



**Asia-Pacific
Economic Cooperation**

Advancing Free Trade
for Asia-Pacific **Prosperity**

Policy Brief: Rejuvenating Cities and Resilience Capacities for Multi-Challenges of COVID-19 Pandemic, Extreme Weather Events and Climate-Induced Disaster

APEC Emergency Preparedness Working Group

August 2022



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KEY MESSAGES

- Extreme weather events and climate induced disaster coupled with biological hazards (e.g., COVID-19 pandemic) resulted in significant multi-challenges, creating new, emerging hazards, systemic risk, and compound disaster especially in the vulnerable cities of APEC member economies.
- This policy brief provides a new insight into a concise, forward-looking, inclusive and action-oriented economies for disaster risk reduction (DRR) implementation at domestic level in Asia Pacific.
- Asia Pacific is known as the world's disaster-prone region, which have affected 6.9 billion people between 1970-2020 and killed more than two million people (i.e., one life lost every 13 minutes). The COVID-19 pandemic made it even worst, and resilient recovery is a way forward to rebuild our cities, prepared for future risk, and recover from these crises better, faster and stronger.
- APEC economies are recommended to build the regional and local capacity by reinforcing risk-informed decision-making for action and realigning domestic DRR and resilience strategies for societal transformation in the vulnerable cities.
- Rejuvenating vulnerable cities and enhancing resilience capacities for multi-challenges of COVID-19 pandemic, extreme weather events, and climate induced disaster are few steps forward to revitalizing our next actions and co-supporting the APEC DRR Framework with the goals to be "Adaptive and Disaster-Resilient Asia-Pacific Economies Supporting Inclusive and Sustainable Development".
- Multi-challenges triggered by extreme weather events, climate change and COVID-19 pandemic, increased the complexity of existing, emerging and future risks making clear the need for a paradigm shift in preparedness, response and recovery. We must increasingly support green and resilient investments for more disaster-resilient future towards achieving sustainable development.
- This policy brief aims at providing a new insight into key recommendations, policy interventions, and prospective agenda to rejuvenate our city resiliency, as a result of systemic risk, emerging hazards, and compound disaster induced by extreme weather events, climate change and pandemic.
- Four priorities are collectively developed and recommended as follows: 1) Assessing new emerging hazards and future systemic risk in the vulnerable cities, 2) Strengthening risk governance and communication for rapid decision-making for action, 3) Diversifying investment strategies for local resilience, and 4) Empowering locally-led and domestically-supported DRR and resilience program.
- We must recognize resilience as a public good, increase investment in resilient systems, promote to transparently account for and systematically report on DRR and prevention investments.

INTRODUCTION

The Asia-Pacific region has some of the world's most extensive transboundary disaster risk hotspots with highest impact on global population (87%) from disasters induced by natural hazards. Even worst, the COVID-19 pandemic has affected 188 economies, with over 500 million infected people, primarily in vulnerable cities.

Disasters and COVID-19 have a far more negative impact on groups both epidemiologically and socioeconomically. The Asia-Pacific region has long been affected by disasters with 59% of the global death toll, with expecting disasters are five times more likely to affect a person in the region than a person living elsewhere.

This policy brief is co-produced based on the APEC funded project, entitled as APEC Programme on Rejuvenating Cities and Resilience Capacities for Multi-Challenges of COVID-19 Pandemic, Extreme Weather Events, and Climate-induced Disaster (REJUVENATE-CITIES-C19) with aims to catalyze policy-oriented dialogues and action to address the multi challenges of pandemics and climate- induced disasters towards enhancing evidence-informed decision-making at all levels of public policy in the Asia Pacific. This publication supports the Making Cities Resilient campaign, coordinated by the United Nations Office for Disaster Risk Reduction. It promotes disaster resilience building in cities through awareness among local governments, and providing tools, technical assistance, city-to-city support networks, and learning opportunities for various strategies to rebuild city resilience (Figure 1). This policy brief also intended to support the APEC Emergency Preparedness Working Group (EPWG) mandate, specifically to strengthen the capacity of APEC member economies to better mitigate, prepare for, respond to, and recover from COVID-19 pandemic, extreme climate, and new, emerging, systemic risk and compound disaster.

