



**Asia-Pacific
Economic Cooperation**

2012/EPWG/SEM1/004

From Capacity Building to Capacity Enhancement – EPWG’s Contributions to the APEC Region

Submitted by: EPWG



**Seminar on Capacity Building for Disaster
Recovery and Rehabilitation
Shanghai, China
27-28 June 2012**



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From Capacity building to capacity Enhancement -APEC EPWG's contributions to the APEC region

**Wei-Sen Li
APEC EPWG Co-Chair**

APEC Emergency Preparedness Working Group Meeting

June 27, 2012

APEC Seminar on Capacity Building for Disaster Recovery and Rehabilitation



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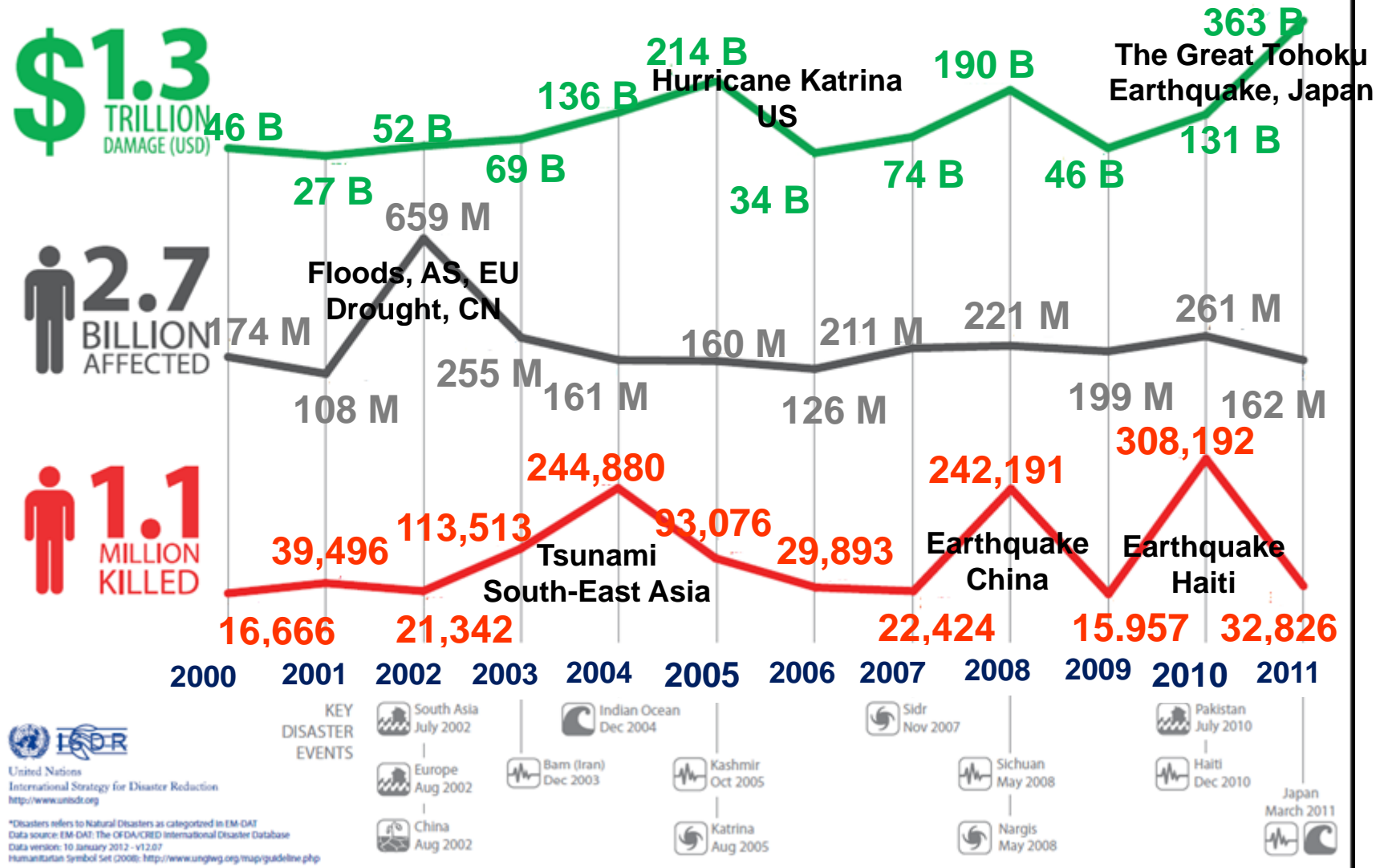
Numbers and Facts



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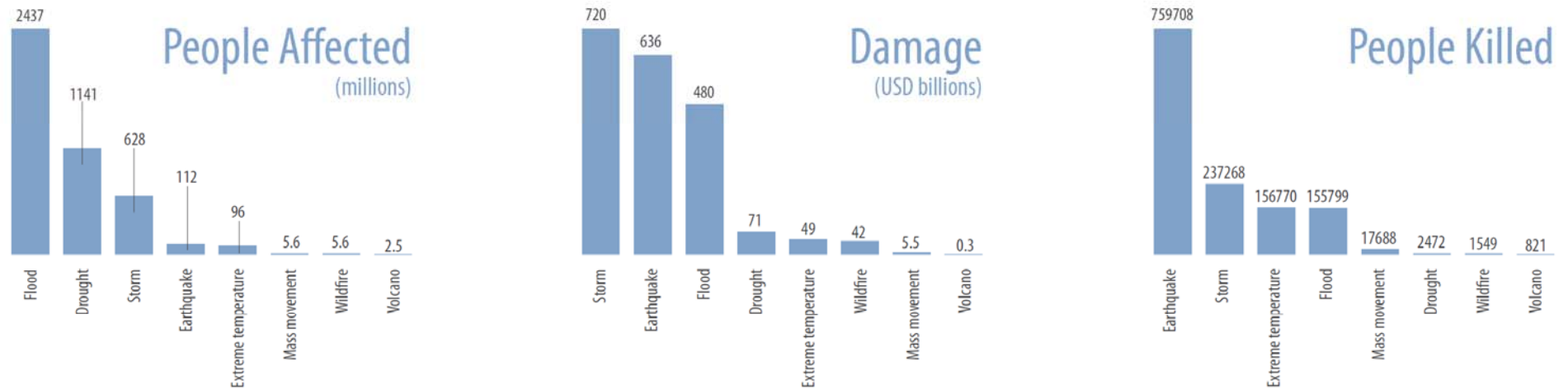
Review the first decade of the 21st Century

