United Nations E/ESCAP/CDR(5)/1

Economic and Social Council

Distr.: General
1 August 2017

Original: English

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

Fifth session
Bangkok, 10-12 October 2017
Item 4 of the provisional agenda*
Disaster risk reduction and resilience in the 2030 Agenda for Sustainable Development

Disaster risk reduction and resilience in the 2030 Agenda for Sustainable Development

Note by the secretariat

Summary

Reducing disaster risk and building resilience are interrelated thrusts of the 2030 Agenda for Sustainable Development and the Sendai Framework for Disaster Risk Reduction 2015-2030. This convergence offers unprecedented opportunities towards building resilience in Asia and the Pacific, the world's most disaster-prone region. Dealing with shared risks and vulnerabilities among countries in the region requires synchronization of policy actions and strengthened regional cooperation.

Drawing from the key findings of the forthcoming *Asia-Pacific Disaster Report 2017*, the present document highlights progress in attaining the Sustainable Development Goals relating to disaster risk reduction and resilience. Also presented are opportunities for the Economic and Social Commission for Asia and the Pacific to support the coherent implementation across regional development frameworks, namely the regional road map for implementing the 2030 Agenda for Sustainable Development in Asia and the Pacific and the Asia Regional Plan for Implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030. Finally, the document includes a strategy for an integrated approach to implementing the Asia-Pacific disaster resilience network, which is comprised of the following pillars: (a) regional platform of multi-hazard early warning system; (b) regional space applications programme for disaster risk reduction; and (c) regional hub of knowledge and innovation to achieve the 2030 Agenda.

The Committee on Disaster Risk Reduction may wish to consider the issues discussed in this document, including the operationalization of the Asia-Pacific disaster resilience network.

* E/ESCAP/CDR(5)/L.1.

I. Introduction

A. Impacts of disasters on sustainable development

1. As the Asia-Pacific region experiences rapid economic growth, disaster risk is outpacing resilience. The countries with the highest exposure to disaster risk often have low capacity to mitigate them. Current economic losses from disasters amount to an average of $50 billion annually in the region, while average annual losses are projected to reach $160 billion by 2030.[1] Notably, these economic costs do not tell the entire story. The assessments are made based on asset losses; they do not capture the impact on livelihoods, consumption and future prospects. With the inclusion of well-being losses, the average annual estimates rise to $350 billion.[2]

2. Disasters affect a wide spectrum of the Sustainable Development Goals. In the forthcoming *Asia-Pacific Disaster Report 2017,* those impacts are analysed in the context of poverty, food insecurity, urbanization and climate change, highlighting that any efforts aimed at achieving the Sustainable Development Goals must take into account disaster risk.

3. Building resilience is the common thread across the six global development frameworks adopted in 2015 and 2016, namely the Addis Ababa Action Agenda of the Third International Conference on Financing for Development, the Sendai Framework for Disaster Risk Reduction 2015-2030, the 2030 Agenda for Sustainable Development, the Paris Agreement, the Agenda for Humanity and the New Urban Agenda.

4. The framework for the implementation of the 2030 Agenda and its linkages with the Sendai Framework for Disaster Risk Reduction 2015-2030 can help ensure that disaster risk reduction is mainstreamed across all sectors of sustainable development and climate change adaptation (table 1). In particular, disaster risk reduction and resilience-building are targets in the following Sustainable Development Goals: Goal 1 (poverty); Goal 2 (hunger); Goal 11 (sustainable cities and communities); and Goal 13 (climate action). In that regard, the Economic and Social Commission for Asia and the Pacific (ESCAP), in its effort to produce the *Asia-Pacific Disaster Report 2017,* has reviewed the implementation of the 2030 Agenda in Asia-Pacific from the perspective of disaster risk reduction and resilience.

[1] *Asia-Pacific Disaster Report 2017* (United Nations publication, forthcoming).

[2] Stephane Hallegatte and others, *Unbreakable: Building the Resilience of the Poor in the Face of Natural Disasters* (Washington, D.C., World Bank, 2016). Available from https://openknowledge.worldbank.org/handle/10986/25335.

Table 1
Targets on disaster risk resilience in the Sustainable Development Goals

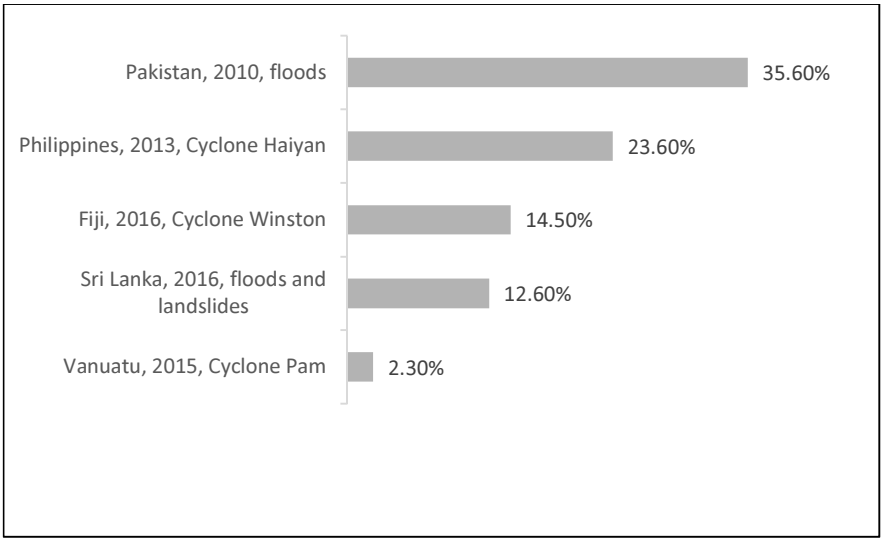
Sustainable Development Goals	Targets on disaster risk resilience
Goal 1: Ending poverty in all its forms everywhere	Target 1.5: By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters
Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture	Target 2.4: By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality
Goal 3: Ensure healthy lives and promote well-being for all at all ages	Target 3d: Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks
Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Target 4a: Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all
Goal 9: Build resilient infrastructure, promote sustainable industrialization and foster innovation	Target 9.1: Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all
Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable	Target 11.5: By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations
Goal 13: Take urgent action to combat climate change and its impacts	Target 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	Target 15.3: By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world

B. Sustainable Development Goal 1 – End poverty: disasters widen inequality and have the greatest impacts on the poor

5. Poor and vulnerable populations bear the brunt of disasters, suffering five times more deaths from disasters.[3] Thus, disasters not only keep people in poverty, but they also can push large numbers of vulnerable people into poverty. During disasters, people living in poverty tend to look for ways to maintain their well-being through various means, such as depleting household assets or borrowing, increasing family labour supply, cutting food consumption and reducing investments in health education, which in the long term can lead to intergenerational poverty; and children become undernourished and drop out of school. Millions have escaped poverty in the Asia-Pacific region over the past decade, largely because of strong economic growth; however, many of them are barely above the poverty line and remain acutely vulnerable to falling back into poverty. It is estimated that after the Gorkha Earthquake in Nepal in 2015, about 3 per cent of the affected population fell back under the poverty line.[4] ESCAP analysis for other disasters show similar results, ranging from 2.3 per cent caused by Cyclone Pam in Vanuatu to 35.6 per cent as a result of the floods in Pakistan in 2010 (see figure I).[5]

6. Conservative estimates indicate that natural hazards force some 26 million people into poverty each year. For example, two million people fell into poverty after the Philippines was hit by Typhoon Haiyan in 2013.[6] Building the resilience of people living in poverty, and that of other exceptionally vulnerable groups, such as the region's 3.5 million refugees, should be a top priority in the effort to achieve the Sustainable Development Goals.