The Sendai Framework for Disaster Risk Reduction 2015-2030, as endorsed by the UN General Assembly 2015 was formulated to effectively build communities and economic-wide resilience to disasters by outlining seven clear targets and four priorities for actions to prevent new disaster risks and reduce existing disaster risks. The four priorities for actions outlined in the Sendai Framework include understanding disaster risk, strengthening disaster risk governance to manage disaster risk, investing in DRR for resilience, and enhancing disaster preparedness for effective response and to 'build-back-better' in recovery, rehabilitation and reconstruction.

This policy brief aims at providing a new insight into key recommendations and prospective agenda to rejuvenate our vulnerable cities and increase the resilience capacities as a result of systemic risk, emerging hazard, compound disaster driven by extreme weather events, climate change and COVID-19 pandemic. Four priorities are recommended as follows 1) Assessing new emerging hazards and future systemic risks in the vulnerable areas, 2) Strengthening risk governance and communication for rapid decision-making for action, 3) Diversifying investment strategies for local resilience, 4) Empowering locally-led and domestically-supported DRR and resilience program. A transdisciplinary approach is promoted to integrate public-health and DRR to prevent future pandemic risk and strengthen societal resilience in an extreme climate.

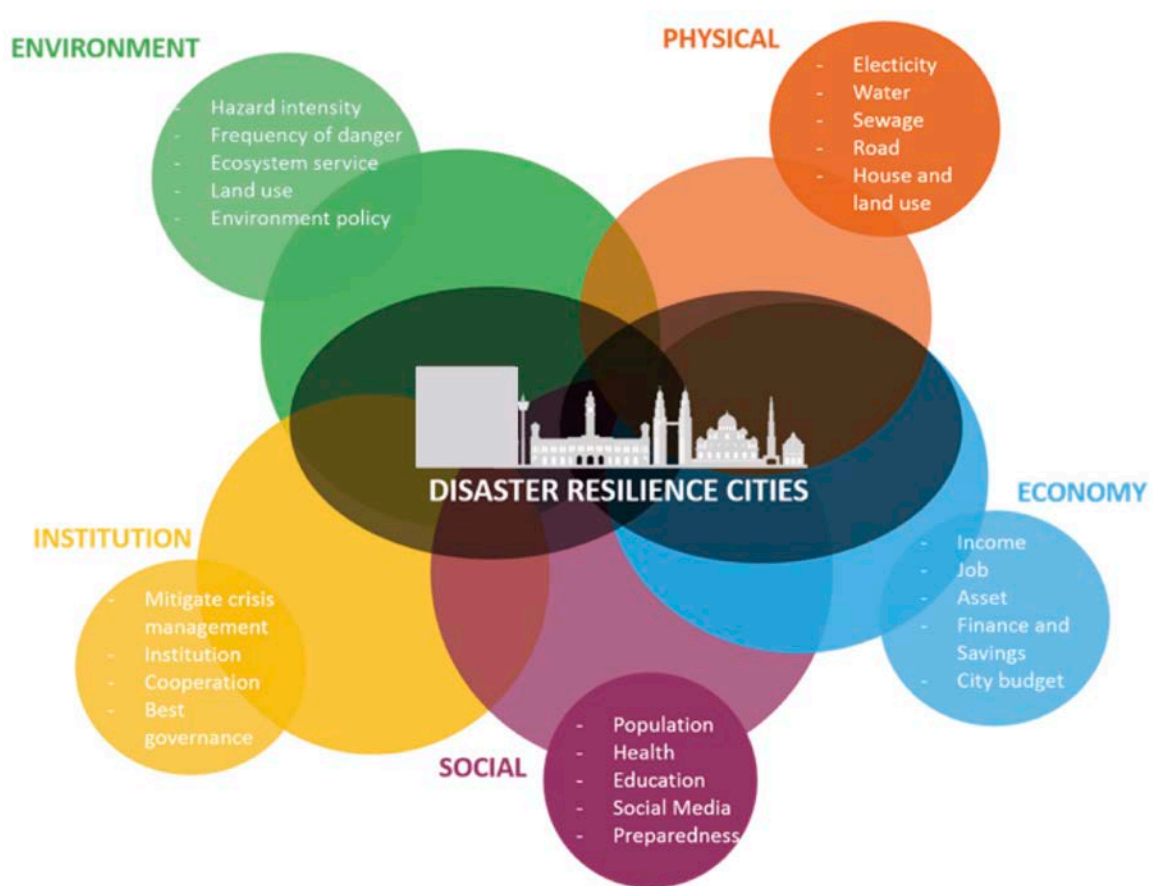


Figure 1. Disaster Resilience Cities

Science, technology and innovation (STI) policy has played a significant role in the economic transformation, social innovation and a critical means of implementation for the 2030 Agenda for Sustainable Development and supports the 2040 APEC vision. The COVID-19 crisis is affecting every aspect of our societies, revealing the extent of exclusion that the most marginalized members of society experience. Even worst in the densely populated cities, and vulnerable to various types of climate change impact and extreme weather events. It is worth mentioning that more than 55% of the world's population is living in urban areas and this proportion is expected to rise to 68% by 2050. Remarkably, 60% of the area to be urbanized by 2030 has yet to be built.

An integrated health response and new resilient strategies are required to suppress virus transmission and bounced back the socioeconomic dimension. It is, above all, a call to focus on the people, particularly capacity of our decision makers, and community leaders. The UN Disaster Resilience Cities Scorecard for 214 cities from Asia (88), Americas (50), Sub-Saharan Africa (50), and Arab States (26), the results show resilient urban development is the area of highest progress, whereas financial capacities for resilience is the area that needs the most improvement. Also, global assessment indicates the data sharing among relevant institutions, availability of training courses covering DRR and resilience issues for all sectors, and access to skills and experience related to DRR is relatively low.

