



**Asia-Pacific
Economic Cooperation**

2016/SOM3/EPWG/011

Agenda Item: 10.2

Compilation of Good Practices on Enhancing Resilience of GVCs to Natural Disasters

Purpose: Information

Submitted by: Japan

Forum Doc. No.: 2016/SOM2/025anx16



**10th Emergency Preparedness Working Group
Meeting
Lima, Peru
15-16 August 2016**



**Asia-Pacific
Economic Cooperation**

CTI 19-2015T-Enhancing Resilience of Global Value Chains to Natural Disasters

*Compilation of Good Practices on Enhancing
Resilience of Global Value Chains to
Natural Disasters*

Asia-Pacific Economic Cooperation (APEC)
Committee on Trade and Investment

May 2016

APEC Project: CTI 19 2015T

Printed in 2016

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I . Introduction

This paper is compiled based on the presentations made during the APEC Capacity Building Seminar on Enhancing Resilience of Global Value Chains to Natural Disasters, initiated by Japan and co-sponsored by Australia, Canada, Chile, Mexico, the Philippines, Peru, Russia, Chinese Taipei, Thailand and Viet Nam, was held in Tokyo, Japan on March 14th-16th, 2016.

27 participants from twelve APEC member economies (Chile, China, Indonesia, Malaysia, Peru, the Philippines, Russia, Singapore, Chinese Taipei, Thailand, United States and Viet Nam) attended the Seminar, and speakers from public and private sectors from APEC economies as well as international organizations shared their views and experiences. The participants also visited Tohoku Region to get to know better about the recovery from the damage by the Great East Japan Earthquake in 2011.

II .Background

Asia-Pacific region is known to be prone to natural disasters, and the economic consequences may spread through value chains across the region and beyond, as experienced in particular through the Great East Japan Earthquake in March 2011. Various efforts have been undertaken by many stakeholders in the region to enhance resilience to natural disasters. This Seminar is intended to deepen understanding on the significance of natural disasters for trade and investment relations in the region and mutually learn from experiences, with a view to sharing common directions of promoting efforts to enhance resilience of GVCs as an important part of trade and investment policies.

This Seminar is a part of the initiatives for Workstream 8 (Enhance resiliency of GVCs) of APEC Strategic Blueprint for Promoting GVCs Development and Cooperation, and is an extension of the

APEC Guidebook on Resilience of GVCs against Natural Disasters. 2015 APEC Joint Ministerial Statement welcomed these two initiatives as “contributing in particular to improving the investment environment and enhancing MSMEs’ participation in GVCs, as well as to disaster risk reduction”.

III. Discussions and Future Directions

GVC is an integral part of the modern economic operation that brings about significant efficiency, but the vulnerabilities associated with being connected through GVCs are also widely recognized. Based on such recognition, the major question that the Seminar addressed was: What we can do to enhance resilience of GVCs against natural disasters? The insights and experiences presented during the Seminar led to the following implications.

First, in many cases of individual companies presented, in particular in Session 2, resilience is an essential part of business strategies, and a business continuity plan (BCP) and business continuity management (BCM) are gaining importance for their operations. This is “Self-Help” approach to the over-arching question.

Second, resilience of the business locations is critical for the resilience of businesses, since they rely on the local infrastructure and public services for their day-to-day operations. As such, area-wide resilience can affect a company’s location choice to establish their businesses. Area-based cooperation efforts such as “Area BCM” can significantly contribute to enhancing resilience.

Moreover, resilience of a GVC relies on cooperation among stakeholders beyond the business location. Since participants to a GVC are all connected, even disasters at a distance, and the resilience against them, can affect broad range of businesses through the value chain. Many cases presented in Sessions 2 and 4

are highly relevant in this regard. These can be called “Mutual-Help” approaches to enhance resilience.

Third, Public Sectors can play critical role in encouraging companies to develop BCPs or facilitate stakeholder collaboration. Various cases were presented in Sessions 3, 5 and 6 from diverse perspectives from many APEC economies as well as international organizations. This can be called “Public-Help” approach.