Figure I
Estimated percentage of people falling into poverty from selected disasters in the Asia-Pacific region



Source: ESCAP Statistical database and country post-disaster damage assessments.

[3] ESCAP, *Asia-Pacific Disaster Report 2017* (forthcoming), chapter 1.

[4] Nepal, National Planning Commission, *Nepal Earthquake 2015: Post Disaster Needs Assessment* (Kathmandu, 2015).

[5] ESCAP, *Asia-Pacific Disaster Report 2017* (forthcoming), chapter 2.

[6] Stephane Hallegatte and others, *Unbreakable: Building the Resilience of the Poor in the Face of Natural Disasters* (Washington, D.C., World Bank, 2017).

C. Sustainable Development Goal 2 – End hunger: disasters lead to widespread hunger and food insecurity

7. The agriculture sector absorbs more than 20 per cent of direct disaster impacts with cascading negative effects across national economies in agrarian countries.[7] Large-scale disasters can result in dramatic drops in agricultural growth. For example, due to major floods in Pakistan in 2010, annual growth in agriculture declined from 3.5 per cent in the previous year to 0.2 per cent, and the national gross domestic product (GDP) fell from 2.8 to 1.6 per cent.[8] The 2012-2013 drought in Tamil Nadu, India, resulted in a 1 per cent decline in agricultural production, which led to a 0.52-per cent reduction in industrial GDP and 0.24 per cent-reduction in service sector GDP.[9]

8. The 2015/2016 El Niño, one of the strongest episodes observed in the last 50 years, triggered severe weather anomalies in the Asia-Pacific region, such as an increase in the frequency of floods, cyclones striking with higher intensity and prolonged drought leading to severe food shortages. Although the long-term impact of the 2015/2016 El Niño has yet to be fully assessed, agriculture appears to be the most severely affected sector across 28 countries in the region (figure II).[10]

[7] Food and Agriculture Organization of the United Nations, *The Impact of Disasters on Agriculture and Food Security* (Rome, 2015). Available from www.fao.org/emergencies/resources/documents/resources-detail/en/c/346258/.

[8] Asian Development Bank, Pakistan, and World Bank, *Pakistan Floods 2010: Preliminary Damage and Needs* Assessment (Islamabad, 2010). Available from www.adb.org/sites/default/files/linked-documents/44372-01-pak-oth-02.pdf.

[9] D.V. S. Sastry and others, "Sectoral linkages and growth prospects: reflections on the Indian economy", *Economic and Political Weekly*, vol. 38, No. 24 (June 2003). Available from www.jstor.org/stable/pdf/4413682.pdf?refreqid=excelsior:3d3f4c71141710135652b21ac665dddd.

[10] United Nations Development Programme and others, *Enhancing Resilience to Extreme Climate Events: Lessons from the 2015-2016 El Niño Event in Asia and the Pacific* (2017). Available from http://www.unescap.org/resources/enhancing-resilience-extreme-climate-events-lessons-2015-2016-el-ni%C3%B1o-event-asia-and.

Figure II
Indicative severity of disaster impacts in South-East Asia, South Asia and the Pacific in 2015-2016

Subregion	*Countries/territories*	*Disaster impact severity by El Niño-associated hazard type (2015-2016 data)*		
		Flood and landslide	*Drought*	*Tropical cyclone*
South-East Asia	Cambodia			
	Indonesia			
	Lao People's Democratic Republic			
	Malaysia			
	Myanmar			
	Philippines			
	Thailand			
	Viet Nam			
South Asia	Afghanistan			
	Bangladesh			
	Bhutan			
	India			
	Nepal			
	Pakistan			
	Sri Lanka			
North Pacific	Marshall Islands			
	Micronesia (Federated States of)			
	Palau			
Central Pacific	Kiribati			
	Niue			
	Samoa			
	Tonga			
	Tuvalu			
South Pacific	Fiji			
	New Caledonia			
	Papua New Guinea			
	Solomon Islands			
	Vanuatu			

Note: Impact classification is per El Niño-related hazard type (flood and landslide, drought, tropical cyclone) – dark blue: high impact; light blue: low to medium impact; white: no impact/no data. Impact is assessed on number of deaths, number of people affected and total economic damage.

Source: United Nations Development Programme and others, *Enhancing Resilience to Extreme Climate Events: Lessons from the 2015-2016 El Niño Event in Asia and the Pacific* (2017). Available from www.unescap.org/resources/enhancing-resilience-extreme-climate-events-lessons-2015-2016-el-ni%C3%B1o-event-asia-and.

D. Sustainable Development Goal 11 – Sustainable cities and communities: urban settlements are increasingly at risk from disasters

9. Many of the cities in the Asia-Pacific region that have emerged as economic growth engines are located in high disaster risk areas. The top four cities at greatest risk based on the Global City Risk Index are from the region, namely Taipei, Tokyo, Seoul and Manila.[11]

10. The future of Asia is urban, but the unplanned urban sprawl and new cities is increasing the exposure of millions of people and billions of dollars of economic stock to disasters. The occurrence of a major earthquake that would kill millions of people is already a real risk.[12] Although many of the megacities in the region have in place plans to deal with disaster risk, urgent action must be taken by small towns and medium sized-cities, as about 50 per cent of the urban population of the region lives in those centres.[13]

11. The urban poor, in particular, are at great risk from disaster impacts, including from climate change. As cities tend to account for a significant portion of GDP growth, which is needed to alleviate poverty, disasters put economic growth increasingly at risk. Dhaka, for example, with a population that exceeds 13 million, is one of the largest megacities in the world and has a high proportion of poor people. The city accounts for more than one third of the national GDP.[14] As Dhaka is a sprawling city, a large part of which is only slightly above sea level, hazardous weather conditions, such as a storm surge or heavy rain, often lead to massive flooding.

12. While cities in the Asia-Pacific region are already at risk and are likely to be climate change hotspots in the future, they can also be engines for safety and sustainability by demonstrating how governance, technology and people's power can be harnessed to manage risks effectively.[15] Three cities in Indonesia – Greater Jakarta, Bandung and Surabaya – are adopting a "people as sensors" paradigm and using social media for gathering, sorting and displaying information about flooding in real time. Many innovative solutions are emerging across the region, which give hope of a safer future despite growing risks.