All investments in sustainable development should be risk-informed. Without a radical change of course to ensure that the costs, driven by economic and human lives are addressed through preventive measures, disasters will significantly set back development gains in the affected economies and hamper the prospect of achieving the Sustainable Development Goals (SDGs). Open science, citizen science and ICT-based innovative solution are the key enablers in achieving regional vision and supporting global agenda.

DRR planning and CCA should be integrated into existing policy development in planning, programmes, and budgeting across a broad range of economic sectors - a process generally called “mainstreaming”. Mainstreaming DRR and CCA includes considering and addressing the risk associated with disasters and climate change in all processes of policymaking, planning, budgeting, implementation and monitoring. Moreover, Build-Back-Better concept requires looking at future events when designing measures for recovery, as due to compound disaster, and public health crisis.

This forward-looking approach should be incorporated into every DRM policy, strategy and plan to ensure that possible disasters from extreme weather events induced by climate change are taken into account. This reflects the broader expectation of APEC economies for coherent and coordinated support that maximizes synergies, harnesses the potential of partnerships, and optimizes the efficient use of financial and other resources across the APEC member economies in COVID-19 post recovery.

Call upon the APEC economies to support the implementation of mainstreaming processes of the disaster risk reduction and climate change adaptation in the post-COVID-19 recovery in a coordinated manner, bringing together coherently the efforts of APEC economies pursued within the respective mandates that may disrupt the business and trade in the Asia Pacific region. The Sendai Framework for Disaster Risk Reduction 2015-2030, the 2030 Agenda for Sustainable Development, the Paris Agreement on Climate Change, the New Urban Agenda, the Addis Ababa Action Agenda of the third International Conference on Financing for Development and the SIDS Accelerated Modalities of Action (SAMOA) Pathway, together with relevant international agreements - such as the International Health Regulations (2005) - each address disaster risk and taken together, they represent an opportunity to provide a more coherent and integrated international frame for managing risk within sustainable development.

This policy brief has been prepared in light of the new international agreements and changing operation context, in particular, to ensure coherence with respect to climate change risk and the broader 2030 Agenda for Sustainable Development, as well as to address the challenges. The need to effectively support its universal, integrated, transformative and people-centered approach and its promise to reduce inequalities and “leaving no one behind”.

This document addresses the need for coherence and mutual re-enforcement of the APEC’s resilience building efforts and seeks to more effectively integrate regional operational preparedness and response capacities into domestic operational and capacity development arrangements. It is a critical step to revitalize health emergency-disaster risk management

(Health-EDRM) nexus to prevent future pandemic risk due to extreme weather event, climate variation, and public health crises in Asia-Pacific region.