With these three contrasting but mutually complementary approaches for enhancing resilience to natural disasters, namely Self-Help, Mutual-Help, and Public-Help, APEC economies can together enhance resilience to GVCs to natural disasters, thereby promote participation of MSMEs in GVCs, improve investment environment, promote trade and investment in the Asia-Pacific region, and ultimately achieve the quality growth.

Finally, the consensus view of the Seminar’s participants and speakers agreed that the project achieved its intended objectives. They favorably evaluated the Seminar and acknowledged benefits for APEC to continue sharing and discussing good practices on enhancing resilience of GVCs to natural disasters.

Contents

1. Program of this seminar	1
2. Summary of speech contents	3
3. Key elements of speaker's presentations	11
4. Implications	30

1. Program of this seminar

1st Day: March 14

Keynote Speech: Socio-economic impacts of natural disasters

Prof. Nobuaki Hamaguchi, Ph.D. *Socio-economic impacts of natural disasters*

Session 1: GVC resilience to natural disasters: an overview

Mr. Yuta Kumo, *Summary of "APEC Guidebook on Resilience of GVCs to Natural Disasters"*

Mr. Hideyuki Makimoto *"Recovery from the Great East Japan Earthquake, Five Years Later"*

Session 2: Efforts towards enhancing GVC resilience by private enterprises

Mr. Teruhide Oka *BCM by Renesas, Recovery from March 11, 2011*

Mr. Takashi Itou *Ajinomoto Group ECP (Enterprise Continuity Plan)*

Mr. Lim Sek Seong *Efforts Towards Enhancing GVC Resilience by Private Enterprises*

Session 3: Roles and initiatives of public sectors (1)

Keynote Speech: APEC Disaster Risk Reduction Framework

Undersecretary Ferdinand Cui Jr. *APEC Disaster Risk Reduction Framework: Enhancing the Resilience of Supply Chains*

Mr. Mitsuhiro Nishida *Mitigating the Impact of Financial Crises on SMEs*

Mr. Yoshiki Hiruma *Applying financial expertise to design a resilient future*

Dr. Li Wei-Sen *Moving toward to a safer and resilient business environment in the Asia-Pacific region*

Ms. Kyoko Kondo *Mega disasters facing Asia affecting GVC - Roles and initiatives of public sectors -*

Dr. Venkatachalam Anbumozhi *Strengthening GVC Resilience against Disasters by Governments and IOs - Status quo & Opportunities-*

Session 4: Initiatives and collaboration among stakeholders to enhance resilience

Ms. Sayaka Terai *Disaster Prevention Approaches by the Tokyo Chamber of Commerce and Industry*

Mr. Takahiro Ono *Multi-Stakeholder based Regional Business Continuity Management*

Dr. Masakazu Takahashi *Development of Concept and Procedures of Area Business Continuity Management (Area BCM)*

1

Program of this seminar (Cont.)

1st Day: March 14

Session 5: Roles and initiatives by public sectors (2); Good practices to be presented by seminar participants

Mr. Swatteuk Somneuk *Early Warning One of The Disaster Risk Reduction Role*

Mr. Anh Duong Nguyen *Enhancing resilience of GVCs to natural disaster: The case of Vietnam*

Ms. Viviana Araneda *Enhancing Resilience of Global Value Chains to Natural Disasters: The Experience of Chile*

2nd Day: March 15

Field Trip to the Tohoku Region (North-East Region)

Mr. Keiichi Iwase, *Tohoku Region's Economic Overview and Efforts Toward Industrial Reconstruction*

Prof. Hiroaki Maruya, Ph.D. *Restoration Status of Damaged Tohoku and BCM*

Mr. Mitsuaki Sato *Project to Assist in the Pairing of Idle Machinery with Companies Free of Charge*

Company visit

Suzuki Kogyo Co. Ltd. *Recovery and reconstruction from the Great East Japan Earthquake through the Business Continuity Plan (BCP)*

Ishinomaki Mill, Nippon Paper Industries Co., Ltd. *Progress of Recovery - Ishinomaki Mill*