The Economic and Human Impact of Disasters* in the last 12 years



Numbers since 1992- Rio+20

Impact by disasters



Impact by top 10 countries



APEC region a highly disaster-prone area



Earthquake
China, 2008



Typhoon
Philippines, 2009



Debris flow
China, 2010



Earthquake & Tsunami
Japan, 2011



Flood
Thailand, 2011



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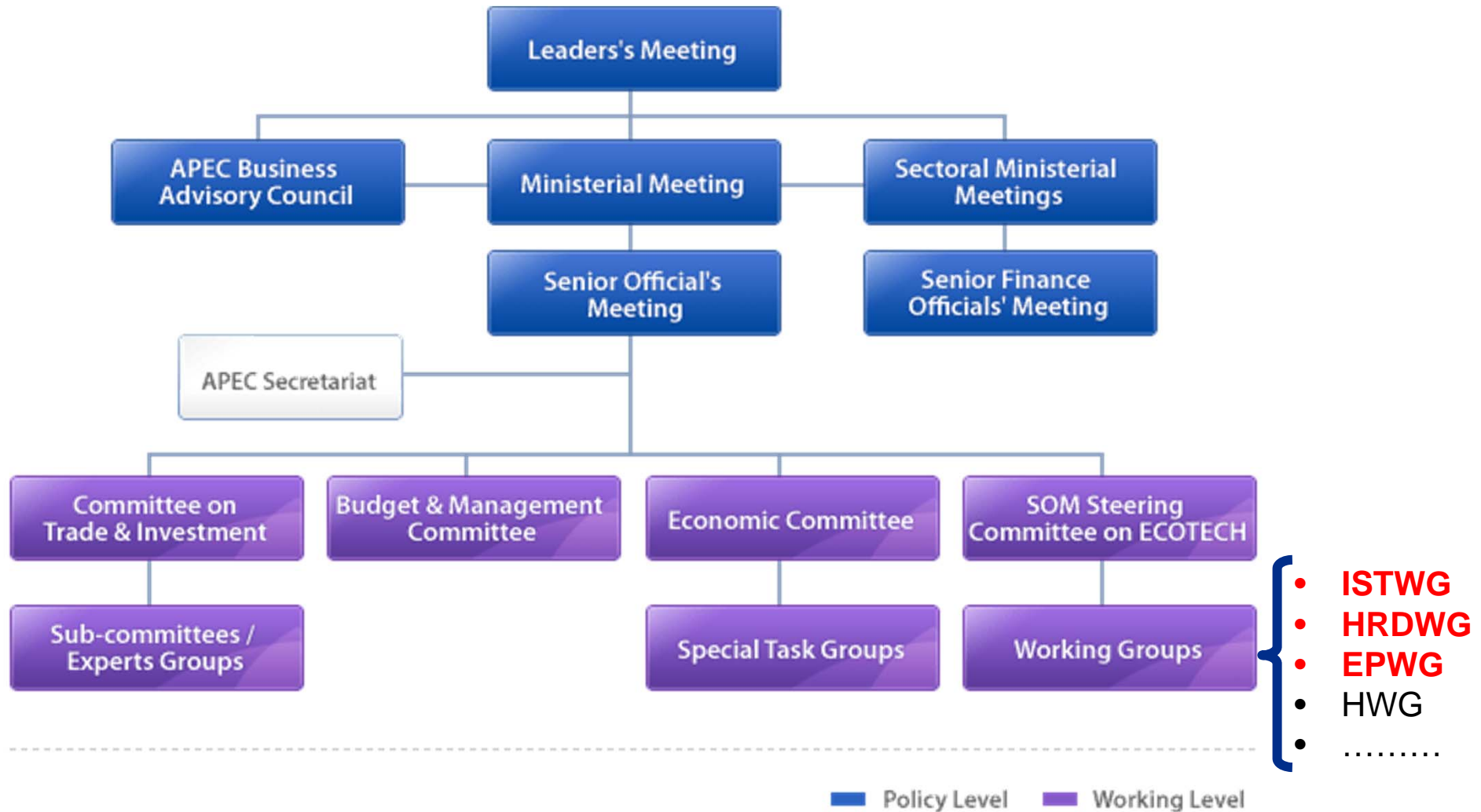
About APEC EPWG



What is EPWG in APEC ?

- **2005~2009 TFEP period**
 - Emergency Preparedness Working Group was known as **Task Force for Emergency Preparedness (TFEP)** in APEC
 - In response to 2004 Indian Ocean Tsunami, 18 members attended the meeting of the TFEP, Bali, Indonesia, 2-3 April 2005
- **On February 23, 2010, in Hiroshima, Japan**
 - the First Senior Officials' Meeting, the Task Force was approved to be upgraded to a permanent working group.
- **On June 2, 2010, in Sapporo, Japan**
 - During the second meeting of the SOM Steering Committee on ECOTECH (SCE), the Terms of Reference (ToR) of the Emergency Preparedness Working Group (EPWG) and
 - the first Co-Chairs of Australia and Indonesia
 - Incumbent Co-Chairs: Chinese Taipei and Viet Nam