E. Sustainable Development Goal 13 – Climate action: climate change is compounding disaster risk

13. Climate projections for 2030 highlight that the Asia-Pacific region will be warmer by 1.5°C to 2.0°C. This can trigger greater monsoon variability, El Niño and La Niña events and more intense and frequent heat waves. The region's climate change "hotspots" – deltas, semi-arid regions and glaciers

[11] Danan Gu and others, "Risks of exposure and vulnerability to natural disasters at the city level: a global overview", Department of Economic and Social Affairs, Population Division Technical Paper, No. 2015/2 (New York, 2015). Available from https://esa.un.org/unpd/wup/Publications/Files/WUP2014-TechnicalPaper-NaturalDisaster.pdf.

[12] Ibid.

[13] Ibid.

[14] "Dhaka division home to highest number of poor", *The Daily Star* (Dhaka), 28 August 2014. Available from www.thedailystar.net/dhaka-division-home-to-highest-number-of-poor-39031.

[15] Asian Development Bank, *Key Indicators for Asia and the Pacific 2016* (Manila, 2016). Available from www.adb.org/sites/default/files/publication/204091/ki2016.pdf.

and snowpack-dependent river basins – are vulnerable to the effects of those events.[16]

14. In the *Asia-Pacific Disaster Report 2017*, the following trends are highlighted:

(a) In Bangladesh, China, India and Pakistan losses resulting from floods are expected to increase by two to three times from current levels by 2030. Relative to GDP losses, the most affected countries will be Bangladesh, India, Myanmar and Pakistan.

(b) Under moderate and severe climate change scenarios, the flood losses are projected to increase by 2 to 6 times in the Ganga-Brahmaputra and Meghna basin; 1.5 to 5 times in the Indus basin; 1.2 to 2 times in the Mekong basin; and 1.1 to 1.5 in the Amur basin. It is important to note that these transboundary basins have served as home to a large number of the poor and vulnerable population.

(c) Tropical cyclones will have shorter return periods with increasingly destructive potential stemming from storm surges and wind speeds. The track and occurrence of a tropical cyclone may shift eastward or northward in the West and North Pacific basin. Exposure to them will cause threefold increases in damage and losses if no adaptation actions are taken.

(d) Drought risk will increase substantially and the shift in the location of drought in South Asia will be towards the West, while in South East Asia, it will be towards the East. The change in the areas affected by drought will complicate efforts to manage the risk.

(e) Under different climate scenarios, incomes of countries could drop substantially, with low-income populations losing an even greater proportion of their income. However, 40 to 68 per cent of the losses anticipated up to 2030 – under severe climate change scenarios – could be averted through adaptation measures whose economic benefits outweigh their costs.[17]

15. The drastic changes in climate and their risk patterns suggest that historical data and past experiences are insufficient for making projections. Greater attention needs to be placed on identifying potential scenarios, determining risk tolerance and considering the uncertainties associated with climate change. Methodologies used to aid decision-making under conditions of uncertainty are based on, for example, cost-benefit analysis, ex-ante probabilistic risk assessment, and applying a scenario-based approach. Often, a mix of these methodologies are used.[18]

II. Resilience in the global development frameworks

16. The global development frameworks adopted in 2015 and 2016 are structured around six separate but interrelated agreements: (a) Sendai Framework for Disaster Risk Reduction 2015-2030; (b) 2030 Agenda for Sustainable Development; (c) Paris Agreement under the United Nations Framework Convention on Climate Change; (d) Agenda for Humanity; (e) New Urban Agenda; and (f) Addis Ababa Action Agenda of the Third International

[16] ESCAP, *Asia-Pacific Disaster Report 2017* (forthcoming), chapter 5.

[17] Economics of Climate Adaptation Working Group, *Shaping Climate-Resilient Development: A Framework for Decision-Making* (2009). Available from http://media.swissre.com/documents/rethinking_shaping_climate_resilent_development_en.pdf.

[18] Ibid.

Conference on Financing for Development. Building resilience to disasters is a common theme in these frameworks. Collectively, they provide a comprehensive global framework for the Secretary General's call for a "shared understanding of sustainability, vulnerability and resilience".[19]

17. The overarching goal of the Sendai Framework is to strengthen resilience. This is reaffirming the commitment made by the United Nations Conference on Sustainable Development to build resilience to disasters with a renewed sense of urgency within the context of sustainable development and poverty eradication, and to integrate this into policies, plans, programmes and budgets at all levels.

18. Resilience is featured prominently throughout the Sustainable Development Goals and is regarded as a quality to be "built", "developed" and "strengthened", as a tool to reduce the exposure of people to hazards and as a foundation for inclusive economic growth and prosperity. The term is also used in relation to inclusive and safe cities, and high-quality and reliable infrastructure. Disaster risk reduction and resilience is clearly embedded in nine of the goals and associated targets. These goals and targets are expected to stimulate action over the next 15 years in areas of critical importance for a sustainable and resilient future.

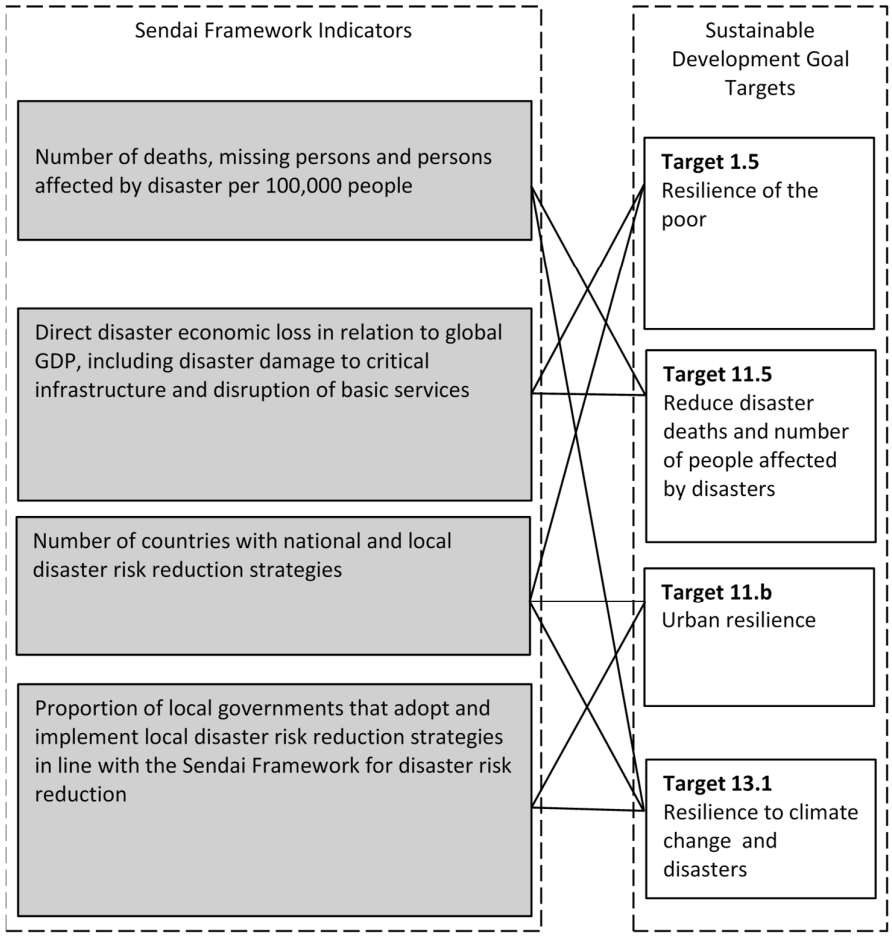
[19] See www.agendaforhumanity.org/sites/default/files/WHS%20Commitment%20to%20action%20-%20transcending%20humanitarian-development%20divides_0.pdf

Box 1
Monitoring disaster risk reduction and resilience

The Sendai Framework and the Sustainable Development Goals include global targets and mechanisms for the development of indicators for measuring progress in achieving them. The indicators are aligned with each other.[a] The Sendai Framework indicators contribute to measuring four of the Sustainable Development Goals targets, as indicated in the figure below.[b]

The objective is to establish data reporting mechanisms that ensure consistency between the reporting of indicators of the Sendai Framework and those of the Sustainable Development Goals, as well as in the data aggregation at the subregional and regional levels, analysis and preparation of progress reporting.