3rd Day: March 16

Session 6: Roles and initiatives by public sectors (3)

Mr. Daisuke Asano *Japan's policy on emergency response of oil supply after the 3.11 earthquake*

Dr. Yuki Matsuoka, Ph.D. *Sendai Framework for DRR and Expectations to Private Sector*

Mr. Akira Doi *Private Sector Strengths Applied - Collaboration on a good practices publication with UNISDR -*

Mr. Michio Ito *Sentinel Asia*

2

2. Summary of speech contents

Keynote Speech

Prof. Nobuaki Hamaguchi,
Research Institute for Economics
and Business Administration,
Kobe University; Faculty Fellow,
Research Institute of Economy,
Trade and Industry (RIETI)

The first keynote speech by professor Hamaguchi gave the participants a broad overview of socio-economic impacts of natural disasters. He explained how we face the risk of natural disasters and its global impacts through ever-expanding interregional value chains, and concluded that resiliency is as important as having an access to global supply chain for individual business, area, economy and region.

Session 1

Mr. Yuta Kumo,
Deloitte Tohmatsu
Financial Advisory LLC

Mr. Kumo provided a commentary on APEC Guidebook on Resilience of GVCs to Natural Disasters, which was endorsed by 2015 APEC Ministerial Meeting held in Manila. The Guidebook illustrates the respective roles and initiatives of private sectors, governments, international organizations and local communities. It is expected to help policy makers formulate trade and investment policies to realize disaster management for liberalized, open and resilient Asia Pacific region.

Mr. Hideyuki Makimoto,
Reconstruction Agency, Japan

Mr. Makimoto explained the initiatives and achievements of recovery from the Great East Japan Earthquake in the first five years of its ten-year reconstruction timeframe. Through the five major initiatives of priority, restoration of public infrastructure and housing reconstruction has seen a substantial progress. He also introduced their efforts and achievements over the air radiation dose rates and food safety, as well as reviving regional industries such as tourism and fishery processing.

3

Summary of speech contents (Cont.)

Session 2

Mr. Teruhide Oka,
Senior Director, Corporate
Planning Division,
Corporate Planning Unit,
Renesas Electronics
Corporation

Mr. Oka introduced their new BCM as a major semiconductor producer in Japan. They reinforced their BCM to focus on ensuring continuous and stable supply of their products to their customers, based on the lessons learnt from the recovery of disaster-stricken factory. To be specific, they have realized shortening the recovery time by facility improvement, introduction of alternative production lines, and by securing appropriate inventory through enhancement of supply chain management.

Mr. Takashi Itou,
Associate Manager, General
Affairs and Risk Management
Dept, Ajinomoto Co. Inc.

Mr. Itou from Ajinomoto, a major food and chemical company, illustrated their concept of Enterprise Continuity Plan (ECP). In their ECP, stronger emphasis is put on human life and community than conventional concept of BCP. In case of a disaster, ECP places the utmost importance on securing safety of employees and their family. Then it provides support to local community for recovery from the disaster, before making effort on the early restoration of business activities.

Mr. Lim Sek Seong,
BCM Service Leader -
ASIA, Marsh Risk
Consulting, Singapore

As a corporate risk consulting professional, Mr. Lim Sek Seong introduced the methods, tools and key points to enhance and mature organizational resilience as a business strategy. He pointed out that a corporate business continuity should align with their mission, vision, and objectives, based on the analysis of key impacts over time on and the established recovery and resumption priorities for the critical business activities under disaster events. He also introduced the international standard for Business Continuity Management System (ISO22301).

4

Summary of speech contents (Cont.)