PRIORITY 1: ASSESSING NEW EMERGING HAZARDS AND FUTURE SYSTEMIC RISKS IN THE VULNERABLE CITIES

The Asia Pacific region has accounted about 57% of the global fatalities and 87% of the global affected population from disasters induced by natural hazards since 1970. Understanding and assessing risk is a first step to successful managing systemic risk in vulnerable cities. Risk assessment is an extremely data-intensive process, and it is required a full commitment of wide range of stakeholders, including mapping agencies, scientific and technical ministries, universities, research institutions and the private sector. This policy brief has identified four action areas for better understanding new systemic risk:

1. Analyzing all dimensions of risk (hazard, exposure, vulnerability) and dynamic interaction of their interlinkages
2. Mapping evidence-based scenario in spatial-temporal scales for projecting future effects upon social, economic and environment
3. Advancing the monitoring of disaster risks, experiences and lessons learned, including understanding and communicating the disproportionate impacts on people with disabilities, different genders and age or marginalized population groups.
4. Developing disaggregated vulnerability and exposure database for better anticipation and management of new, emerging hazard, systemic risk and compound disaster
5. Building new inclusive and accessible systems to address systemic risks.

Emerging and Retrospective Challenges

Our current disaster risk is systemic, with multi-challenges driven by urbanizations, environmental degradation, fragile investment in public health, and changing climate. Poor commitments, lack of responsibilities and uncertain scope of works are some challenges in making the regional, domestic and local disaster risk assessment.

Future climate risk and disaster impacts are no longer predictable with high accuracy, either its frequency, magnitude or cascading impacts. APEC member economies are committed to but struggle with the approaches to understand and build resilience set out by the Sendai Framework, the Paris Agreement and the Sustainable Development Goals (SDGs). Identifying, understanding and assessing – as well as communicating in a manner that is accessible to a wide range of audiences – emerging and future disaster and climate-driven risks is challenging. Building resilient systems requires integrating a wide range of realities, vulnerabilities and capacities: future climate-driven scenarios, changes in environmental conditions and levels of biodiversity, demographic shifts, gender, age and disability issues, human rights concerns, the intersectional nature of risk, socioeconomic variables, and rapid digitalization and technological advances. The region's disaster risks are becoming increasingly complex and interconnected; a variety of multi-hazard, rapid and slow-onset hazardous events is increasing the risk of cascading and cumulative disasters, threatening development gains and critical systems. The understanding among stakeholders of existing, emerging and future systemic risks remains fragmented, as does the robust use of statistical data or scientific expertise – including the expertise to address the displacement, disability,

gender and social inclusion dimensions of risk. Moreover, systems supporting policies and strategies often function in isolation. Understanding and communicating the disproportionate impacts on people with disabilities, different genders and age or marginalized population groups.

Recommendations and Prospective Agenda

Many different and complementary methods ranging from qualitative (subjective perceptions of experts), to semi-quantitative and quantitative methods (e.g., probabilistic risk analysis, deterministic or scenario analysis, historical analysis and expert elicitation). Key considerations in conducting risk analysis by UNDRR, such as: a) identifying and compiling existing input data, b) assessing disaster risk management capacities, and c) determining the sources and drivers of risk, the direct and indirect impacts and the climate change impacts. Geospatial tools and mapping, risk matrices, loss exceedance curves, visuals and infographics to prepare the outputs of the analysis for the communication and use by stakeholders.

The APEC economies may utilize transformative tools for decision-making such as scenario simulations, evidence-based scientific data and new technologies, including earth observations, useful for decision makers, scientists and stakeholders to better understand, communicate and monitor disaster and climate risks, enabling them to plan coherent resilient systems. Inclusive and accessible approaches can be applied with appropriate tools, and disaggregated data to identify and understand existing, emerging and future disaster risks, particularly those based on future climate-related scenario.

PRIORITY 2: STRENGTHENING RISK GOVERNANCE AND COMMUNICATION FOR RAPID DECISION-MAKING FOR ACTION

The multiplier effect of natural- and biological hazards and their interaction with underlying complex socio-economic conditions are contributing uncertainties in risk governance and communication, thus increasing risk-scape in the region. A strong governance mechanism, institution system, operational modalities, good policies and legal framework is required to successfully support multi-scale disaster risk assessment and risk reduction strategies. Four action areas are identified for supporting robust and inclusive governance and multi-tier decision- making processes for action:

1. Re-building new domestic strategies for disaster risk reduction and resilience
2. Stimulating adaptive and integrative risk governance to manage systemic, emerging risk, and compound disaster
3. Consolidating scientific and evidence-based decision-making processes for supporting multi-layered stakeholder action at all levels.
4. Institutionalizing collaborative risk governance system for capacity-building and multi-stakeholder action at all levels.
5. Enhancing effective and inclusive protection and safety nets.