Coherence between the Sendai Framework and Sustainable Development Goals



[a] See E/CN.3/2016/2/Rev.1.

[b] See A/71/644.

[c] See ESCAP, *Asia-Pacific Disaster Report 2017* (forthcoming).

19. Resilience is also included in the Paris Agreement, particularly with regard to building adaptive capacity and reducing vulnerabilities to the adverse effects of climate change. Specifically, building resilience is seen as means for reducing loss and damage associated with the impacts of climate change.

20. Other key frameworks – the New Urban Agenda, the Agenda for Humanity and the Addis Ababa Action Agenda – echo the importance of building disaster resilience.

A. Coherence for resilience across the frameworks

21. Cohesiveness and mutual understanding of resilience is of utmost importance in implementing those agendas. This cohesiveness can be based on the common elements of resilience in the frameworks.

22. The Thematic Working Group on Disaster Risk Reduction and Resilience of the Asia-Pacific Regional Coordination Mechanism presented the contents of a forthcoming guidance note for policymakers on building resilience to disasters for implementing the 2030 Agenda in Asia and the Pacific during a side event at the Fourth Asia-Pacific Forum for Sustainable Development, held in Bangkok from 29 to 31 March 2017.[20] The presentation included several action points to ensure coherence across the disaster risk frameworks (see box 2 for details).

23. The action points given in the guidance note provide insights for the countries in the region in developing national strategic action plans to address resilience across all sectors as highlighted in the global development frameworks adopted in 2015 and 2016. Under these frameworks, the need for coherence is stressed. Coherence can be achieved through several measures: the plans should be developed by the apex body responsible for planning and development to build resilience across all sectors. Financing for implementation of the plan needs to come from a mix of public, private and donor resources. Robust monitoring systems need to be developed to ensure that the relevant data is captured informing future interventions and reporting seamlessly to the relevant global agreements (figure III).

Box 2
Action points for building resilience by ensuring coherence across the global development frameworks

(a) **Sustainable development is at the core** of all the global development frameworks. There is general agreement on the classic definition of sustainable development that calls for balancing the three dimensions of sustainable development: economic, social and environmental. These concepts run through the entire Sustainable Development Goals, and are reiterated in no uncertain terms in the Sendai Framework, the Paris Agreement and the New Urban Agenda. Even the Agenda for Humanity underscores the need to address the root causes of a crisis arising out of practices that are not sustainable in the long term.

(b) **Resilience to disasters is at the heart of the sustainable development agenda** of the frameworks.[a] The paradigm shift from prevention to resilience that began with the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters is reiterated and strengthened in the global development frameworks set since 2015.

(c) **Resilience is a cross-cutting issue** that concerns multiple disciplines and sectors. The Hyogo Framework for Action first underscored ecosystem management, social and economic development practices, and land-use planning as the three key sectors for building resilience, while the Sendai Framework broadened it to include the private sector. The 2030 Agenda, as well as the other agendas, cut across all sectors; therefore, no single sector or agency of government at any level can solely handle the issues of resilience; dealing with these issues must be done through collective efforts of the government in what is often described as the "whole of government" approach.

[20] United Nations Development Programme and others, *Enhancing Resilience to Extreme Climate Events: Lessons from the 2015-2016 El Niño Event in Asia and the Pacific* (2017). Available from www.unescap.org/resources/enhancing-resilience-extreme-climate-events-lessons-2015-2016-el-ni%C3%B1o-event-asia-and.

(d) **Building resilience is not the task of government alone**, it is everybody's business. Multi-stakeholder participation in building resilience is emphasized in the global frameworks. One of the guiding principles of the Sendai Framework is "all-of-society engagement and partnership". The Paris Agreement provides for a technology mechanism for "accelerating, encouraging and enabling innovation". The multi-stakeholder approach for resilience also called for in the New Urban Agenda and the Agenda for Humanity.

(e) **Building resilience depends on strong coordination mechanisms** within and across sectors, requiring the full engagement of State institutions of an executive and legislative nature at national and local levels; this is stated as a guiding principle of the Sendai Framework, and highlighted in the Paris Agreement and the Agenda for Humanity.

(f) **Resilience can be strengthened through research and the innovative application of science and technology**. The Sendai Framework calls for enhancing "access to and support for innovation and technology" and "long-term, multi-hazard and solution-driven research and development in disaster risk management".[b] The Sustainable Development Goals highlight the need of innovations in science and technology in all relevant fields and these are built into the targets of some of the Goals.[c] Article 10 of the Paris Agreement deals with the "long-term vision of technology development and transfer" to improve resilience to climate change.[d]

(g) **Resilience can be achieved through planning and investments** across various development sectors. The critical importance of planning and investments for building resilience is highlighted in the global development frameworks. "Investing in disaster risk reduction for resilience" is one of the four priorities for action of the Sendai Framework. "Mobilizing climate finance from a wide variety of resources, instruments and channels", with developed countries taking the lead to assist the developing countries is one of the hallmarks of the Paris Agreement.[e] Planning and financing of housing and urban development activities run through the entire New Urban Agenda, while in the Agenda for Humanity "investing on humanity" and shifting from ad hoc "funding" to regular "financing" for humanitarian action is called for.[f] Financing sustainable development across the pillars of the 2030 Agenda is at the core of the Addis Ababa Action Plan.

(h) **Resilience requires development of capacity** across all sectors and at all levels. The Sendai Framework prescribes capacity development in all its dimensions – scientific, technical, financial and administrative; among all sections – poor, other vulnerable groups and women; and at all levels – local, national, regional and global. Capacity development is a component in 12 out of 17 Sustainable Development Goals.[g] Article 11 of the Paris Agreement focuses on enhancing the capacity of the countries that are particularly vulnerable to the adverse effects of climate change, such as small island developing States, to take effective action on climate change, including adaptation and mitigation.

(i) **Resilience can be facilitated and strengthened through international and regional cooperation**. The six global development frameworks under discussion have emphasized such cooperation through the established mechanisms of the United Nations, multilateral financial institutions and North-South and South-South triangular cooperation. In the Sendai Framework, there is a global target to substantially enhance international cooperation to developing countries to complement their national actions for implementation of the framework. The 17 Sustainable Development Goals focus on cooperation issues. International cooperation encompasses half of the Addis Ababa Action Agenda. "Enhanced international cooperation and partnerships among governments at all levels" is highlighted in the New Urban Agenda, while in the Agenda for Humanity, there is a call for an international order that is based on "solidarity and collaboration – with people at its centre".