Session 3

Undersecretary Ferdinand Cui Jr.,
Deputy Head, the
Philippines' Presidential
Management Staff

Undersecretary Ferdinand Cui Jr. from the Philippines' Presidential Management Staff presented a keynote speech on the APEC Disaster Risk Reduction Framework, efforts of Philippine Government to enhance supply chain resilience, and learnings from the Super typhoon Haiyan experience. His message that "Supply chains can be resilient only if each link is resilient" left a strong impression about the critical need for a whole-of-society approach toward this issue. Within and among economies, there is a need to adopt horizontal and vertical collaboration by planning, budgeting, implementing, and conducting monitoring and evaluation together toward attaining key resiliency outcomes. He also emphasized that resilient people and resilient communities make resilient businesses and GVCs.

Mr. Mitsuhiro Nishida,
Deputy Director, Finance
Division, Small and
Medium Enterprise Agency,
METI, Japan

Mr. Nishida presented about the overview of SMEs and supply-chain disruption in the past crises in Japan. He explained their initiatives and roles of safety-net public finance and public credit guarantee system for SMEs to mitigate negative impacts of crises, and therefore, to reinforce resilience of global value chain. He urged continuous discussion and cooperation between policy makers and financial policy makers for realizing SMEs' access to finance.

Mr. Yoshiki Hiruma,
Director DBJ BCM rating,
Development Bank of Japan Inc.

Mr. Hiruma from DBJ, a government affiliated financial institution, introduced their financial instruments of BCM ratings to evaluate and facilitate private companies' efforts on disaster risk reduction and business continuity.

5

Summary of speech contents (Cont.)

Session 3

Dr. Li Wei-Sen,
Former Co-Chair, APEC EPWG
/ Secretary General, National
Science and Technology
Center for Disaster Reduction,
Chinese Taipei

Dr. Li from Chinese Taipei explained the importance of SMEs in the APEC region in terms of both number of companies and economic contributions. Nevertheless, there are many challenges for SMEs to deal with the emergency preparedness by their own. Dr. Li introduced six conclusions including incentivizing MSMEs to improve their resilience. He also introduced a case of ICT industry in Chinese Taipei.

Ms. Kyoko Kondo,
Executive Director, Asian
Disaster Reduction Center
(ADRC)/ APEC EPWG Co-chair

Ms. Kondo, ADRC suggested that, in addition to the impact of a disaster through GVC, a single mega disaster could directly affect multiple economies by recalling the case of the Indian Ocean Tsunami, 2004, and that national ministries and local governments thus need to work together beyond borders in close collaboration with private sector. She also stressed that APEC bringing together both sides of the Pacific Ocean as one of the best forums to address the risks of Tsunami.

Dr. Venkatachalam Anbumozhi,
Senior Economist at the Economic
Research Institute for ASEAN and
East Asia (ERIA)

Dr. Anbumozhi outlined the vulnerability of GVCs against disasters in the era of climate change, and introduced various efforts made by national and international organizations. He pointed out the gaps in knowledge, capacity and finance as barriers to resilient GVCs, and emphasized the importance of awareness raising, capacity building, and consolidated approach by regional economy.

6

Summary of speech contents (Cont.)

Session 4

Ms. Sayaka Terai,
Assistant Manager, Regional
Development Division, Tokyo
Chamber of Commerce and
Industry (TCCI)

Ms. Terai introduced their efforts of disaster prevention through cooperative approaches to improve the disaster preparedness of the member companies in Tokyo, a mega city at high risk of exposure to natural hazard. She showcased initiatives aimed to enhance resilience in the area as a whole, which are planned based on the experiences of past disasters and on damage estimation of inland earthquakes in Tokyo.

Mr. Takahiro Ono,
Manager of Risk Consulting Office,
Mitsubishi Corporation Insurance
Co., Ltd.

Mr. Ono introduced Kyoto BCP, a framework of mutual support to protect community, employment and economic activities to maintain and improve the "Power of Kyoto". This initiative is based on pre-disaster agreements between local governments and private sector with the shared understanding that employment and economic activities are critical to recovery and reconstruction of the regional community.

Dr. Masakazu Takahashi,
Disaster Management Specialist,
Former Advisor of OYO
International Corporation

Dr. Takahashi shared his experience as a team leader of JICA study on the development of concept and procedures of Area BCM targeting 10 ASEAN member states and piloted in industrial agglomerated areas in Indonesia, the Philippines, and Vietnam. This is another form of mutual-help, involving multi-stakeholders of both public and private sectors, expected to enhance resilience of businesses in the area.

