedback and expert opinion. Furthermore, new and emerging technologies present opportunities to overcome the data gaps, but the lack of capacity to interpret the vast array of scientific data and develop risk information impedes risk-informed decision-making and policy uptake.

4. The production of high-quality data on disaster risk was identified as a priority. It was also noted that, given the advances in computing power, data availability and the use of artificial intelligence, another priority was the circulation and interoperability of data and risk information across domains and data systems, in particular in respect of transboundary risks. It was also recommended that the focus of risk assessments be shifted from single hazards to better understanding the vulnerability and exposure of communities.

B. Strengthening disaster risk governance to manage disaster risk

5. The challenge identified as priority 2 was strengthening disaster risk governance to manage disaster risk. While most developed countries reported having national disaster risk reduction strategies, only 61 per cent of the least developed countries had developed such strategies. More significantly, in most countries, the implementation of national strategies at the local level faced critical gaps. The gaps continue to expand due to the lack of coordination between disaster risk reduction, climate change, development and macroeconomic sectors.

[1] A/77/640.

6. In the report, it was stated that Governments needed to recommit to ensuring that multisectoral, multi-scalar and multi-stakeholder mechanisms and strategies for risk management were implemented at the national and subnational levels. It was noted that member States had to ensure that such mechanisms addressed the systemic nature of risk and were supported by legislative and regulatory frameworks that reflected shared responsibility for risk-informed decision-making and investment.

C. Investing in disaster risk reduction for resilience

7. Priority 3 was identified as investing in disaster risk reduction for resilience. The review underscored the inadequacy of investments in disaster risk reduction and efforts to de-risk investment. More specifically, it was noted that the impacts of climate-related disasters had doubled in the previous 20 years. Developing countries needed an estimated $70 billion annually for adaptation; however, a lack of funding was a significant impediment to building long-term resilience. In addition, public sector disaster risk reduction budget allocations and expenditure, in particular, were significantly lower than for other national development priorities. In many countries, disaster risk reduction accounted for less than 1 per cent of the national budget.

8. It was recommended that proper consideration of disaster risks be addressed, using fiscal and market-based measures and other incentives. In addition, it was noted that existing collaboration mechanisms, for example, regional cooperation mechanisms, could be used to identify good practices and common approaches to finance resilience.

D. Enhancing disaster preparedness for effective response and to build back better in recovery, rehabilitation and reconstruction

9. Enhancing disaster preparedness for effective response and to build back better in recovery, rehabilitation and reconstruction was identified as priority 4. Progress on priority 4 has been limited due to an overemphasis on post-disaster, reactive risk reduction measures instead of investing in opportunities to build back better, accelerate development and strengthen overall resilience. As highlighted in the report, the coverage of multi-hazard early warning systems remains inadequate; at the global level, only 32 per cent of small island developing States and 59 per cent of landlocked developing countries reported having early warning systems. In addition, in nearly all countries, it was reported that marginalized groups (e.g. women and girls, persons with disabilities, people in rural areas and older persons) were often excluded from early warning and post-disaster recovery.

10. It was recommended that member States continue to mobilize resources, technology and capacity to implement and extend the reach of multi-hazard early warning systems, developing guiding strategies and governance arrangements across all four phases of multi-hazard early warning systems implementation while addressing the needs of women; persons with disabilities; and local, traditional and Indigenous knowledge holders.

11. Against these findings and recommendations, the next section of the present document focuses on the trends related to the health aspects of the Sendai Framework and on the actions taken to further build resilience to the impacts of the disaster-health-climate nexus in the Asia-Pacific region, as well as on progress made in that regard.

II. Trends in building resilience to disaster-health-climate risks emerging from the midterm review of the implementation of the Sendai Framework for Disaster Risk Reduction 2015–2030

12. The coronavirus disease (COVID-19) pandemic was in many ways an unexpected event that caught the world off guard and brought the nature of cascading hazards and the intersections between natural and biological hazards to the forefront. Furthermore, during the pandemic, the risk of climate change-related diseases leading to illness and death continued to increase. For vector-borne diseases in particular, such as malaria and dengue, rising temperatures can shorten the extrinsic incubation period in mosquitos and facilitate the transmission of the disease. In the period from 1990 to 2020, the average number of dengue cases per year increased from 200,000 to over 500,000. During the same period, there were particularly rapid increases in the average annual number of dengue cases in South and South-West Asia and in South-East Asia, along with increases in hydrometeorological events.