(j) **Progress achieved in building resilience must be monitored**. The global development agendas were framed with an emphasis on achieving goals and targets. The Sendai Framework consists of seven global targets, the 17 Sustainable Development Goals comprises 169 targets, and the Paris Agreement is aimed at keeping the increase in global average temperature to well below 2°C above pre-industrial levels. As the Paris Agreement is a legally binding document, the Conference of the Parties is entrusted with periodically taking stock and assessing progress made at the global and national levels towards achieving climate resilience. The New Urban Agenda encourages "voluntary, country-led, open, inclusive, multilevel, participatory and transparent follow-up and review. Therefore, it is imperative that strong mechanisms be set up to monitor the implementation of the frameworks and measure the progress achieved by the national Governments.

[a] *Asia-Pacific Disaster Report 2015: Disasters without Borders – Regional Resilience for Sustainable Development* (United Nations publication, Sales No. E.15.II.F.13).

[b] See General Assembly resolution 69/283, annex II, paras 25 (g) and (i).

[c] Technology development and transfer forms part of the targets of seven Sustainable Development Goals. These are targets 1.4, 2.a, 4.b, 5.b, 7.a, 7.b, 9.b, and 14.a.

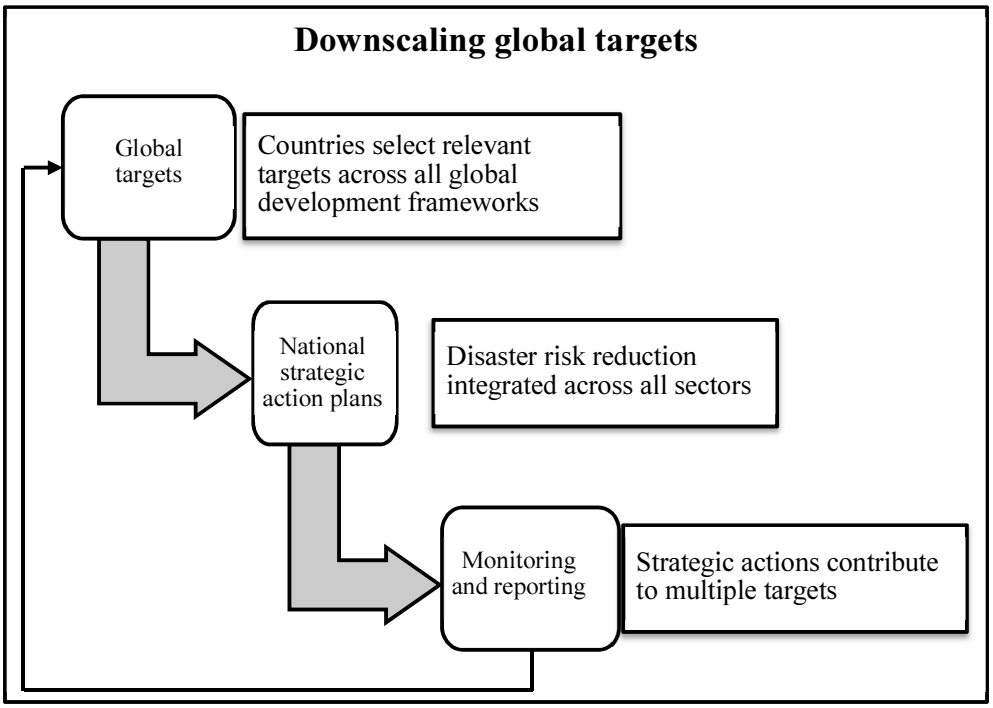
[d] See FCCC/CP/2015/10/Add.1, annex, articles 10 (1) and 10 (4).

[e] Ibid, article 9.

[f] Sandra Aviles, "Finance outcomes, not fragmentation: shift from funding to financing" (New York, Agenda for Humanity, 2017). Available from www.agendaforhumanity.org/sites/default/files/AP_5D_0.pdf.

[g] These include the targets 2.a, 3.d, 6.a, 8.10, 11.3, 12.a, 13.1, 13.3, 14.6, 14.a, 15.c, 16.a, and 17.9.

Figure III
Step-wise process to make efforts to build resilience coherent across the global development frameworks



B. Convergence between disasters and conflicts in Asia-Pacific

24. The Secretary-General has made the prevention of conflicts and crises the primary goal of the United Nations, and is particularly focused on areas of the world where violent conflict, humanitarian crises, and impacts from disasters and climate change converge (see box 3). This conflict-humanitarian-disaster nexus will focus the efforts of United Nations agencies towards building peace and preventing fragile situations from becoming full-blown crises.

Box 3
The vision of the Secretary-General on prevention

In a statement about the vision of the United Nations on prevention, the Secretary-General noted that [the United Nations] is "doing everything that we can to help countries to avert the outbreak of crises that take a high toll on humanity, undermining institutions and capacities to achieve peace and development", while noting that the 2030 Agenda and sustaining peace are essential to long-term prevention. In the light of the increasing number of climate-related disasters and more intense destructive powers, he made the following recommendations to prevent societies from entering into a crisis:

- Ensure that societies are resilient through investment in inclusive and sustainable development, including concerted climate action and management of mass migration;
- Address inequalities, strengthen institutions and ensure that development strategies are risk-informed to prevent the fraying of the social fabric that could erupt into crisis;
- Invest more to help countries build strong and inclusive institutions and resilient communities.

He also noted that development is the key to prevention and that an effective and broad focus on prevention would generate more investment and concerted efforts aimed at achieving the Sustainable Development Goals.[a]

[a] See The Vision of the Secretary General on Prevention (2017). Available from www.un.int/news/sg-updates-reform-agenda.

25. There are significant differences between natural hazards and situations of fragility and/or conflict — disasters can be rapid, one-off events, while conflicts are often protracted and political. However, the effects of both can be long and drawn-out. Risk must therefore become a central and cross-cutting feature of development, humanitarian and security agendas in order to be able to cope with the increasing frequency and intensity of complex and converging crises.[21]

26. Most of the analytical research in disaster-prevention and peacebuilding is conducted in Africa and the Middle East. Consequently, more work needs to be directed towards understanding issues specifically related to disaster and conflict in Asia and the Pacific.