7

Summary of speech contents (Cont.)

Session 5

Mr. Swatteuk Somneuk,
Senior Expert, National
Disaster Warning Center,
Thailand

Mr. Somneuk introduced Thailand's initiatives to establish National Disaster Warning Center to provide early warning of disasters to public citizens through various media. In addition to development and operation of early warning system, NDWC's missions includes enhancing citizen's disaster preparedness through community outreach of disseminating knowledge about disasters and providing evacuation drills.

Mr. Anh Duong Nguyen,
Deputy Director, Department for
Macroeconomic Policy and
Integration Studies Central
Institute for Economic
Management Ministry of Planning
and Investment, Vietnam

Mr. Anh Duong Nguyen presented on their efforts to prevent and mitigate the impacts of floods and typhoons. He pointed out the importance of allocation of resources balancing ex ante prevention and ex post relief, building capacity for enhancing resilience to natural disaster and explicit role for SMEs and value chains in current policy substances for disaster prevention and mitigation.

Ms. Viviana Araneda,
General Directorate for
International Economic Relations,
Chile

Ms. Viviana Araneda explained the economic impacts and economic resilience caused by past natural disasters in Chile. She presented the potential problems in GVCs in Chile, including challenges in the export industry, domestic and foreign investment and little innovation-intensive activities in this economy.

8

Summary of speech contents (Cont.)

Field Trip to the Tohoku Region

Mr. Keiichi Iwase,

Director General for Economic Policy Department, Tohoku Bureau of Economy, Trade and Industry

Mr. Iwase, from Tohoku Bureau of Economy, Trade and Industry, presented the cases of companies/organizations which coped with the impact of the Great East Japan Earthquake and the tsunami, and took "Build Back Better" reconstruction measures. He introduced the efforts towards industrial revitalization to strengthen regional competitiveness by promoting utilization of local resources in the Tohoku Region and encouraging cooperation to disseminate the "Tohoku" brand as a whole as well as enhancing competitiveness of regional manufacturing industries.

Prof. Hiroaki Maruya, Ph.D.

International Research Institute of Disaster Science (IRIDeS), Tohoku University

Prof. Maruya gave the participants four key messages from the experience gained through the Great East Japan Earthquake and the tsunami. Particularly, for the business continuity of affected companies, he emphasized the importance of mutual support agreement at a time of disaster with another company in the same industry at some distance. Prof. Maruya gave the participants four key messages from the experience gained.

Mr. Mitsuaki Sato,

Sendai Chamber of Commerce and Industry

Mr. Sato, from Sendai Chamber of Commerce and Industry, introduced the scheme of assistance among private companies by using nationwide network regarding the delivery of the machine tools for free.

Company visit

Suzuki Kogyo Co., Ltd.
Ishinomaki Mill, Nippon Paper Industries Co., Ltd.

Both Suzuki Kogyo Co., Ltd. and Ishinomaki Mill, Nippon Paper Industries Co., Ltd. explained the initiative of recovery and reconstruction from the Great East Japan Earthquake and the tsunami, and efforts toward the future. They presented the importance of the practice of BCPs on a daily basis and social responsibility of private company to resume their business activity by early recovery.

9

Summary of speech contents (Cont.)

Session 6

Mr. Daisuke Asano,

Deputy Director, Policy Planning Division, Natural Resources and Fuel Department, Agency for Natural Resources and Energy, METI, Japan

Mr. Asano, from Natural Resources and Fuel Department, Agency for Natural Resources and Energy, METI, Japan, introduced Japan's policy on emergency response of oil supply after the Great East Japan Earthquake and the tsunami.

He presented three issues necessary to solve for natural disaster preparedness; comprehensive "Inter-Company BCP" of oil industry, Inter-Ministries cooperation, and addressing vulnerability of Oil Supply Infrastructures.

Dr. Yuki Matsuoka, Ph.D.