13. The multidimensional and cascading impacts ensuing from climate change-related disasters have negatively affected the health and well-being of humans and ecosystems, as well as food, water and health systems. The lack of action taken to address those impacts is underscored in the *Report of the Midterm Review of the Implementation of the Sendai Framework for Disaster Risk Reduction 2015–2030*.[2] Several trends for future action in that area are also highlighted in the report.

14. Compared with the baseline decade from 2005 to 2014, the average annual number of people affected by disaster-related illness or injury increased from 1,147 per 100,000 people to 2,066 per 100,000 people in the decade from 2012 to 2021. In addition, although the pandemic has triggered global awareness of the urgent need to adopt multi-hazard risk reduction approaches, including for intersections of biological and natural hazards, the development and implementation of multisectoral disaster risk reduction strategies require further efforts.

15. Although the pandemic has increased recognition of the importance of transdisciplinary, intersectoral and multiscale coordination, there still exists a persistent lack of coordination among risk reduction agencies and sectoral line ministries and across policies that hinders risk-informed decision-making.

16. However, there have been efforts to improve cooperation and coordination. For example, there are several regional mechanisms that play a role in disaster management and emergency response in Asia and the Pacific, including the Association of Southeast Asian Nations (ASEAN) Agreement on Disaster Management and Emergency Response; the ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management; the Asian Disaster Preparedness Centre; the Asian Disaster Reduction Center; the Asian Preparedness Partnership; and the Mekong River Commission. Similarly, in the Pacific small island developing States, there are several initiatives aimed at improving disaster preparedness and resilience. For example, the United Nations Capital Development Fund's Pacific Insurance and Climate Adaptation Programme supports microinsurance schemes to help Pacific peoples become more financially prepared for disasters and climate change. The Pacific Adaptation to Climate Change and Resilience Building

[2] United Nations Office for Disaster Risk Reduction (Geneva, 2023).

programme, funded by the European Union, is engaged in private sector mapping and capacity-building with respect to disaster risk financing and climate change in various Pacific island countries.

17. Disaster risk reduction investments have been insufficient to cover the increasing cost of climate-related disasters. As economic costs stemming from climate-related hazards continue to rise, inequalities within and between countries have increased. Investments made after disasters can also be risk-blind, starting a vicious cycle of continuing losses and inequalities. Finally, data limitations and the lack of interoperability in connecting risk to financial investments remain challenges in this sphere.

18. Despite the remaining challenges, several instances of good progress in the Asia-Pacific region are noted in the *Report of the Midterm Review of the Implementation of the Sendai Framework for Disaster Risk Reduction 2015–2030*, highlighting the progress in incorporating disaster risk reduction within legal frameworks of other key sectors, including the health-care sector, in some countries. In Thailand, for example, provinces have been mandated to develop disaster risk management plans for their jurisdictions at the subnational level. In the Republic of Korea, the disaster impact assessment system is used to identify disaster risk factors associated with various development projects, including those related to health infrastructure.[3] Furthermore, there has been an increase in the uptake of adaptive social protection by countries to address multiple vulnerabilities associated with systemic risks and cascading disasters.

III. Action and progress in facilitating the integration of disaster risk reduction and health

19. In the *Asia-Pacific Disaster Report 2021: Resilience in a Riskier World – Managing Systemic Risks from Biological and Other Natural Hazards*, it was noted that during the peak pandemic period, Asia-Pacific countries had to contend with their regular sequence of natural hazards, including cyclones, typhoons, storm surges, floods, droughts, heatwaves, glacial lake outbursts, locust swarms, earthquakes and volcanic eruptions. Many of those hazards were hydrometeorological and further increased the risk of other diseases, such as malaria, dengue and other vector-borne diseases. In all those disasters, many of the established measures for prevention, response and recovery were interrupted by lockdowns, travel restrictions and other containment measures imposed as a response to COVID-19. At the same time, those natural hazards hampered the response to the pandemic and facilitated the spread of the virus, as people often had to crowd together in emergency shelters. The convergence of biological and other natural hazards added to the underlying drivers of vulnerability, which include poverty, inequality and unplanned and rapid urbanization, all of which damaged the life prospects of millions of people.