27. Evidence indicates that conflict and fragile conditions increase vulnerability to hazards and can weaken the capacity of governments and local institutions to protect communities from and respond to disasters; they can also exacerbate conflict fault-lines and social exclusion.[22] A recent study has found a coincidence rate of 9 per cent between conflict outbreak and disaster occurrence, such as heat waves or droughts, globally. The analysis also revealed that about 23 per cent of conflict outbreaks in highly ethnically fractionalized countries coincide heavily with climatic calamities.[23] In the Asia-Pacific region, the convergence of drought and conflict is concerning. The prolonged nature of drought can contribute to sustained conflict, especially among agriculture-dependent groups and politically excluded groups in extremely poor countries.[24] A severe drought threatens local food security, aggravates humanitarian conditions, often triggers large-scale human displacement and may provide the breeding ground for sustained conflict. Hence, it is critical to strengthen the adaptive capacities of agriculturally dependent communities, particularly in areas prone to conflict.[25]

28. A recent review of disaster risk management suggests that disaster risk reduction programmes should be "conflict sensitive" and peacebuilding should be "hazard-proof"'. In other words, disaster risk reduction initiatives should be implemented in ways that do not provoke further disputes or conflict, and community cohesion must be protected against the disruption that hazards and the unsustainable use of natural resources can cause. Environmental management, conflict management and disaster risk reduction should be linked to each other This is also the case for poverty reduction and livelihoods programmes. Clearly this works better for some types of conflict, such as

[21] Global Facility for Disaster Risk Reduction; Germany, Ministry for Economic Cooperation and Development; and German Agency for International Cooperation, *Disasters, Conflict and Fragility: A Joint Agenda* (2015). Available from www.giz.de/en/downloads/giz2016-en-Disasters-Conflict-Fragility.pdf.

[22] Ibid.

[23] Carl-Friedrich Schleussner and others, "Armed-conflict risks enhanced by climate-related disasters in ethnically fractionalized countries", *Proceedings of the National Academy of Sciences of the United States of America*, vol. 113, No. 33 (August 2016). Available from www.pnas.org/content/113/33/9216.full.

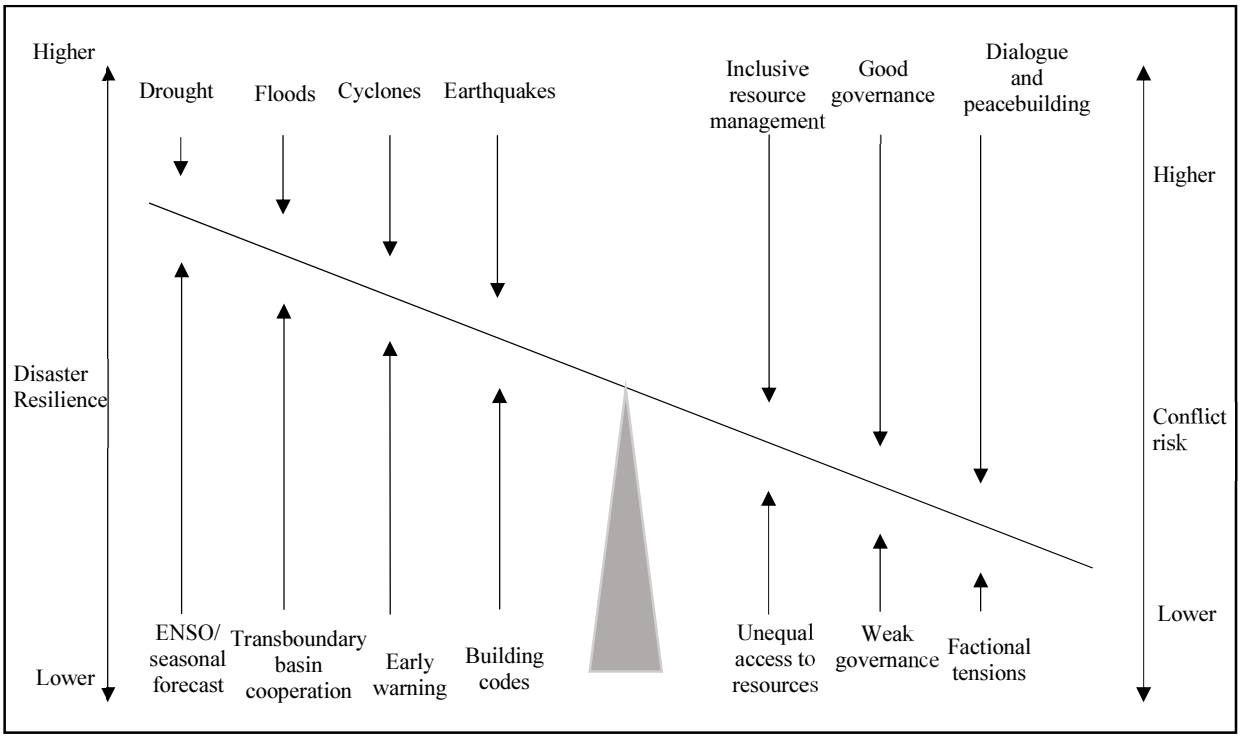
[24] ESCAP, *Asia-Pacific Disaster Report 2017* (forthcoming).

[25] Nina von Uexkul and others, "Civil conflict sensitivity to growing-season drought", *Proceedings of the National Academy of Sciences of the United States of America*, vol. 113, No. 33 (August 2016). Available from www.pnas.org/content/113/44/12391.full.pdf.

environmental conflict or conflict over contested natural resources, than for others, such as power struggles or ethnic conflict.[26]

29. The *Asia-Pacific Disaster Report 2017*[27] provides an analysis of the issues and challenges associated with disaster prevention and peacebuilding processes in the region. However, more in-depth analytical research is required because of the complexity and seriousness of the issues. As illustrated in figure IV, effective disaster risk reduction interventions can help tip the balance to greater resilience and lower the chances of conflict; however, other factors, such as natural resource management, governance, and ethnic or other tensions, tend to play a greater role in determining whether the risk of conflict is reduced or increased.[28]

Figure IV
Effective disaster risk reduction interventions to build resilience and reduce the likelihood of conflict



Abbreviation: ENSO, El Niño-Southern Oscillation.

Source: ESCAP, *Asia-Pacific Disaster Report 2017* (forthcoming).

[26] John Twigg, *Disaster Risk Reduction* (London, Overseas Development Institute, 2015). Available from http://goodpracticereview.org/wp-content/uploads/2015/10/GPR-9-web-string-1.pdf.

[27] ESCAP, *Asia-Pacific Disaster Report 2017* (forthcoming), chapter 6.

[28] ESCAP, *Asia-Pacific Disaster Report 2017* (forthcoming), chapter 7.

III. Role of the Economic and Social Commission for Asia and the Pacific in efforts to make resilience coherent across the 2030 Agenda

30. Many countries in the region are developing strategies for building resilience to disasters, taking into account the pattern of its current and emerging risks, national laws, policies, commitments, resources and capacities and considering the common principles in the global and regional frameworks. In addition, countries are aiming to strengthen regional mechanisms essential for supporting their efforts. The Commission adopted two important resolutions during its seventy-third session, which are focused on making the efforts to build resilience across the 2030 Agenda coherent.

31. First, in resolution 73/9 on a regional road map for implementing the 2030 Agenda for Sustainable Development in Asia and the Pacific, the Commission requested ESCAP, as the convener of the Asia-Pacific Regional Coordination Mechanism, to strengthen and promote communication, cooperation and collaboration among the relevant organizations of the United Nations system in the Asia-Pacific region and other stakeholders, as appropriate, in support of the implementation of the Sustainable Development Goals by member States, in particular among least developed countries, landlocked developing countries and Pacific island developing countries. In the regional road map, disaster risk reduction and resilience is identified as a key thematic area for its implementation.