EPWG positioned under SCE



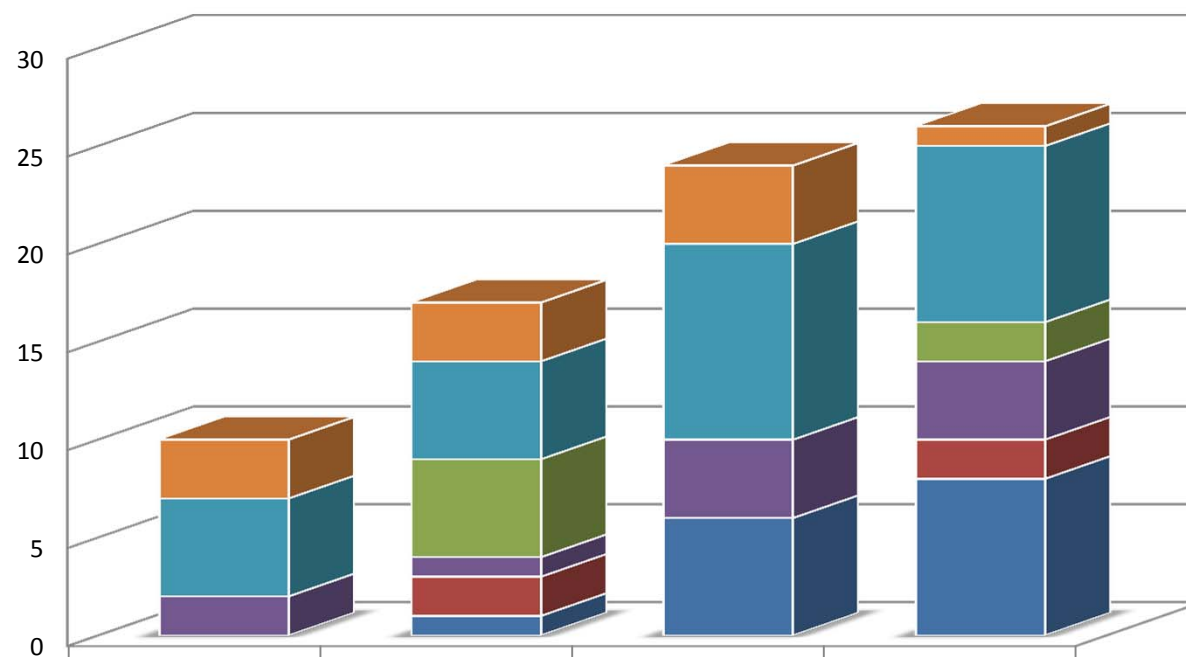
EPWG Mandate & Priorities

- **Mandate**
 - **To build the capacity** of APEC economies to mitigate, prepare for, respond to and recover from emergencies and disasters;
 - **To improve coordination and cooperation** on emergency and disaster preparedness efforts within APEC.
 - **no involvement of emergency relief**
- **Priorities**
 - **Business and community resilience**
 - **Business Continuity Plan with APEC SMEWG (MYP 2012~2014)**
 - **Public-private partnerships**
 - **Disaster risk reduction**
 - **Cooperation and coordination with regional and international stakeholders**
 - **Preparations for the recovery phase**

EPWG's partners

**APEC Fora and Non-Member Participation in EPWG Activities
2008-2011**

Number of times
APEC fora and non-
members
have participated in
EPWG activities



	2008	2009	2010	2011
UN system	3	3	4	1
regional or international institution	5	5	10	9
other APEC fora	0	5	0	2
nongovernmental or nonprofit	2	1	4	4
local government	0	2	0	2
business	0	1	6	8



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EPWG has delivered activities on capacity building www.apec-epwg.org

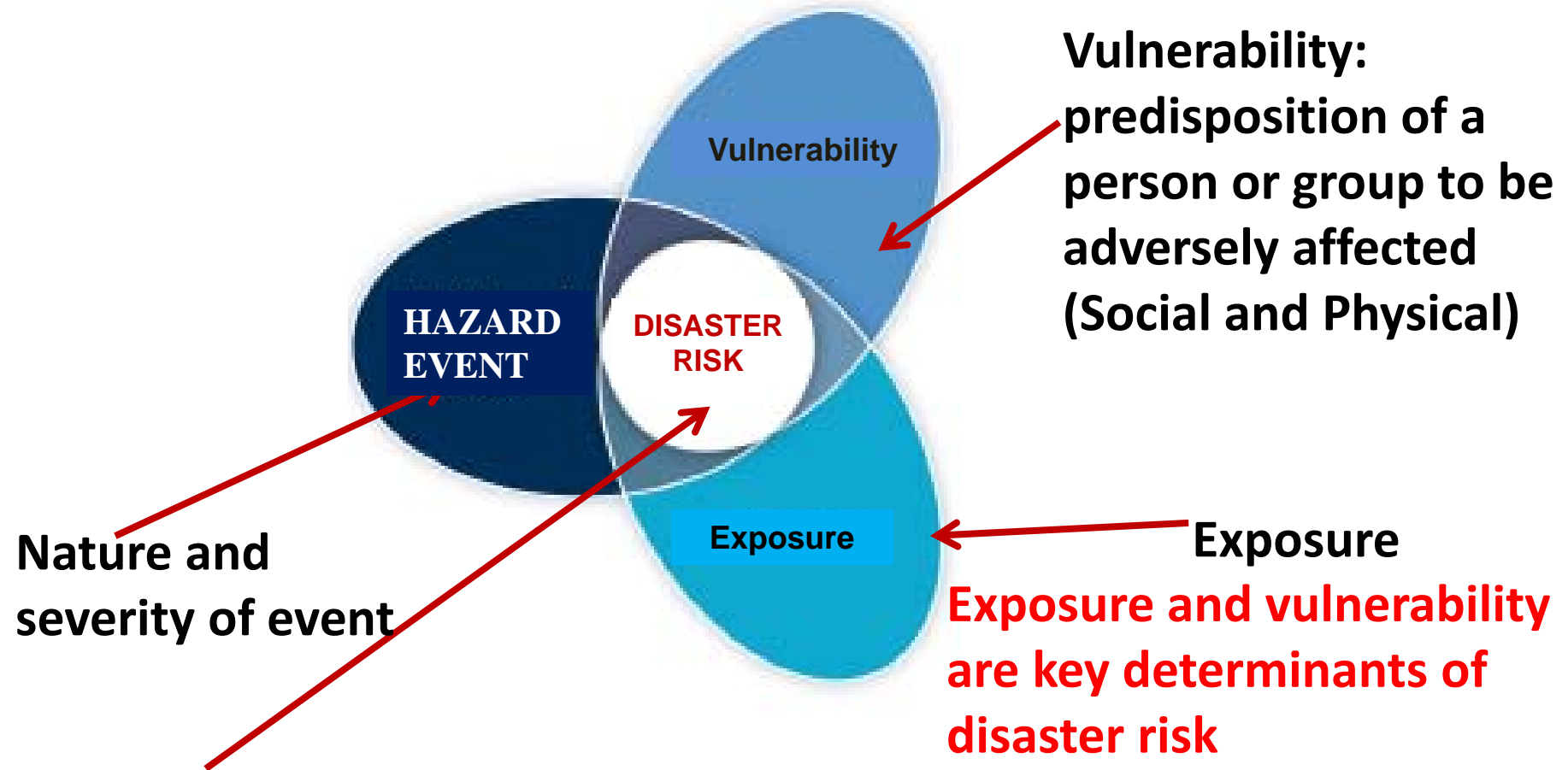
- **2008**
 - **Study Course on Disaster Emergency Response and Recovery**
 - **Economies, Business Community and Key International and Regional Partners**
 - **Large Scale Disaster Recovery**
- **2009**
 - **Damage Assessment Techniques**
 - **Long-Term Capacity Building for Disaster Risk Reduction**
- **2010**
 - **Public Private Partnerships and Disaster Resilience**
 - **Disaster Recovery and Rehabilitation**
 - **Forest Fires in APEC Region**
 - **Hazard Mapping and Risk and Vulnerability Assessment**
- **2011**
 - **Disaster Management Course**
 - **Abnormal Flood**
 - **Workshop on Private Sector Emergency Preparedness**
 - **School Earthquake Safety**
 - **Wildfires Management in APEC region**
- **2012**
 - **Quantitative Precipitation Estimation/Forecasting**
 - **Capacity Building for Disaster Recovery and Rehabilitation**