20. Recognizing the importance of a systematic approach to risk reduction, at its seventh session, the Committee on Disaster Risk Reduction recommended a scale-up of regional and subregional cooperation strategies that integrated disasters, including climate-related disasters, and associated health perspectives. The Committee also recommended further capacity-building activities to manage and mitigate cascading risks using innovative technology tools. It further recommended technical advice and

[3] Republic of Korea, Ministry of the Interior and Safety, *Mid-term Review for the Implementation of the Sendai Framework: 2022 Voluntary National Report of the Republic of Korea* (Sejong-si, 2022).

capacity-building support on the implementation of the health aspects of the Sendai Framework.[4] Since 2021, the Economic and Social Commission for Asia and the Pacific, through its analytical work, cooperation mechanisms and partnerships, has supported countries in operationalizing the related global frameworks in the region and subregions on policy coherence, climate-change adaptation and resilient infrastructure systems.

A. Scaling fit-for-purpose analytical work to support members and associate members in accessing actionable risk information on the disaster-health-climate linkages

21. Risk knowledge and information is needed first and foremost to address the gaps that exist in risk-informed development. In its five subregional disaster reports undertaken in 2022, [5] the Commission captured the subregional specificities cascading from the convergence of natural and biological hazards and proposed targeted policy coherence and adaptation measures for each subregion.

22. In the report on South and South-West Asia, it was noted that disasters had imposed multiple pressures on vulnerable populations and health systems and had disrupted health services, exposing people to greater risks in facilities with poor health conditions in the subregion. For example, in Bangladesh, 80 per cent of hospitals were located in high-risk hotspots and served the most vulnerable populations, a figure that was the highest in the subregion, followed by Nepal and Sri Lanka. In South and South-West Asia, therefore, the top adaptation priorities were identified as strengthening early warning systems and making new infrastructure resilient.

23. In the report on South-East Asia, several hotspots for floods and flood-related diseases, including dengue, malaria and other vector-borne diseases, were identified. New hotspots were emerging in Indonesia, the Philippines and Thailand under both the moderate and worst-case climate-change scenarios. Therefore, the top adaptation priorities for South-East Asia were identified as protecting mangroves, making water resources management more resilient and strengthening early warning systems.

24. It was noted in the report on East and North-East Asia that in most countries the impact of heatwaves, which was perhaps the hazard with the most impact on human health, was very significant and would continue to increase with climate change. Under the worst-case scenario, over 90 per cent of the population of China, the Democratic People's Republic of Korea, Japan and the Republic of Korea would be exposed to heatwaves; in Mongolia and the Russian Federation, heatwave exposure would affect over 60 per cent. In East and North-East Asia, therefore, the top adaptation priority was making new infrastructure resilient to the warming climate to protect economic assets and development gains. In addition, strengthening early warning systems in the subregion would further protect people at the last mile – that is, those who live in out-of-the-way areas or who are hard to reach owing to socioeconomic circumstances.

25. In the report on North and Central Asia, it was noted that heatwaves and sand and dust storms would constitute a significant threat to the health of the population under climate-change scenarios. In addition, the incidence of

[4] ESCAP/CDR/2021/3, para. 1.

[5] See www.unescap.org/knowledge-products-series/asia-pacific-disaster-report.

malnutrition and diseases related to drought might rise as the number of people exposed to drought in the region was expected to increase sixfold, from 4.8 per cent in the existing scenario to 28.6 per cent under the worst-case climate-change scenario. In North and Central Asia, therefore, making water resource management more resilient and improving dryland agriculture were the most important adaptation priorities.

26. It was noted in the report on the Pacific that the small island developing States in the subregion were becoming more vulnerable to additional risks from floods and related diseases, which directly affected human health and had high economic and social costs. Countries that had previously been unaffected by floods would become hotspots of flood exposure with climate change. Under the worst-case climate-change scenario, the number of people exposed to floods and related diseases would increase from just over 200,000 to over 2.5 million in the Pacific small island developing States. In addition, based on the latest climate-change models from the Intergovernmental Panel on Climate Change and the Shared Socioeconomic Pathway, the Pacific small island developing States would face an increase in the annual wind speed of tropical cyclones and in their associated health hazards. Should the temperatures rise by 1.5°C degrees, intensifying annual winds could occur in American Samoa, French Polynesia, New Caledonia, Niue, Papua New Guinea, Samoa, Solomon Islands, Tonga and Vanuatu. Almost 8.3 per cent of the population in the Pacific small island developing States would be exposed to a large projected increase in surface winds, causing significant damage to human health. In the Pacific small island developing States, establishing procedures for resilient water resource management and strengthening early warning systems were the key adaptation priorities.