Emerging and Retrospective Challenges

Equipping cities with knowledge and capabilities to manage complexity of risks (existing, new, emerging, cascading, compound and systemic) is a step forward to re-build a resilient society in post COVID-19 transformed era in the Asia Pacific. Multi-challenges driven by extreme weather events, climate change and public health crisis highlighted the opportunities and challenges for improving risk governance and decision-making systems. In recognition of this, APEC economies remain committed to multi-hazard, and 'all-of-society' approaches characterized by regional, transboundary and collaborative systems of governance and decision-making for action.

Many domestic disaster management agencies and platforms struggle to initiate and sustain robust engagement with non-civil protection and non-traditional stakeholders, and to secure high participation of relevant ministries, vulnerable, marginalized or displaced communities, or representative groups (including age-related and women's groups, and people with disabilities) in the co-design of targeted policies and strategies.

An uncertain, poorly understood, terminology, concepts, approaches, databases, assessments and standards, especially dealing with systemic risk, emerging hazards and compound disaster impedes the possible contribution and investment by public, private, academic and civil society organizations and, ultimately, undermines the effective utilization of resources and the benefits of all-of-society approaches.

Integrated social protection is under-treated by poor risk governance and under-utilized the regional collaborative and advisory initiatives. Multi-stakeholder platforms to facilitate the interaction, learning, after-action-reviews and decision-making is crucial to facilitate cross-sectoral, multi-stakeholder collaboration.

Recommendations and Prospective Agenda

Disaster risk information must be properly communicated as a result of assessing domestic disaster risk, understanding risk drivers, evaluating the risk and the impact of certain disaster risk management policies, or cost-benefit analysis of specific investment, prioritizing them, and ensuring the risk information needed for prevention, mitigation, preparedness, response, and recovery, in order to build a resilient future.

Moving towards 2030, in the decade of action, cities must have the evidence-based strategies in place to guide implementation to disaster risk reduction efforts. Common global, regional, domestic and local frameworks, agreements and consultations encourage inclusive systems for governance and the collaborative design of strategies, policies, and local action including structured capacity-building programs. Intergovernmental bodies have the convening power or legislative authority to engage relevant government ministries and stakeholders, providing a multi-stakeholder space for participation, shared leadership, and supporting the policy-oriented analysis and co-designing strategies and actions.

Leveraging the essential knowledge, skills, resources and experiences of women, marginalized communities, displaced people and other high-risk groups by securing their participation and leadership supports more inclusive DRR. Effective partnerships and

decision-making pathways are built on shared frameworks, terminology, concepts, approaches, databases, assessments and standards, as promoted in the 2040 APEC Vision.

PRIORITY 3: DIVERSIFYING INVESTMENT STRATEGIES FOR LOCAL RESILIENCE

All investments in sustainable development should be risk-informed and supported by robust and inclusive governance and decision-making processes. Investing in disaster risk reduction for resilience must be made based on data, science and evidence. It is a collective and shared responsibility of governments, the private sector, academia, scientists, and civil society to ensure that everyone benefits from investments in resilience and that no one is left behind. Increasing the quality of investments, budgetary resources and regulatory powers, vulnerable cities, especially critical infrastructure systems, is paramount for mitigating the impacts of future climate change and enhancing disaster resilience in the region. To systematically increase investments in society-wide and regional resilience, four action areas for accelerating resilient investments are formulated:

1. Developing coherent approach to prioritize DRR investment based on loss and damage of disaster induced by extreme weather events, climate change and COVID-19 pandemic.
2. Enhancing domestic and local budget system and regulatory powers for inclusive and innovative DRR to prevent future public health and climatic crisis
3. Leveraging transparent and sustainable investments for gender-responsive, age-sensitive and inclusive DRR at all levels.
4. Establishing DRR financial-friendly mechanisms, standards and tools for sustainable financing and resilient investments at all levels.
5. Empowering public-private investments in DRR for societal resilience in vulnerable cities.

Emerging and Retrospective Challenges

Asia' Pacific's increasingly vulnerable cities with poor build-back-better strategies to rebuilding, reconstruction and making our communities and cities recover better, faster and stronger. The extreme weather events and climate change coupled with COVID-19 pandemic prolonged the impact, especially in the cities. Cities are also suffering from the devastating impact of lockdown measures on informal economies, the lifeblood of many urban areas in developing economies. Even worst, cities with poor strategies for addressing economic shocks, aging infrastructure, and declining populations especially too dependent on tourism, hospitality, transport, or logistics.