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Focal Issues

Impacts from hazard events depend on



Disaster Risk: the likelihood of severe alterations in the normal functioning of a community or society due to hazard events interacting with vulnerable social conditions

Exposure and Vulnerability

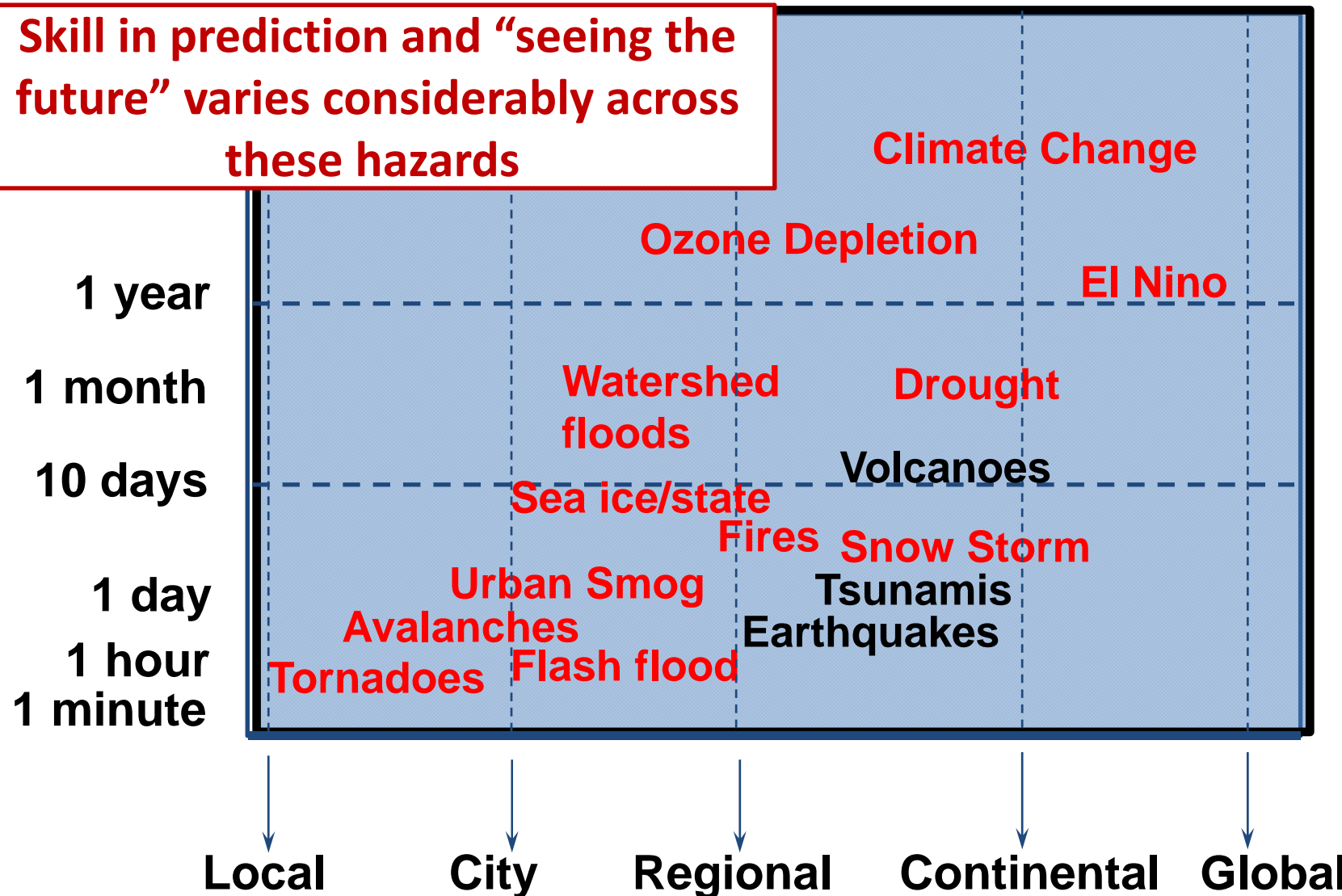
- **Social and demographic characteristics**
 - **More people and more complex societies**
 - **Growing inequality - Poverty**
- **Choices or necessity— where to live, work, play and travel**
 - **Urbanization of societies – most along coasts and rivers**
 - **Great concentrations of people in communities**
 - **More exposure**
- **Built and commercial environments**
 - **Growing density**
 - **Dependence – vulnerability**
 - **Transportation – people and goods**
- **More structure – much of its aging**
 - **Particularly in urban areas like public utilities, lifeline systems**

ACTIONS for adaptation and disaster risk management

- **Vulnerability**
 - poverty reduction
 - better education and awareness
 - sustainable development
- **Exposure**
 - asset relocation
 - weather-proofing assets
 - early warning systems
- **Hazard extremes**
 - Improved warning systems
 - “Low-frequency but high impact” event
 - HFA - “people-centred early warning systems.”