27. In addition, in *Pacific Perspectives 2022: Accelerating Climate Action*,[6] an analysis was carried out on the complex relationship between natural disasters, climate change and biological hazards, which affect people's health. The climate and biological hazard risk hotspots in the subregion according to future scenarios given by the Representative Concentration Pathways and Shared Socioeconomic Pathway analyses are highlighted. They include an increase in the occurrence of extreme events such as floods and related biological hazards. It is further noted that investments in adaptation measures, including the strengthening of early warning systems and the application of frontier technologies across disaster and health sectors, could have beneficial knock-on effects. As building resilience to natural disasters is an overarching goal for the Pacific subregion, there is still scope for enhancing cooperation in this regard.

28. In 2021, the Risk and Resilience Portal of the Asia-Pacific Disaster Resilience Network was launched. The Portal comprises a fit-for-purpose data ecosystem that houses accessible and actionable risk information, especially for the purpose of addressing the systemic nature of risk. It has been created to ensure that the vast array of scientific information on hazards and climate change, as well as health, social and economic data, can be analysed for use by countries to monitor Sustainable Development Goal targets that are related to climate, disaster and health, namely targets 1.5, 2.4, 3.d, 4.7, 6.6, 9.1, 11.5, 13.1, 14.2 and 15.3; to support further implementation of priority 1 of the Sendai Framework; and to support policymakers in building efficient risk-informed decisions that span multiple sectors.

[6] ST/ESCAP/3062.

29. In 2022, the regional knowledge repository was strengthened and policy coherence for disaster risk reduction and resilience was enhanced. The integrated risk analytics of the Portal were used to substantiate discussions during the 2022 subregional consultations for the Asia-Pacific Forum on Sustainable Development on monitoring the status of the achievement of Sustainable Development Goals 6, 7, 9 and 11. The Portal's integrated analytics were mainstreamed in the 2022 country common analysis framework in Bhutan and were used to inform the first consultation of the national adaptation process of Pakistan. The analytics will be further downscaled at the subnational level to support the National Disaster Management Authority of Pakistan in the forecasting of climate and natural hazards. In Armenia, the Portal's analytics were used and showcased by policymakers from the Ministry of Environment as a user-friendly digital source of forecast and risk information for the North and Central Asia subregion. Finally, based on the Portal analytics that include the subnational level decision support system, the Lao People's Democratic Republic requested a customized support tool to accelerate the implementation of disaster- and climate-related Sustainable Development Goals.

B. Enhanced cooperation and partnerships to accelerate development and strengthen overall resilience to the disaster-health-climate nexus

30. Several existing mechanisms in the Asia-Pacific region have championed the integration of climate, disaster and health risk reduction. In particular, the Asia-Pacific Ministerial Conference on Disaster Risk Reduction, held in Brisbane, Australia, in 2022, included a spotlight session to explore how the operationalization of the Bangkok Principles for the implementation of the health aspects of the Sendai Framework for Disaster Risk Reduction 2015–2030 and the Health Emergency and Disaster Risk Management Framework could support health system resilience. The session was focused on sharing good practices on how multi-hazard disaster risk management strategies, climate-change adaptation in the health sector and the strengthening of health systems could enable progress on reducing health risk and minimize the health impacts of disasters and climate change.

31. According to the statement of the co-Chairs of the Asia-Pacific Ministerial Conference on Disaster Risk Reduction, resilient health systems that could withstand the challenges of transboundary health emergencies and other crises were critical for the well-being and resilience of communities and individuals. The co-Chairs called upon "governments and stakeholders to apply the Bangkok Principles and share lessons identified".[7]

32. Through the issue-based coalition on building resilience, the Commission and the United Nations Office for Disaster Risk Reduction, together with partners, are moving forward with the actions called for by countries at the Asia-Pacific Ministerial Conference on Disaster Risk Reduction. As co-leads of the component on strengthening the integration of health emergencies into disaster risk reduction throughout Asia and the Pacific, the Commission and the United Nations Office for Disaster Risk Reduction, along with partners including the United Nations Population Fund and the United Nations Office for Project Services, are jointly developing guidance tools that will support the implementation of the health aspects of the Sendai Framework, specifically by taking note of the Bangkok Principles and other

[7] See https://apmcdrr.undrr.org/sites/default/files/inline-files/Co-chairs%E2%80%99%20Statement_APMCDRR%202022_0.pdf.

regional and subregional frameworks that promote an integrated health approach. The guidance tools will be shared with member States and experts during the eighth session of the Global Platform for Disaster Risk Reduction, to be held in 2024, followed by the 2024 Asia-Pacific Ministerial Conference on Disaster Risk Reduction.

