



**Asia-Pacific
Economic Cooperation**

APEC Disaster Risk Reduction Action Plan

APEC DISASTER RISK REDUCTION ACTION PLAN

Background

In 2015 APEC Economic Leaders declared *“the Asia-Pacific region, straddling the Pacific Ring of Fire, is particularly vulnerable and exposed to disasters”*, noting the growing frequency, magnitude and scope of disasters induced by natural hazards, and the resultant disruption on the increasingly integrated and interlinked production and supply chains.

Thereafter, APEC Leaders delivered the following pronouncement in item 4b of the 2015 Leaders’ Declaration: *“We welcome and adopt the APEC Disaster Risk Reduction...Framework to facilitate collective work in building adaptive and disaster-resilient economies supporting inclusive and sustainable development in the face of the “new normal.”... We instruct Ministers to craft an action plan in 2016 to operationalize the...Framework and renew existing efforts such as business continuity planning, strengthening early warning systems, search and rescue, post-disaster recovery, promoting appropriate donations, and enhancing capacity building.”*

The development of the **APEC DRR Action Plan (DRRAP)** was subsequently committed by the Ministers in item 125 of the 2015 Joint Ministerial Statement: *“Consistent with the areas for cooperation identified in the...Framework, we emphasize the growing need for cooperation on disaster risk reduction...We commit to craft an action plan through the Senior Disaster Management Officials’ Forum (SDMOF) and EPWG, which shall result from cross-fora collaboration and pave the way towards the operationalization of the APEC DRR Framework....”*

Since then, APEC Leaders have implemented the **APEC Disaster Risk Reduction Framework (DRRF)** to support APEC economies’ efforts to build sustainable, inclusive, and resilient Asia-Pacific communities by reducing disaster risk and strengthening emergency preparedness for disasters.

To operationalize the APEC DRRF, APEC developed the DRRAP. As stated in the item 9.4 of the DRRF: *“In support of the DRRF and the DRRAP, the Emergency Preparedness Working Group (EPWG) coordinates the implementation of the DRRAP and serves as the primary collection mechanism for specific, measurable, and timed contributions from all economies. Consistent with APEC guidelines, the DRRAP is formulated to include appropriate monitoring and evaluation tools that help measure all EPWG activities.”*

The DRRAP is composed of the four pillars of the DRRF, the specific areas for collaboration, the corresponding activities, the responsible partners, timelines for accomplishment, and indicators for evaluation. This refresh maintains the core tenets of the original version of the DRRAP, incorporates best practices and lessons applied from relevant international arrangements—where appropriate—and assesses shared challenges to inform APEC’s future disaster risk reduction activities.

Pillar 1: Prevention and Mitigation

Description: This pillar steers APEC’s efforts to better identify and understand existing hazards while encouraging the assessment of community exposure and vulnerability across the Asia-Pacific region. Reducing the loss of life, property, and lessening disaster impacts are key elements of this pillar.

Based on the identified hazards and resulting risk assessments, proactive structural and non-structural measures should be identified, evaluated, prioritized, funded, and undertaken to prevent and mitigate disaster impacts. Interventions may include the development of risk and hazard mapping, hazard mitigation plans, prioritizing investments in resilient critical infrastructure, including social and cultural infrastructure, and more.

Goal: Adaptive and Disaster-Resilient Asia-Pacific Economies Supporting Inclusive and Sustainable Development

Outcome: Disaster impacts mitigated through proactive mechanisms supporting inclusive and sustainable development

Illustrative Outputs/Deliverables:

- Meetings/ workshops
- Policy partnerships
- Open data sharing platforms
- Risk maps, vulnerability assessments
- Technical standards for risk assessment
- Business continuity plans (BCPs)
- Climate Information Services/ Early Warning Systems
- Monitoring and evaluation tools/systems