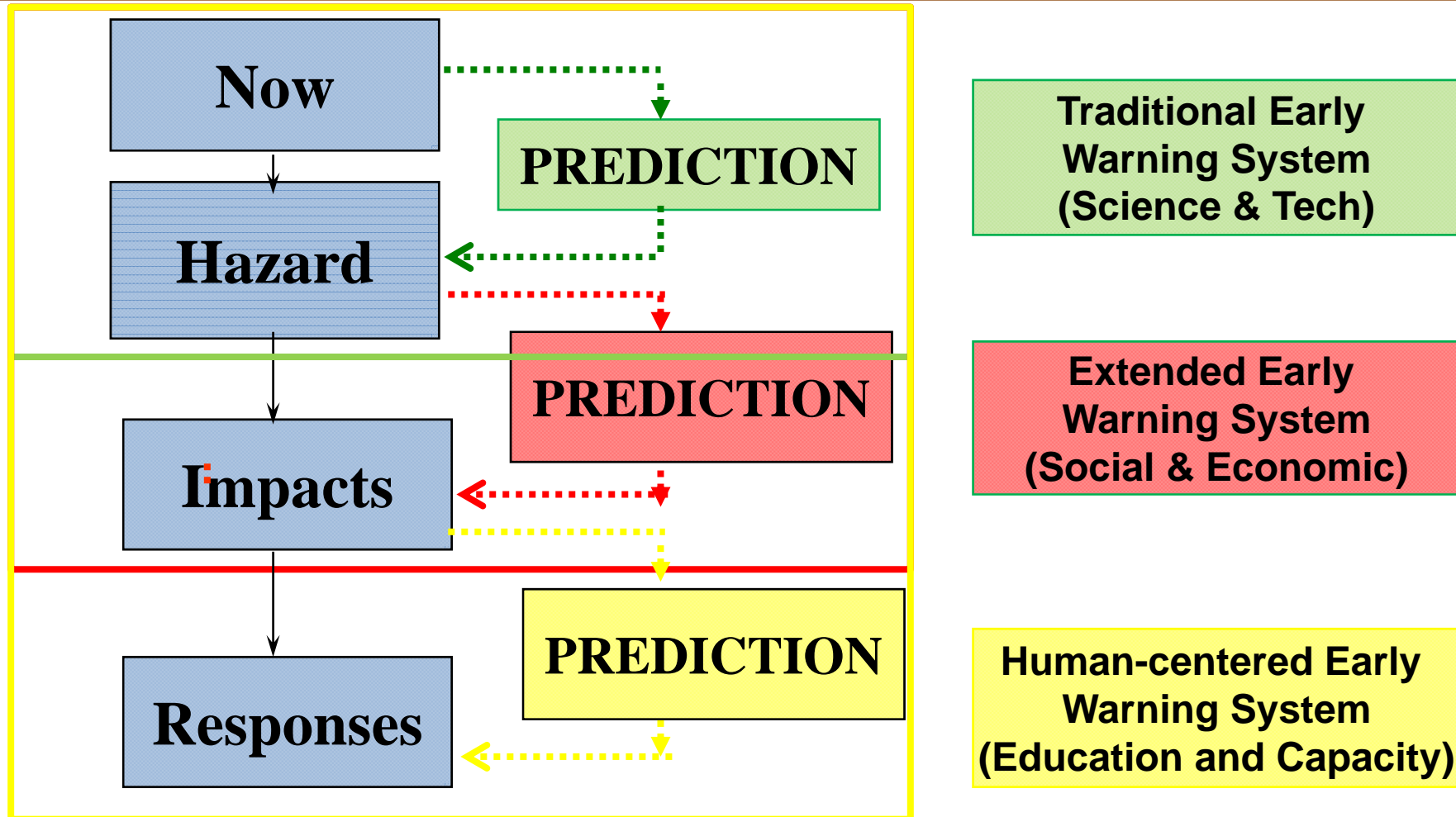
The challenges need capacity enhancement to solve problems

Skill in prediction and “seeing the future” varies considerably across these hazards



Way to better capacity enhancement

example: Improved Early Warning System



**Need coupled natural – social sciences – plus health, engineering, ...
Interactive prediction systems.**

Three elements to succeed emergency response

Scientific Prediction

- Provide forecasting based on models
- Tool for pre-disaster deployment
- Reference for decision support
- Limited by technology development