Head / Senior Programme Officer, UNISDR Office in Japan

Dr. Matsuoka, Head / Senior Programme Officer, UNISDR Office in Japan, introduced Sendai Framework for Disaster Risk Reduction 2015 -2030 and expectations to private sector. She emphasized the shift from considering stakeholders as victims and vulnerable to agents of change and focus on empowerment and inclusion. She also pointed out that private sectors are expected to integrate disaster risk management into business models and practices via disaster risk-informed investments.

Mr. Akira Doi,

General Manager External Affairs, Kokusai Kogyo Co., Ltd.
Secretary General, Japan Bosai Platform

Mr. Doi, from Kokusai Kogyo, introduced a public report about good practices in disaster risk reduction by collaborating with UNISDR Office in Japan, which was issued in 2013. It contains various case studies of disaster risk reduction by private companies, and five take-home messages for easy reference to put disaster risk reduction into practice.

Mr. Michio Ito,

Senior Engineer, Satellite Applications and Operation Center (SAOC), Japan Aerospace Exploration Agency (JAXA), Japan

Mr. Ito, from Japan Aerospace Exploration Agency (JAXA), introduced unique initiative by collaborative activities among space agencies and disaster management agencies to utilize space applications such as remote sensing for disaster risk reduction and management in Asia-Pacific region. This project is called Sentinel Asia and has more than 100 organizations from 25 countries as joint project team members in Asia-Pacific region.

10

3. Key elements of speaker's presentations

Keynote Speech: Socio-economic impacts of natural disasters



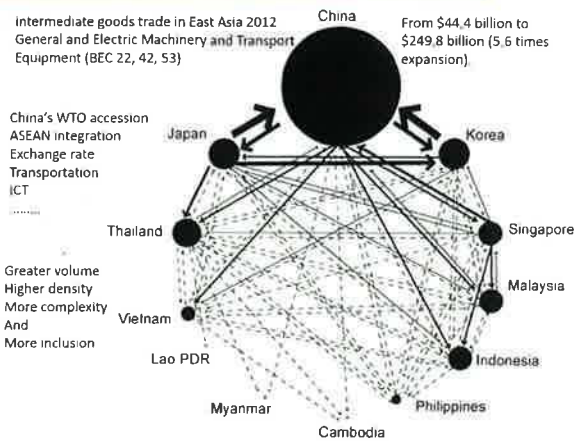
Prof. Nobuaki Hamaguchi,
 Research Institute for Economics and Business
 Administration, Kobe University; Faculty Fellow,
 Research Institute of Economy, Trade and Industry
 (RIETI)

Resiliency is as important as having an access to global supply chain for individual business, area, economy and region.

- In natural disasters, the business must overcome many challenges
- Normally functioning supply chain seems a free-good.
 - But we realize that it was so precious when we lose it.

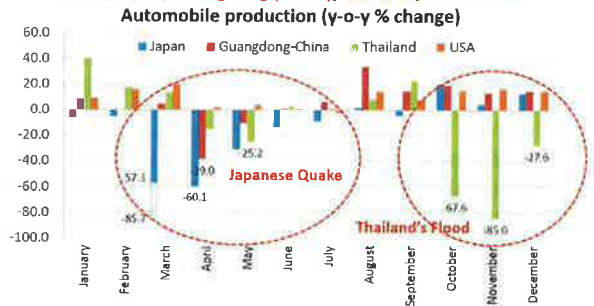
Possible countermeasures

- ✓ Private companies:
 - BCP
 - Investment in protection of workplace
 - More visibility in the supply chain
 - Creation of redundancy
- ✓ National/Local level: E.g. Area BCP & BCM by JICA
- ✓ International/regional cooperation:
 - Researches, guidelines, mechanisms
 - Contingency measures for business continuity
 - Subsidy and credit
 - Insurance of economic losses



Natural disasters create deep shocks

The Global Impact of the Japanese Quake and Thailand's Flood



Source: JAMA, Statistic Bureau of Guangdong Province, TAI, Federal Reserve Board

Session 1 : GVC resilience to natural disasters: an overview



Mr. Yuta Kumo,
 Deloitte Tohmatsu Financial Advisory LLC

"APEC Guidebook on Resilience of GVCs to Natural Disasters"
http://mddb.apec.org/Documents/2015/MM/AMM/15_amm_015app02.pdf

APEC Guidebook on Resilience of GVCs to Natural Disasters

Conclusion

- The Guidebook is expected to assist formulating trade and investment policies and disaster management policies to realize liberalized, open and resilient Asia Pacific region.