AREAS FOR COLLABORATION	ILLUSTRATIVE ACTIVITIES	PARTNERS		TIMEFRAME	INDICATORS
		INTERNAL	EXTERNAL		
1. Utilization of science, technology, and research to prevent and mitigate disaster impacts	Sharing of lessons learned and best practices on utilization of science, technology and research including assistive technology, including structural and non-structural measures, mechanisms, and tools	PPSTI EPWG TELWG EWG HRDWG		1 – 3 years	Number of meetings/workshops/ sharing sessions conducted
	Conducting research activities on applicable technology, including assistive technology on DRR			1 – 3 years	Number of research papers developed with results
	Developing communication strategies prioritizing sustainability, innovation, inclusion, technology, and science			1 – 3 years	Number of communication strategies developed

AREAS FOR COLLABORATION	ILLUSTRATIVE ACTIVITIES	PARTNERS		TIMEFRAME	INDICATORS
		INTERNAL	EXTERNAL		
	Formulating partnerships on science and technology innovations such as Memorandum of Understanding (MOU), joint policies and guidelines, etc.			1 – 3 years	Number of MOU, joint policies and guidelines, etc. and number of partnerships established
2. Promotion of open access to non-sensitive risk and hazard mapping information, in an understandable and easily accessible format for households, communities, businesses, and governments to encourage appropriate decision-making	Promoting inclusive open data sharing across economies to enable access to policies, guidelines, and strategies that support community risk reduction	EPWG PPSTI EWG TELWG ASCs		3 – 5 years	Number of web-based open data sharing platform established / social media groups developed ICT and Internet of Things (IoT)-based technologies are tested and implemented for disaster risk prevention and mitigation Number of Artificial Intelligence use cases developed for disaster risk reduction
	Developing policies and guidelines on risk information sharing, access, and dissemination for communities	EPWG PPSTI TELWG EWG ASCs		1 – 2 years	Number of policies and guidelines developed

AREAS FOR COLLABORATION	ILLUSTRATIVE ACTIVITIES	PARTNERS		TIMEFRAME	INDICATORS
		INTERNAL	EXTERNAL		
<p>3. Identification of vulnerable and hazardous areas.</p> <p>Conducting mitigation projects aimed at reducing disaster risks of affected communities.</p>	<p>Conducting workshops on infrastructure resilience, streamlining monitoring of risk reduction activities</p>	<p>EPWG TELWG PPSTI</p>		<p>1 – 2 years</p>	<p>Number of workshops conducted</p>
	<p>Conducting science-based and threat-based vulnerability assessments and risk mapping at the economy level, to include details on vulnerability and exposure of communities, including industries sectors and supply chains, to natural and hazards, including manmade hazards</p>	<p>EPWG TELWG PPSTI</p>		<p>5 – 8 years</p>	<p>Development of responsive and comprehensive risk maps. Updating existing maps Ensuring availability in all forms of communication</p>
	<p>Developing monitoring and evaluation tools/systems to assess the vulnerability of various sectors such as agriculture and fisheries and the interface with social and community networks, with the use of ICT, AI, and IoT</p>	<p>EPWG TELWG PPSTI</p>		<p>2-4 years</p>	<p>Development of monitoring and evaluation tools/systems Updating existing tools/systems</p>
<p>4. Advancing nature-based solutions and encouraging conservation of ecosystems, e.g., wetlands, mangroves, dunes, forests, that can provide natural protection to reduce the vulnerability of and</p>	<p>Sharing of lessons learned and best practices on innovations /utilization of advanced technology to preserve biodiversity and ecosystems</p>	<p>EPWG PPSTI</p>		<p>2 year</p>	<p>Number of meetings/workshop s/ sharing sessions conducted</p>