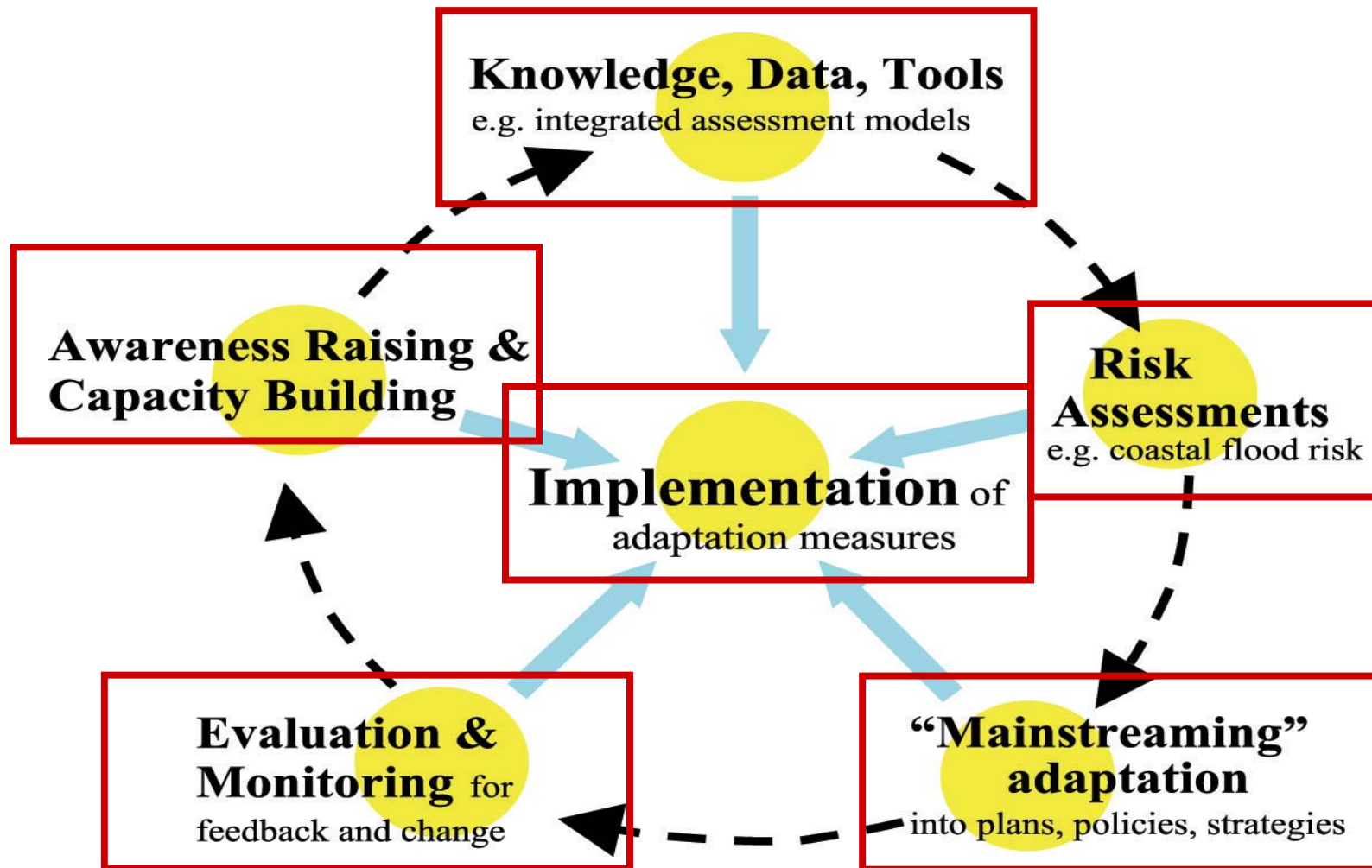
Rea-time Monitoring

- Provide updated data based on gauges
- Tool for pinpointing blind areas by forecast
- Reference for **revising** decision support
- Limited by number, location, transmission

In-time Operation

- Provide reaction based on well-defined plan
- Tool for saving more time before it's too late
- Reference for **allocating** emergency support
- Limited by determination of all-level administrators

Niche for EPWG





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Crosscutting Collaboration with other APEC Fora

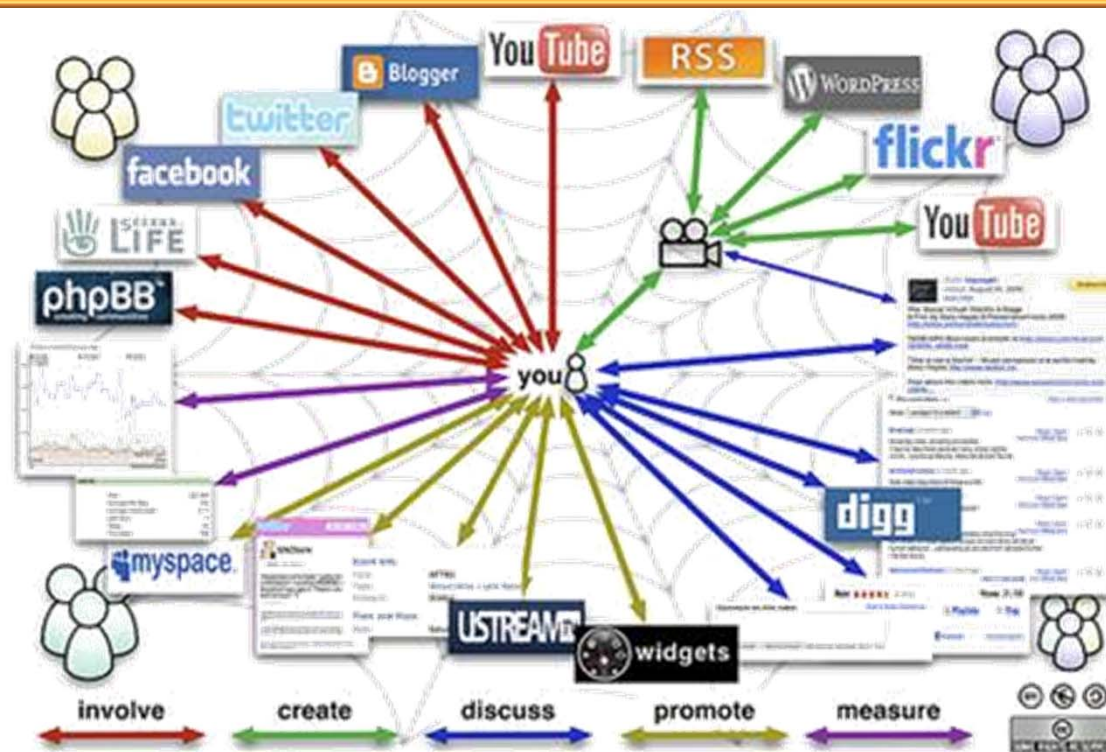
- 1. Focal point of EPWG**
- 2. Potential users: Student in schools and local communities**
- 3. Prioritize the common interest: earthquake and flood**
- 4. Train the trainers: For better empowering the schools and communities**
- 5. Participation by NGOs and NPOs: For implementing the public-private partnership**
- 5. Cross-boundary learning and best practices sharing**
- 6. Reduce language barrier: facilitate the knowledge transfer**
- 7. Respect the local knowledge and characteristics**
- 8. Incentives for curriculum modification in university: To introduce societal demands of disaster management**