32. Second, in resolution 73/7 on enhancing regional cooperation for the implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030 in Asia and the Pacific, the Commission requested ESCAP to accord priority to synchronizing multi-disciplinary support to member States in the mainstreaming of disaster risk reduction in their development strategies, in line with the Sendai Framework and with the Sustainable Development Goals and targets relating to disaster risk reduction.

33. It should also be noted that the Commission, in its resolution 71/12 on strengthening regional mechanism for the implementation of the Sendai Framework for the Disaster Risk Reduction 2015-2030 in Asia and the Pacific, requested ESCAP to guide actions at the regional level through agreed regional and subregional strategies and mechanisms to strengthen disaster risk modelling, assessment, mapping, monitoring and multi-hazard early warning systems, particularly those related to hydrometeorological issues, by deepening existing regional cooperation mechanisms.

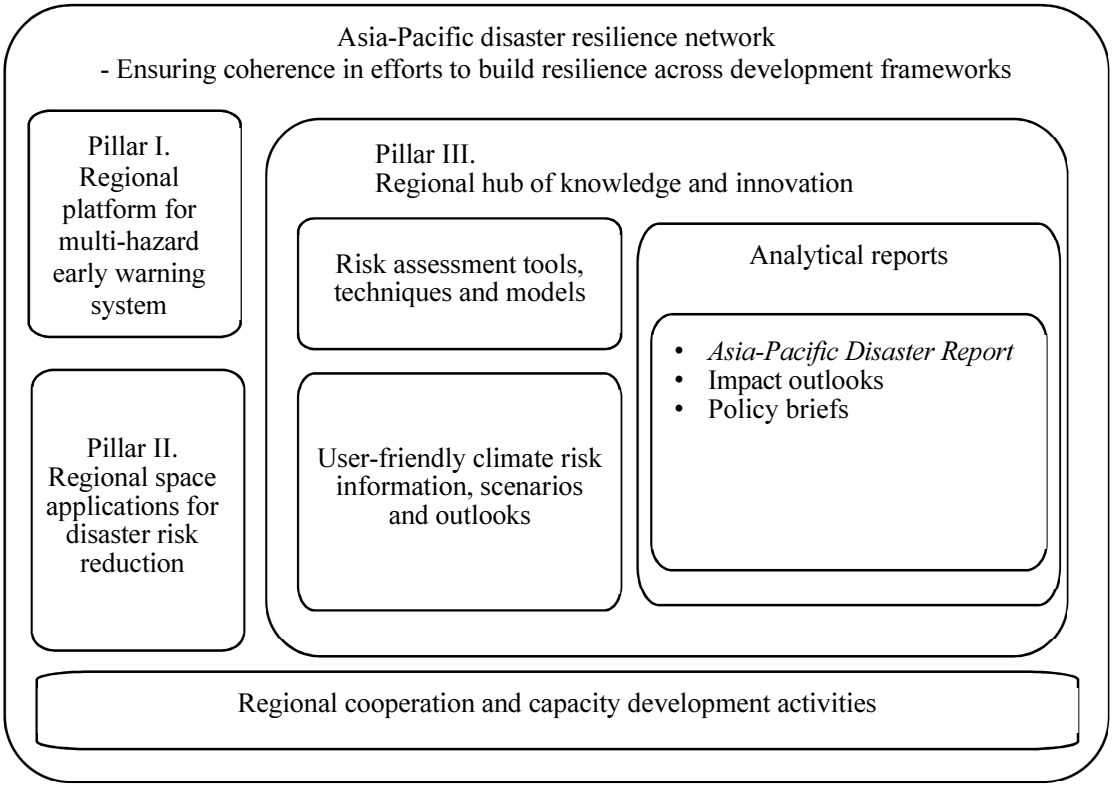
34. These mandates define the secretariat's role in mainstreaming disaster risk reduction across the various sectors of sustainable development. Based on this, the following section contains an outline of a holistic and integrated approach for organizing the work programme of ESCAP and related activities directed towards achieving the goals and targets relating to disaster risk reduction and resilience.

Asia-Pacific disaster resilience network

35. Countries are at different stages of developing strategies to build resilience to disasters. The development and implementation of those plans require guidelines across all relevant sectors of development along with the means of implementation, such as enabling technologies, finance and capacity-development activities.

36. Taking this into consideration, the secretariat proposes that an Asia-Pacific disaster resilience network be set up to help align the efforts of countries pertaining to disaster risk reduction and building resilience in implementing the 2030 Agenda with those being undertaken under the Sendai Framework (figure V).

Figure V
Schematic diagram of the proposed Asia-Pacific disaster resilience network



37. The objective of the Asia-Pacific disaster resilience network would be to forge existing knowledge and capacities through interrelated pillars, such as the regional platform for multi-hazard early warning systems (see E/ESCAP/CDR(5)/2), the regional space applications for disaster risk reduction (see E/ESCAP/CDR(5)/INF/3), and a regional hub of knowledge and innovation.

38. The regional hub of knowledge and innovation would serve as a platform for analytical research and norm setting. It would build on the analytical work of ESCAP:

(a) Analytical Reports: The biennial *Asia-Pacific Disaster Report* has been on the front line of efforts to build evidence-based research and practices and provide in-depth analysis of the impacts of natural disasters on sustainable development in the region. The previous editions of the report have provided evidence for policymaking related to disasters and development in the region. The forthcoming edition provides an analysis and policy recommendations for incorporating resilience-building and disaster risk reduction in the efforts to attain Sustainable Development Goals 1, 2, 11 and 13.[29] It is being developed to serve as a knowledge resource for member countries to make the implementation of

[29] ESCAP, *Asia-Pacific Disaster Report 2017* (forthcoming).

the 2030 Agenda pertaining to disaster risk reduction coherent. The report will also be used to track the regional status and progress towards achieving the goals and targets that are common to the Sendai Framework and the 2030 Agenda[30] and cooperation under the regional road map. Beyond reporting on specific indicators, the future Asia-Pacific Disaster Reports will address the issues related to the annual themes of the high-level political forum on sustainable development.

(b) Regional guidebooks: Mainstreaming disaster risk reduction in development plans has been highlighted in the global and regional frameworks on disaster reduction and reiterated in national policies and frameworks set in the Asia-Pacific region, but the progress achieved in this area has been limited. Similarly, although mainstreaming climate change adaptation in development processes is highlighted in the decisions of several meetings of the Conference of Parties to the United Nations Framework Convention on Climate Change, limited progress has been achieved in this. Several countries have noted the similarities in approaches and methodologies applied for mainstreaming disaster risk reduction and climate change and have emphasized the need to integrate them into development frameworks. However, effective integration has only taken place in a few countries and only in some sectors. Some common issues and challenges can be addressed through regional guidance materials. In this regard, ESCAP has developed a suite of knowledge products under the project entitled "Enhancing Knowledge and Capacity to Manage Disaster Risk for a Resilient Future in Asia and the Pacific" with support from the ninth tranche of the United Nations Development Account (for details see box 4).