33. A key example of a guidance tool – an innovative digital storyboard – is to be developed in 2023 and incorporated with the Risk and Resilience Portal. The tool will highlight the three key components of bringing resilience to the interlinkages between climate, disaster and health, namely, a deeper understanding of the risk dynamics inherent to the disaster-health-climate riskscape; the pathways to implement the health aspects of the Sendai Framework and the Bangkok Principles; and the building of resilience in health infrastructures to mitigate impacts emerging from the disaster-health-climate riskscape. Lastly, the Commission, under the Asia-Pacific Disaster Resilience Network, has strengthened partnerships to provide comprehensive data and policy analysis to member States. In particular, various products from the Risk and Resilience Portal have been integrated into the Regional Resilience Data and Analytics Service portal of the Regional Integrated Multi-hazard Early Warning System for Africa and Asia and the World Bank and mainstreamed into the Asia-Pacific Knowledge Management Hub; the Flood Resilience Portal; the United Nations Framework Convention on Climate Change; the *APAN Adaptation Digest* of the Asia Pacific Adaptation Network; and PreventionWeb of the United Nations Office for Disaster Risk Reduction. The Commission has strengthened its partnership with the Institute for Global Environmental Strategies and will use both the Portal and the Asia-Pacific Climate Change Adaptation Information Platform of the National Institute for Environmental Studies of Japan to deliver a seamless flow of climate and disaster data and policy analysis to the region, subregions and at-risk countries in the short, medium and long term.

IV. Building on present trends for the future

34. The year 2022 marked a turning point. With the global stocktaking under the Paris Agreement set to take place during the twenty-eighth session of the Conference of the Parties to the United Nations Framework Convention on Climate Change, to be held from 30 November to 12 December 2023, and the Climate Ambition Summit to be convened by the Secretary-General in September 2023, the time has come to seize the momentum and move forward with a comprehensive agenda for disaster and climate resilience.

35. Broader partnerships for integrated and transformative approaches for climate action are required, placing resilience to all shocks and disaster at the heart of just and sustainable development. As COVID-19 becomes endemic, the lessons learned from the pandemic should be mainstreamed into a “think resilience” approach, one that removes the existing silos and works in a systemic and comprehensive manner, even for people living at the last mile, as outlined in the note by the secretariat on a regional strategy to achieve early warnings for all by 2027 in Asia and the Pacific.[8]

[8] ESCAP/CDR(8)/4.

36. In particular, in support of the Executive Action Plan on Early Warnings for All, 2023–2027,[9] and the recommendations of the midterm review of the Sendai Framework, efforts could be made to integrate health and disaster into multi-hazard early warning systems, with health components being incorporated into the four pillars of early warning systems: risk knowledge; monitoring and warning dissemination; communication; and response. Countries with multi-hazard early warning systems that offer only limited to moderate coverage have a mortality ratio that is nearly eight times that seen in countries with substantial to comprehensive coverage. While just over 50 per cent of countries in Asia and the Pacific have reported that they provide climate services at an average level, many countries are still only able to provide basic climate services, or none at all. Gaps in early warning systems should be addressed to reduce the fatality rates in the region. Strengthening multi-hazard early warning systems should also involve addressing the gaps in the existing systems to meet the needs of women; persons with disabilities; older persons, a group that has a higher ratio of women than the general population; and any other group that has been identified as vulnerable to disaster- and health-related issues.[10]

V. Issues for consideration by the Committee

37. Taking into consideration the gaps identified in the midterm review of the Sendai Framework, in particular in terms of policy coherence and the needs and opportunities for scaling up cooperation, the Committee on Disaster Risk Reduction may wish to take the following actions:

(a) Provide guidance on the future work of the Committee and the secretariat, taking into consideration the emerging trends from the midterm review of the implementation of the Sendai Framework;

(b) Recommend that members and associate members continue to evolve strategies, as well as to further develop policy toolkits and guidelines on building disaster, climate and health resilience, covering the period 2023–2030;

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

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[9] World Meteorological Organization, “Early Warnings for All initiative scaled up into action on the ground”, press release, 21 March 2023. Available at https://public.wmo.int/en/media/press-release/early-warnings-all-initiative-scaled-action-ground#:~:text=The%20Early%20Warnings%20For%20All%20Initiative%20(EW4All)%20was%20formally%20launched,by%20the%20end%20of%202027.

[10] See ESCAP/79/11.