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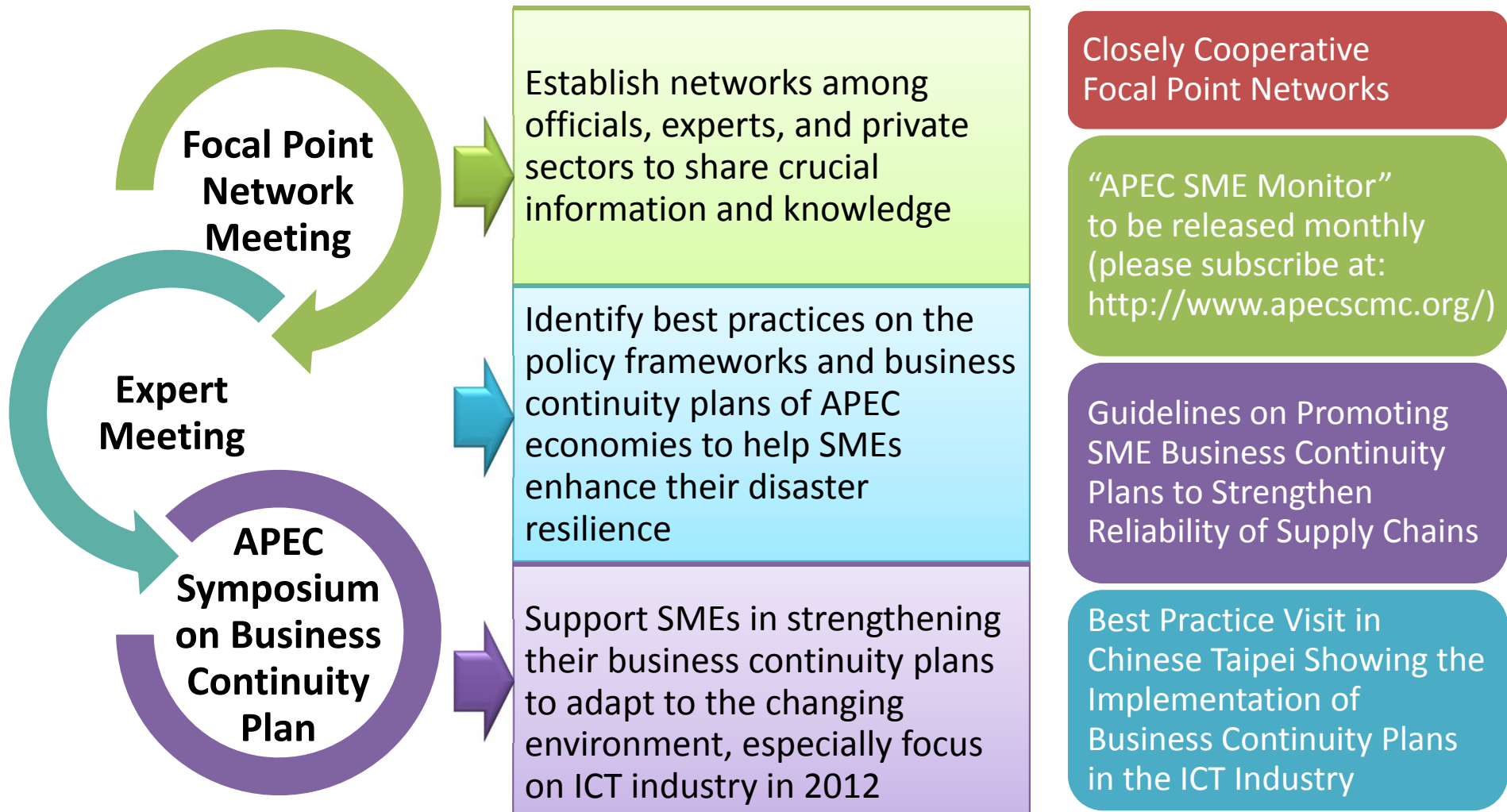
	IN THE OLD DAYS	NOW
LISTENING TO MUSIC		
WATCHING FILMS		
CHATTING WITH FRIENDS		
READING THE NEWS		
PLAYING MUSIC		

One Solution: APEC Future Resilience in Schools



- Let's start with schools – understand disaster risk
- From Schools to communities – make community safer and more sustainable
- From Communities to Communities of Practice - empowerment
- **Education, the best approach leading to Future Resilience**

Business Continuity Plan Collaboration with APEC SMEWG





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Concerning Issues

Issue 1: Scenario-based disaster risk management for large-scale compound disasters



Hurricane Katrina



Typhoon Morakot



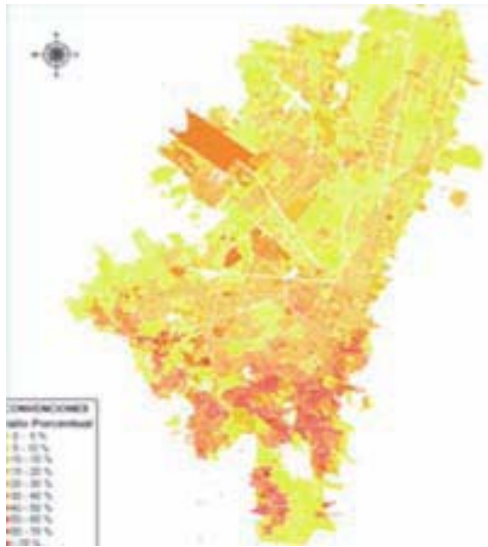
Great East Japan Eq

- **Cases of large-scale compound disasters in recent years (**Black-Swam Event, low-frequency but high impact**)**
 - 2005 Hurricane Katrina, 2009 Typhoon Morakot, 2011 the Great Tohoku Kanto Earthquake and Tsunami
- **Problems founds**
 - 1) “Unprecedented and complicated” impacts, 2) continuously developing situations, 3) simultaneous urgent demands, 4) challenges to engineering-based measures, 5) lacks of information integration....
- **Demands for disaster risk management**
 - Tools to build up scenarios for planning and drills
 - Design of information system to provide situation awareness
 - Estimation of urgent relief demands after large-scale compound disasters
 - Study of evolutionary characteristics of compound disasters