The COVID-19 pandemic with existing multi-challenges induced by climate change, urbanization and environmental degradation and prolonged impacts on food security, demonstrated that political and administrative boundaries can challenge or complement the resilience of public health systems. Time to rebuild our cities better. Therefore, local governments and communities played a critical role in combating the impacts of multi-challenges driven by extreme climate.

Recommendations and Prospective Agenda

Building back resilient cities will not only depend on rejuvenating the economy, but also on ensuring that the underlying weakness that allowed COVID-19 in existing climate changed regions are addressed to prevent the next pandemic. Finance and economic ministries are increasingly engaging insurance, financing and banking markets to leverage green, sustainable and resilience investments that take into consideration future disaster and climate risk. Mainstreaming DRR and CCA into health and preparedness recovery scheme must not be seen by cities and their citizens as a costly burden, but rather as a vital investment that ensure resilience and prosperity. Standards and reporting obligations for economic and financial systems and incentives increasingly account for environmental, social and governance.

Resilient infrastructure must leverage the public-private investment in DRR with the support of academia, and civil society organizations. Emerging socioeconomic models, sustainable financing scheme, and targeted investment strategies, and policy directives increasingly support transboundary and system-wide approaches to city resiliency and direct investments. A new financing and inclusive partnerships, coupled with standards and tools can be collectively promoted to increase the investment in systemic and compound disaster risk reduction. Evidence-based policies, plans and programmes shall address fit-for-purpose budgetary resources and regulatory powers to prepare actively for pandemic- and climate-related risk scenarios in the near future.

PRIORITY 4: EMPOWERING LOCALLY-LED AND DOMESTICALLY-SUPPORTED DRR AND RESILIENCE PROGRAM

Human health crosscuts all the regional and global frameworks. With existing, new, and emerging hazard, it underscores the imperative of accelerating the integration of multiple regional and global policy framework. Compound disaster demonstrated the importance of investment especially social and economic benefits of preparing for response and resilient recovery. A multi-hazard, multi-dimensional, and multi-scalar assessment of systemic risk is the precursor for strengthening our understanding of increasing, complex nature of risk. Therefore, localization is a key factor to develop a long-term solution to address all dimensions of risk. Four action areas are co-produced to support the aforementioned priorities, growth and achievements, as follows:

1. Investing in human capital and localizations (local risk, local champions, local assets, local network, and local wisdom)
2. Materializing nature-based solution for disaster risk reduction in vulnerable cities
3. Building a technological driven disaster risk information and impact-based multi-hazard early-warning systems
4. Addressing the local needs and demands for resilience program that are gender-responsive, age-sensitive and inclusive preparedness
5. Developing new assessment tools for disaster resilience cities for promoting build-back-better that address compound disaster, emerging hazards and systemic risks.

Emerging and Retrospective Challenges

Cities can no longer in silo or focusing on certain type of hazards. Cities shall deal with the complexity of risks and shall manage multiple risks arising from natural and industrial to man-made and biological hazards (e.g. COVID-19 pandemic). Systemic, complex, interconnected nature and dynamic of APEC member economies with multi-hazard risks and different solutions are necessary for addressing future climate change-driven risks. Transboundary and inclusive all-of-society approaches are needed to prepare for both response and resilient recovery, instead just an all-of-government approach. Therefore, locally-led and domestically-supported DRR and resilience program is an important platform and perfect ingredient in resilient recovery and building back.

The response to and recovery from COVID-19 pandemic has highlighted the systemic, complex and interconnected nature of multi-economy multi-hazard risks – with lessons for future climate change-driven risks. Our response and recovery strategies must address the highly impacted groups, local communities and displaced populations. The response to and recovery from COVID-19 pandemic highlights the value of multi-stakeholder collaboration, scientific knowledge, technological innovation and evidence-based guidance and solutions, as well as the socioeconomic importance of gender-responsive, age-sensitive and inclusive safety nets.

Recommendations and Prospective Agenda

Revising the local disaster risk reduction and resilience strategies and ensuring the strengthened coordination, systematic cooperation, and integrating risk of biological hazards and overall disaster risk management approach are of essential for preparing future systemic risks.