Initiatives by private enterprises towards enhancing GVC resilience

- Case 3-1 : BCP Preparation and BCM Practice for the Continuation of Core Operations
- Case 3-2 : Contract Production Agreement among the Label Printers Associations
- Case 3-3 : Boosting Production at Undamaged Plants Following the 2011 Floods in Thailand
- Case 3-4 : Supplier Visualization and Multi-sourcing
- Case 3-5 : Implementation of BCP/BCM in the Face of the Great East Japan Earthquake
- Case 3-6 : Case Study on Production Outsourcing during the Great East Japan Earthquake
- Case 3-7 : "Affiliated BCP" in the Oil Industry

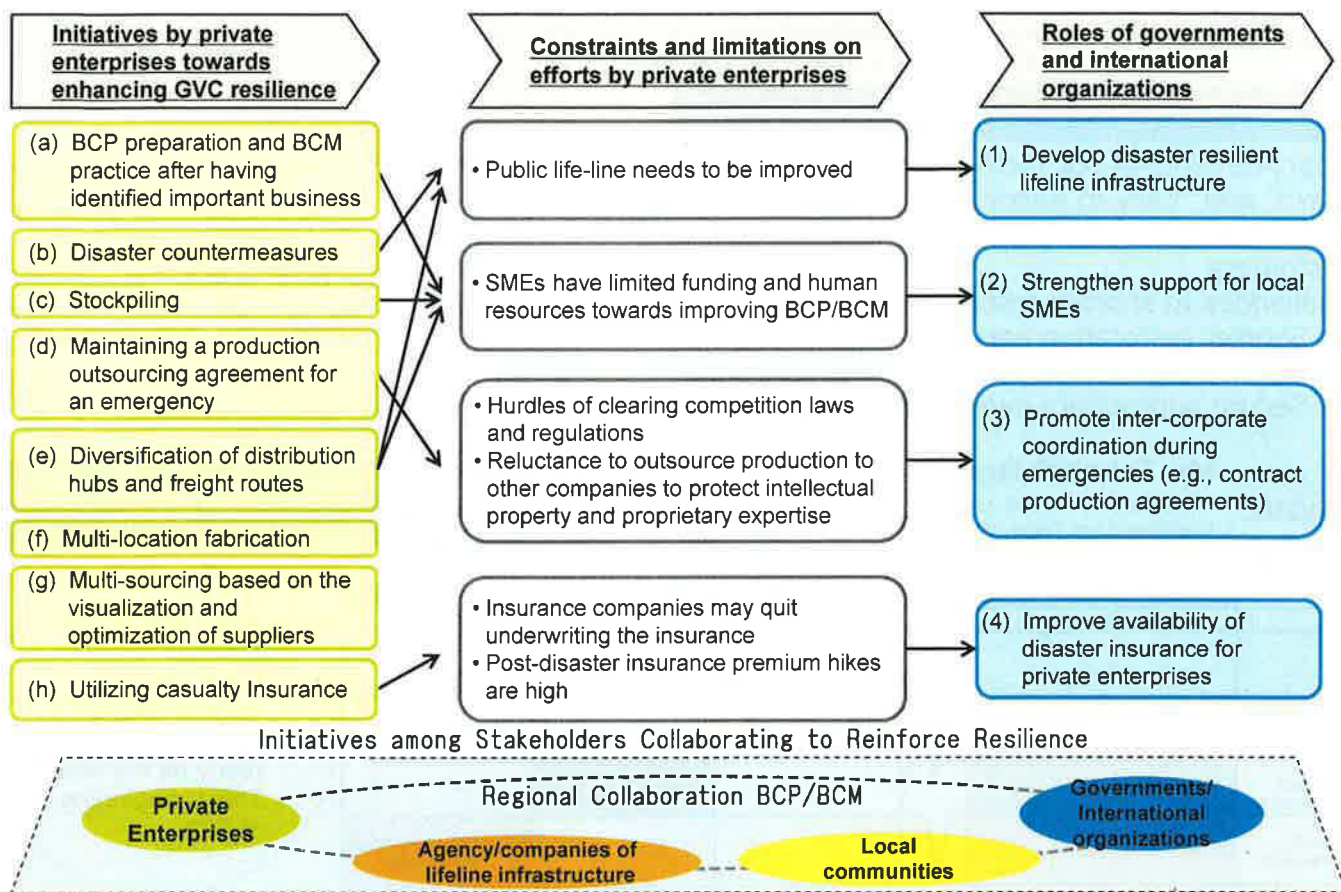
Roles of governments and international organizations