Issue 2: Climate change adaptation strategies with disaster risk reduction

- **Challenges of climate-change-related disasters could be**

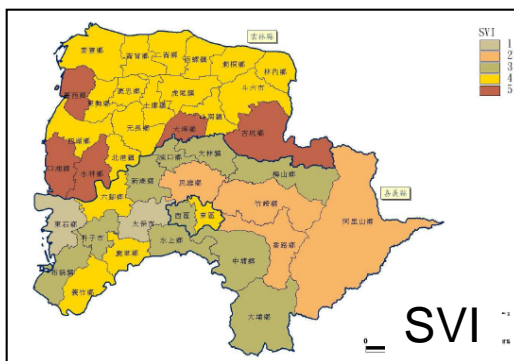
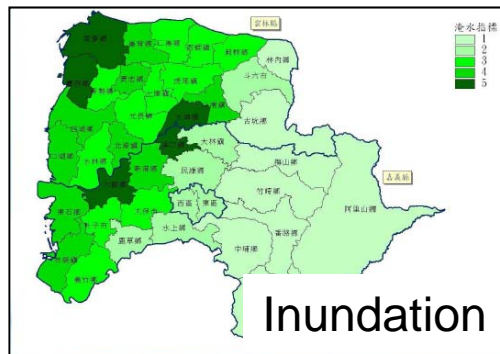
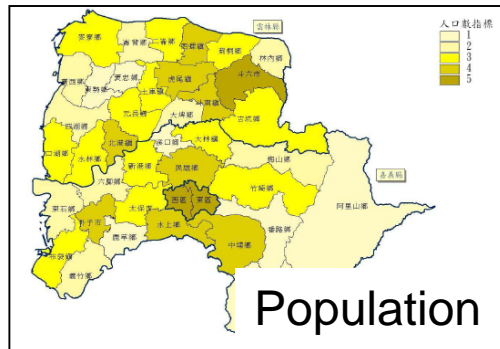
- **Direct impacts: 1) Higher temperature; 2) Sea level rise; 3) Rainfall distribution change; 4) More extreme rainfall events; 5) Typhoon and storm surge**
- **Evolving impacts: 1) Slope land disasters; 2) distribution of water resource; 3) investment on new development projects.....**



- **Demands for develop CCA and DRR**

- **Download scaling techniques to produce **scientific projection** for coming decades**
- **Risk map to identify risk** potential based on impacts by hazards like flood, slope land, land subsidence, vulnerability of costal areas

Issue 3: Social risk vulnerability assessment



- **Overlapping of hazard map and population exposure to identify “hot spots”**
 - Considered social factors: 1) population density and structure, 2) **education and income**, 3) economic activities, 4) past events and perception, 5) social support, 6) insurance
- **Problems founds due to social development**
 - 1) Rapid urbanization, 2) land use management, 3) aging society, 4) vulnerability of indigenous tribes, 5) tools for risk communication, 6) disaster resilience at community level
- **Products to be delivered**
 - Models for loss estimation
 - **Establishment of Social-economic Vulnerability Index (SVI) and Human Development Index (HDI)**

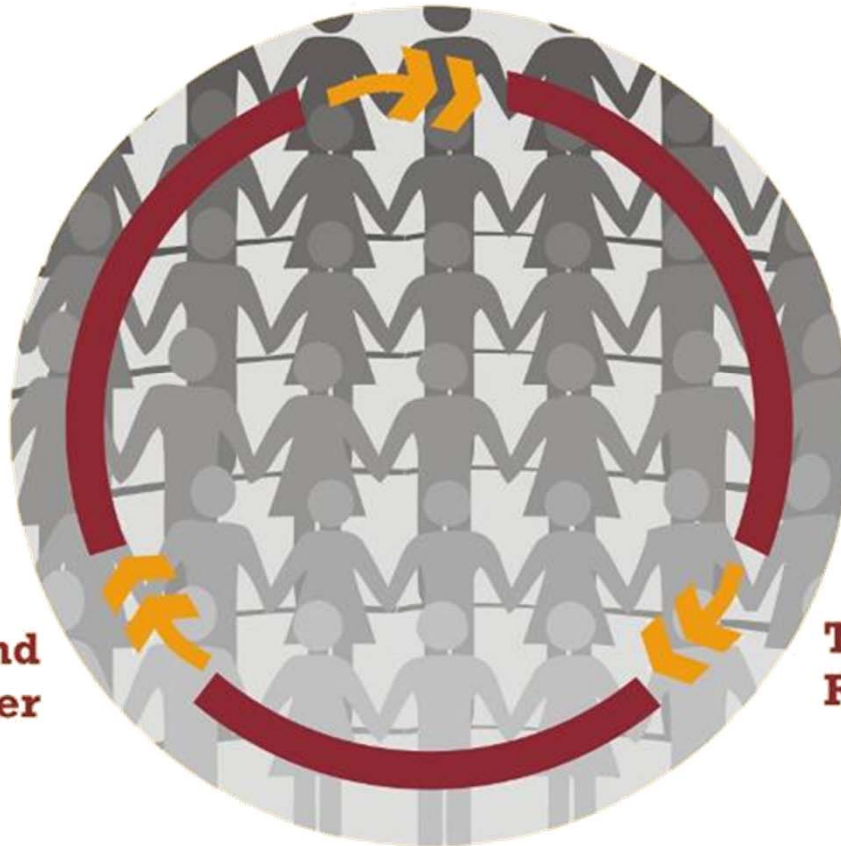
Issue 4: Critical infrastructure protection under threats from natural hazards



- **Threats**
 - According to the disaster risk exposure , beside population, we consider the threats to CIs.
- **Problems founds due to CI's failures**
 - Comprehensive and large-scale disruptions
 - National security
 - **Government and business operation continuity**
 - Basic civil protection
 - Direct impacts to people's livelihood.
- **Current developments for improving critical infrastructure protection**
 - Failure modes to individual hazards by risk assessment
 - Impact evaluation of system(s) failure
 - Status indicators for monitoring system satiability



To Learn and Experience



**To Teach and
Empower**

**To Practice and
Reflect**

- Thank You -