In supporting resilient recovery, a nature-based solution for DRR over engineered (hard) infrastructure is recommended to highlight the multiple benefits they provide and their cost-effectiveness to combat compound disaster. It is a critical step to build capacity of APEC member economies for better mitigate, prepare for, respond to, and recover from extreme weather events, climate changes, and public health crisis. Investing in human capital and empowering localizations towards achieving local wisdom is the key in rebuilding resilience of our vulnerable cities.

Regional organizations and programmes provide innovative research and tools for future inclusive early-warning systems and collaborations. In addition, scientific and technological advances such as geographic information systems, earth observations, big data and spatial planning enhance multi-hazard early-warning systems and near-time monitoring of complex emergencies, including across borders.

This policy brief promotes all-of-society and inclusive approaches, collaborations and agreements towards accelerating multi-scale preparedness beyond civil protection mechanisms and ex-ante resilient recovery planning, accelerating existing resilience strategies.

CONCLUSIONS

Cities act as accelerators for social and economic progress and serves an important hub of innovation in the Asia Pacific. It is also homes to significant concentrations of the poor and marginalized people that have significant impacts. Disasters do not respect borders. Transboundary cooperation and sectoral cooperation may further complicate the implementation of disaster risk measures, offering the unique possibilities to enhance the efficiency and effectiveness of plans and programmes by advancing synergies arising from cooperation and resulting in more robust risk reduction activities.

Achieving a disaster-resilient Asia Pacific region by 2030 requires a broad understanding across society, as well as further resources and investment, facilitated by robust and inclusive governance and decision-making processes. Making right, timely and cost-effective decision for action is a critical step by APEC economies towards preventing future systemic risk and compound disaster by adopting all-hazards and the whole-of-society approaches.

This policy brief provides a new insight into key recommendations and prospective agenda to rejuvenate our vulnerable cities and increase the resilience capacities as a result of systemic risk, emerging hazards and compound disaster driven by extreme weather events, climate change and COVID-19 pandemic. Four priorities are recommended as follows: 1) Assessing new emerging hazards and future systemic risks in the vulnerable areas, 2) Strengthening risk governance and communication for rapid decision-making for action, 3) Diversifying investment strategies for local resilience, 4) and Empowering locally-led and domestically-supported disaster risk reduction and resilience program.

A changing climate, shifting demographics, new technologies and the transition towards digital and green economies requires a paradigm shift in the region's understanding and communication of existing, emerging and future systemic risks. Improving coherence with and leverage global agendas to address future climate change, disaster risks and related socioeconomic challenges at all levels. The commitment of APEC economies to support the achievement of the Sendai Framework Monitoring and global agenda shall be systematically reported.

The reporting and monitoring process highlighted areas of progress and opportunities for collaboration within different regional, domestic and local contexts, promoting collaborative reviews and common priorities for capacity-building. Initiatives such as the Making Cities Resilient 2030 Initiative contributed to improvements related to urban risks and the implementation of resilience. Many regional intergovernmental organizations encouraged collaboration through shared contextualized frameworks, goals, policies, strategies, directives, agreements, peer-reviews, stress tests, and scientific and evidence-based initiatives for addressing systemic risk in the cities.

Multi-challenges triggered by extreme weather events, climate change and COVID-19 pandemic, increased the complexity of existing, emerging and future risks making clear the need for a paradigm shift in preparedness, response and recovery. Water, transport, communication, health and energy systems, policies, agreements, standards and directives increasingly support green and resilient investments for a more disaster-resilient future, including for future climate scenarios.

Resilience must be recognized as a public good and it is the joint responsibility and needs to be inclusive and accessible to all. Green, socioeconomic and other response and recovery investments offer opportunities to build resilience and reduce risk. So far, there is growing recognition among stakeholders, including investors, owners, operators and regulators to pay dividends in the long run for resilient (and green) resilient systems, financing, (re)insurance, banking, investment and business decisions increasingly consider disaster, future climate and pandemic, as well as impacts to environmental, social and governance.

More than 50% of the world's population now live in urban cities, which are complex in nature, characterized by many interrelated physical systems, resulting in high impacts due to cascading and compound disaster in the densely populated cities. With varying levels of coverage and benefits, regional organizations are supporting system-wide contextualized approaches for establishing resilience standards. Regional, domestic and local government investments and budgeting systems must recognize resilience as a public good, increase investment in resilient (and green) systems and promote to transparently account for and systematically report on DRR and prevention investments.