AREAS FOR COLLABORATION	ILLUSTRATIVE ACTIVITIES	PARTNERS		TIMEFRAME	INDICATORS
		INTERNAL	EXTERNAL		
risks in APEC communities	Increasing the number of projects and activities focused on nature-based solutions	EPWG			
5. Enhancement and harmonization, of infrastructure standards to make them responsive to the increased frequency and impact of disasters	Mainstreaming and integrating DRR and climate change adaptation in the APEC Multi-year infrastructure development plan including ecosystem-based activities	EPWG		1 – 2 years	DRR-climate change adaptation mainstreamed in the APEC Multi-year infrastructure development plan
	Developing and adopting minimum common technical standards to include accessibility measures for infrastructure assessment, and promote quality infrastructure investment	EPWG HRDWG CTI		2 – 4 years	Technical standards developed Number of economies that have adopted the standards
6. Facilitation of the establishment of appropriate mechanisms and tools to finance investments in prevention,	Sharing of information about Disaster Risk Financing (DRF) schemes / micro insurance systems	FMP ABAC APFF	International Financial Institutions	2 – 5 years	Number of meetings/workshops /sharing sessions conducted

AREAS FOR COLLABORATION	ILLUSTRATIVE ACTIVITIES	PARTNERS		TIMEFRAME	INDICATORS
		INTERNAL	EXTERNAL		
mitigation and risk transfer, in collaboration with the private sector, particularly the capital markets and insurance industry	Adoption of the APEC standard on formulation of BCPs	EPWG FMP ABAC	International Financial Institutions		Number of economies adopting the BCP formulation standard of APEC

Pillar 2: Preparedness

Description: This pillar supports APEC's emergency preparedness activities across the Asia-Pacific. Initiatives under this pillar are multi-level, multi-sectoral, and multi-stakeholder. At the community level, this pillar encourages economies to undertake community-level outreach to strengthen a community's capacity to understand the risks they face, recognize the necessary actions needed to prepare for specific hazards, apply risk-informed decision-making when facing an emergency, and when necessary, cope, and recover from disaster impacts.

Goal: Adaptive and Disaster-Resilient Asia-Pacific Economies Supporting Inclusive and Sustainable Development

Outcome: Established and strengthened capacities of communities to anticipate, prepare for, and cope with the negative impacts of emergency occurrences and disasters for safe and resilient communities to avert the loss of lives and assets

Illustrative Outputs/Deliverables:

- Platforms for sharing DRR information with the use of ICT
- Protocols on data sharing, including linkages of disaster information systems
- Capacity building / training on voluntary technology transfer
- Capacity building / training on development of entrepreneurial basic skills for MSMEs
- Development of robust early warning systems for a range of natural hazards including severe weather (e.g. typhoons, tropical cyclones, hurricanes), flood, drought, coastal inundation, tsunami, etc.
- Guidelines on establishment of shared facilities for industries
- Partnerships with the private sector
- Risk transfer mechanisms
- Credit facilities for MSMEs
- Capacity building to advance business resilience

AREAS FOR COLLABORATION	ILLUSTRATIVE ACTIVITIES	PARTNERS		TIMEFRAME	INDICATORS
		INTERNAL	EXTERNAL		
1. Voluntary sharing of non-sensitive information and best practices to improve early warning systems.	Developing protocols on data sharing	PPSTI EPWG TELWG EWG		1 year	Number of protocols developed
Developing comprehensive disaster risk management systems leveraging science and technology.	Sharing lessons on the development of disaster safety communication networks and other efforts aimed at increasing community resilience	EPWG PPSTI		1-2 year(s)	Coverage of communication networks / Number of economies that have shared the relevant technologies and information

	Strengthening first responder capacity through the development of online resources to facilitate rapid response to emergencies	EPWG		3 years	Share existing online resources and adapt new training for APEC context
2. Capacity-building and voluntary, mutually agreed technology-transfer to sustain the development, improvement, and exchange of important DRR skills, knowledge, and technologies	Assessing priority areas for collaboration on technology transfer	PPSTI		1 year	Hold appropriate dialogues/discussions on priority areas and identify training needs
	Raising awareness and building capacity to address disaster risk at the community level	EPWG		5 years	Hold appropriate dialogues/discussions
3. Encourage public-private sector cooperation in support of a whole-of-society and multi-hazard approach to preparedness	Developing guidelines for coordination and partnership agreements	ABAC TPTWG SMEWG EPWG EWG		1 year	Number of guidelines developed and partnerships forged
	Establishing coordination mechanisms for preparedness			1 year	Number of coordination mechanisms established
	Organizing networking / partnership activities			1 year	Number of networking/partnership activities organized