Box 4
ESCAP knowledge products to ensure coherence between the 2030 Agenda and Sendai Framework

1. A guidance note for policymakers entitled "Building resilience to disasters for implementing the global frameworks in Asia and the Pacific" has been developed to help make internationally agreed agendas and frameworks consistent with each other. It is a joint product of the Thematic Working Group on Disaster Risk Reduction and Resilience of the Asia-Pacific Regional Coordination Mechanism, co-chaired by ESCAP, UNDP, and the United Nations Office for Disaster Risk Reduction. The guidance note was presented to key policymakers at a side event during the 2017 Asia-Pacific Forum on Sustainable Development. Comments from stakeholders given during the event were taken into account in an update of the note.

2. *Mainstreaming Disaster Risk Reduction for Sustainable Development: A Guidebook for Asia and the Pacific* has been developed to provide policymakers and development practitioners with clear guidelines on how to mainstream disaster risk reduction across different sectors of development. The guidebook was updated with member country inputs submitted at the Regional Capacity Development Workshop: Mainstreaming Disaster Risk Reduction in Sustainable Development Planning, which was organized by ESCAP and partners in New Delhi from 13 to 16 September 2016. The regional workshop was attended by high-level and senior officials from the ministries of planning, finance and disaster management from the following member States: Afghanistan, Bhutan, Cambodia, Fiji, India, Maldives, Myanmar, Nepal, Samoa and Sri Lanka.

[30] Open-ended intergovernmental expert working group on indicators and terminology relating to disaster risk reduction. See www.preventionweb.net/drr-framework/open-ended-working-group/indicators/.

3. Another guidance material, *Mainstreaming Disaster Risk Reduction and Climate Change Adaptation in the Agriculture Sector in the Pacific,* was developed in collaboration with the Regional Integrated Multi-hazard Early Warning System for Africa and Asia. With the objective to guide practitioners, it provides a practical tool for enhancing knowledge on climate monitoring and disaster risks in the agriculture sector. The publication provides good practices on climate resilient agriculture from countries in Asia, which can be adapted in the Pacific for mainstreaming disaster risk reduction and climate change adaptation in the agriculture sector. Based on this publication, ESCAP and the Pacific Community organized a workshop on building climate resilient agriculture in Pacific small island developing States in August 2016, which served as a South-South cooperation forum, bringing together stakeholders representing climate-sensitive agriculture sectors of the Pacific small island developing States and Asia.

4. *Disaster Management Planning in a Small Island Developing States*, a publication meant specifically for small-island developing States, was used by Maldives to develop the country's National Disaster Management Plan, which supports the implementation of the Maldives Disaster Management Law.

5. Based on the regional guidebook for earthquake recovery, ESCAP, along with the South Asian Association for Regional Cooperation (SAARC) Disaster Management Centre and the National Planning Commission and the Government of Nepal, organized a regional recovery dialogue for building back better after a massive earthquake hit Nepal on 26 April 2015. Disaster management experts from various organizations participated in a dialogue to share experiences and best practices in their countries following major earthquakes. The report of the regional recovery dialogue provided guidelines to build back better through the sharing of good practices and case studies in the region.

(c) Risk assessment tools, techniques and models: In the *Asia-Pacific Disaster Report 2015*, several ex ante and ex post risk assessment tools and techniques, which are used operationally by key stakeholders, such as governments, insurance agencies and planners, for risk-sensitive development programmes, were introduced.[31] In the specific context of building resilience in a coherent manner across the 2030 Agenda, a wide range of tools, techniques and models for multi-hazard risk assessment and for integrating disaster risk and climate change considerations into policies, plans, and investments are presented in the *Asia-Pacific Disaster Report 2017*.[32] In the report, the need for a climate risk assessment to support the policy decisions are highlighted.

(d) User-friendly tool for accessing climate information: Because of the deep uncertainty associated with climate change and its linkages to extreme weather events and slow-onset disasters, the most effective strategy for risk-sensitive policy decision-making is the seamless integration of climate information across multiple timescales. Information technologies, including geospatial tools, and access to an earth observation satellite are making it possible for countries to easily access downscaled regional climate information and multi-hazard risk visualization maps. A user-friendly, web-based interface is increasingly fulfilling this demand and needs to be offered widely. For example, the Climate Data Access and Analysis System offers a web-based system for generating customized climate change projections for South Asia.

[31] *Asia-Pacific Disaster Report 2015: Disasters without Borders – Regional Resilience for Sustainable Development* (United Nations publication, Sales No. E.15.II.F.13).

[32] ESCAP, *Asia-Pacific Disaster Report 2017* (forthcoming).

Developed by the Regional Integrated Multi-hazard Early Warning System for Africa and Asia with initial funding support provided by the ESCAP Multi-Donor Trust Fund for Tsunami, Disaster and Climate Preparedness in Indian Ocean and Southeast Asian Countries, the system enables countries to access state-of-the-art climate change science information from the latest genre of climate models. The secretariat plans to capitalize on this system and other initiatives that enhance access to climate change projections to support the climate change adaptation and disaster risk reduction work of member States.

(e) Impact outlooks/policy briefs: In the *Asia-Pacific Disaster Report 2017,* four emerging risks and issues that would benefit from regional monitoring and research are discussed: (i) managing climate fault lines through the better understanding of climate risks associated with monsoons, El Niño/ La Niña and heatwaves; (ii) strategies for managing climate change hotspots – delta, glacial and semi-arid regions with multi-hazard and transboundary approaches; (iii) coherence between adaptation and resilience at all levels; and (iv) disaster prevention and peace building. The secretariat plans to continue to issue periodic and issue-specific impact outlooks and policy briefs with partners, including the Thematic Working Group on Disaster Risk Reduction and Resilience of the Regional Coordination Mechanism. The Thematic Working Group has produced the 2014/2015 El Niño impact outlooks, the El Niño risk assessment – step wise process, and a document on lessons learned during the 2015/2016 El Niño to support future risk-sensitive decision-making processes. This is further discussed in E/ESCAP/CDR(5)/INF/2.

IV. Issues for consideration by the Committee

39. This is the second year of the 15-year time frame for implementing the transformative 2030 Agenda. At this early stage of implementation, it is crucial that strategic action plans and road maps for achieving the Sustainable Development Goals are developed.

40. The Asia-Pacific region has adopted a regional road map for implementing the 2030 Agenda. Making the global development frameworks coherent with each other supports the road map and the Asia Regional Plan for Implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030.

41. While considering the issues raised above, the Committee may wish to:

(a) Guide the work towards implementing resolution 73/7 with specific focus on "accord[ing]priority to synchronizing multidisciplinary support to member States in the mainstreaming of disaster risk reduction in their development strategies, in line with the Sendai Framework and with the Sustainable Development Goals and targets relating to disaster risk reduction";

(b) Recommend actions to strengthen the secretariat's work on disaster risk reduction and resilience coherent across the 2030 Agenda and in line with other global development frameworks, by establishing the Asia-Pacific disaster resilience network. The objectives of the network are to align the secretariat's analytical research and norm-setting work with efforts to promote regional cooperation and build capacity, and initiate a new area of analytical research work on disaster prevention and peacebuilding in countries where disasters and conflicts co-exist;

(c) Recommend actions to strengthen peer learning, sharing of experiences, expertise and training facilities with the objective to make disaster risk reduction and resilience coherent across the 2030 Agenda and other global development frameworks.