	Advancing capacity Building on the APEC Seven Principles of Supply Chain Resilience	PPSTI EPWG		5 years	Number of Capacity Building activities organized
	Sustaining capacity building efforts to advance business resilience			5 years	Number of capacity engagements on business resilience
	Improving existing operational warning systems for forecastable hazards (e.g. cyclones and other storms, tsunami, storm surge, flooding, volcanic eruptions), building on improved observational networks and science			5 years	Map existing regional early warning systems, interoperability, gaps, and challenges Evidence of mature, multi-economy operational warning systems, receipt of warnings by public and emergency services, and developing maturity of response.
	Strengthening of the links between technical agencies to improve their ability to provide ongoing Early Warnings	EPWG PPSTI			
4. Development of financial and enterprise tools that are suitable to the DRR goals and objectives of APEC communities	Developing risk transfer mechanisms, based on robust data and risk analysis	ABAC APFF FMP	International Financial Institutions	5 years	Number of beneficiary economies with risk transfer mechanisms
	Establishing and promoting private disaster insurance schemes, through the collaboration and exchange of information and experience among economies, international organisations, and private sector in the medium term	ABAC APFF FMP	International Financial Institutions	2-4 years (medium term); 5-10 years (long term)	Comprehensive study of market gaps, and recommendations to address these gaps

	Deepening insurance penetration within economies and develop regional risk sharing measures	FMP		5-10 years (long term)	Deepen insurance penetration within economies and develop regional risk sharing measures
--	---	-----	--	------------------------	--

	Developing a roadmap and network of experts to expand the coverage of micro insurance and disaster risk finance in member economies	FMP		2-4 years (medium term)	
5. Building resilience of Micro Small Medium Enterprises, livelihoods and businesses against disasters through responsive business continuity plans and micro insurance, among others	Developing guidelines on the establishment of shared facilities for industries through industry associations	ABAC FMP SMEWG	International Financial Institutions	1 year	Number of guidelines developed
	Conducting training/capacity building on development of entrepreneurial basic skills for MSMEs particularly in the development of "green products"	SMEWG		5 years	Number of training/capacity building conducted
	Developing market linkages for MSMEs to grow and stay competitive to become resilient	SMEWG		2 – 3 years	Effective and responsive linkages developed

Pillar 3: Response

Description: This pillar focuses on engaging stakeholders of the affected economies in operational interventions immediately after a disaster. It involves the identification and assessment of impacts to the economy and marketplace following the disaster and the implementation of response programs, such as but not limited to the provision and replenishment of lost purchasing power to affected consumers, procurement of relief goods and services from business and people closest to the disaster area, and provision of immediate needs through market-based solutions so that economic recovery is stimulated while immediate relief is provided.

Outcome: Life preserved, basic subsistence needs of affected population met and capacities of economies restored during or immediately after a disaster

Illustrative Outputs/Deliverables:

- Universally acceptable mechanisms/standard operating procedures (SOPs) on humanitarian assistance and disaster response (HADR)
- Implemented BCPs
- Data and information management protocols for the recording of impact data.

AREAS FOR COLLABORATION	ILLUSTRATIVE ACTIVITIES	PARTNERS		TIMEFRAME	INDICATORS
		INTERNAL	EXTERNAL		
1. Establishment, engagement in and promotion of joint and/or collective emergency response policies taking into account recognized international and regional humanitarian response procedures—where appropriate—to reduce barriers to the movement of emergency responders and humanitarian relief across borders	Adopting and encouraging implementation of existing coordination mechanisms on humanitarian assistance and disaster relief (HADR), such as AADMER, IHA, MNCC, OSS, etc.	CTI SCCP EPWG HWG EWG		5 years	Number of economies that have established, implemented and adopted the mechanisms on HADR
	Implementing the APEC Principles for the Movement of Humanitarian Goods and Equipment During Emergencies	EPWG SCCP BMG			
2. Utilization of communication mechanisms to expedite the flow of goods after transportation disruptions in order to assist in trade recovery	Adopting and encouraging implementation of communication mechanisms, including the utilization of space satellites, to expedite the flow of goods after transportation disruptions to assist in trade recovery	CTI SCCP BMG TPTWG TELWG EPWG		5 years	Number of economies that have adapted and implemented the communication mechanisms

	Recovery Information Program (GTRIP) as outlined in the APEC Principles for the Movement of Humanitarian Goods and Equipment During Emergencies				
3. Encouragement of appropriate donations after disasters in order to expedite the movement of goods and reduce chokepoints in the supply chain	Adapting and encouraging implementation of APEC Guidelines for Appropriate Donations in Times of Disasters to expedite the movement of goods and reduce checkpoints in the supply chain	ABAC CTI SCCP BMG EPWG		1 year	Number of economies that have adapted the mechanisms, protocols and policies on appropriating donations
4. Promotion of market-based response mechanisms/approaches to address impacts to markets and economic systems.	Encouraging Implementation of BCPs for enhanced market-based response mechanisms	ABAC EPWG SMEWG		1 year	Number of BCPs implemented

Pillar 4: Resilient Recovery

Description: This pillar aims to enable disaster-affected communities to recover by ensuring minimal disruption in livelihood and other economic activities; fast-tracking the resilient recovery of affected economic activities after a disaster; fostering education continuity; rehabilitating affected ecosystems; and improving the overall living conditions of affected and at-risk communities and businesses.

Outcome: Disaster stricken communities pursue sustainable, innovative, and resilient recovery practices resulting in long-term resilient restoration and rehabilitation.

Illustrative Outputs/Deliverables:

- Updated policies, plans and programs
- Meetings/ workshops
- Policy dialogues/ collaboration/partnerships

AREAS FOR COLLABORATION	ILLUSTRATIVE ACTIVITIES	PARTNERS		TIMEFRAME	INDICATORS
		INTERNAL	EXTERNAL		
1. Mainstreaming of DRR and climate change adaptation into local and economy-level development planning	Updating and mainstreaming of DRR and climate change adaptation into domestic plans	EPWG HRDWG PPSTI		1 – 3 years	Number of local and economy level plans updated
	Sharing of lessons learned and best practices on mainstreaming of DRR and climate change adaptation	EPWG PPSTI		1 year	Number of meetings/ workshops /sharing sessions conducted
	Establishing direct linkages between physical, economic and social recovery policies, mechanisms, measures and tools	PPSTI			
	Sharing of lessons learned and best practices on employment, human resource development and social protection disaster response strategies	HRDWG		3 years	Number of meetings and plans updated for the APEC Principles for Sound Natural Disaster Workforce Strategies ¹

2. Promotion of local level action for long-term and sustained impact of DRR interventions	Sharing lessons learned and best practices on local involvement in DRR	EPWG SDMOF		1 year	Number of meetings/workshops /sharing sessions conducted
	Reviewing and assessing existing domestic laws and policies on DRR	EPWG SDMOF		1 year	Review of domestic laws and policies initiated
3. Promotion of coherence and mutual reinforcement among local, economy-level, regional, and global DRR policies and programs	Conduct of policy dialogues/ collaboration / partnership with existing regional bodies / organizations such as ASEAN, AFTA (global – sendai)	EPWG PPSTI SDMOF EWG		1 – 3 years	Number of policy dialogues conducted/ collaboration/ partnerships formed
4. Ensure gender, age, and disability-responsiveness of DRR policies, plans, and programs	Updating of policies, plans and programs to ensure gender, age, and disability-responsiveness and that vulnerable groups are given special attention in DRR	PPWEH RDWG EPWG		1 – 3 years	Number of policies, plans and programs updated
	Development of indicators for gender, age and disability responsiveness for inclusion in reporting	PPWE HRDWG		2 – 3 years	Indicators developed; Number of economies that have adopted the indicators

¹ Contained in the APEC HRD Working Group project report, *Building Natural Disaster Response Capacity – Sound Workforce Strategies for Recovery and Reconstruction*, December 2013