- Case 4-1 : Fundamental Plan for National Resilience by the Japanese Government
- Case 4-2 : Collaborative Efforts of the Oil Industry
- Case 4-3 : ASEAN Smart Network Initiative
- Case 4-4 : Singapore Government Supports for SMEs to Introduce BCP/BCM
- Case 4-5 : Financial Assistance Service Using BCM Ratings by the Development Bank of Japan Inc.
- Case 4-6 : Compilation of Hypothetical Cases Related to Great East Japan Earthquake
- Case 4-7 : Otagai Project: Collaborative Activity by Japan-ASEAN

Collaboration among stakeholders to improve GVC resilience

- Case 5-1 : "Kyoto BCP" Initiatives
- Case 5-2 : Regional Collaboration BCP in the Chubu Region
- Case 5-3 : Area-based BCM led by JICA
- Case 5-4 : Linking Together 514 Chambers of Commerce and Industry—Unused Machinery Matching Project

Overview of "APEC Guidebook on Resilience of GVCs to Natural Disasters"



Mr.Hideyuki Makimoto,

Reconstruction Agency, Japan

Initiatives and Achievements of Recovery from the Great East Japan Earthquake, Five Years Later

Five Initiatives to promote a robust recovery

- **Support for Evacuees:** Physical and mental health care and community development
- **Housing Reconstruction & Community Development:** housing, healthcare facilities, and infrastructure
- **Reviving Industry & Livelihoods:** Tourism, fishery and fisheries processing industries
- **Revitalizing & Reconstruction Fukushima:** Accident cleanup and radioactive decontamination
- **Creation of "New Tohoku":** utilize and disseminate private sector manpower and know-how

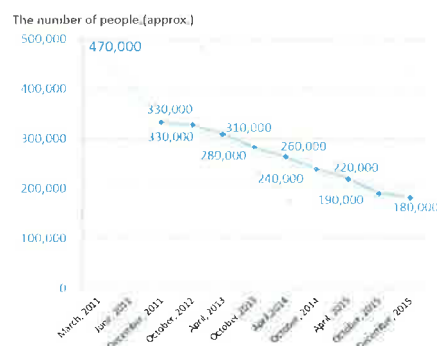
Adaption of World's Strictest Level of Standard Limits for Food

Japan Standard Limits under Food Sanitation Act	EU Council Regulation (Euratom) 2016/52	U.S. CPG Sec. 560.750 Radionuclides in Imported Foods - Levels of Concern	CODEX CODEX STAN 193-1995
Drinking water	10	1,000	1,000
Milk	50	1,000	1,000
Infant foods	50	400	1,000
General foods	100	1,250	1,000
		Food	Infant foods Foods other than infant foods

※Standard Limits in the above table are used to make radiation doses received be below a certain level and are not equivalent to the dose of water between safety and danger

Source: regulations of the Ministry of Health, Labour and Welfare

Number of people who had to leave their home



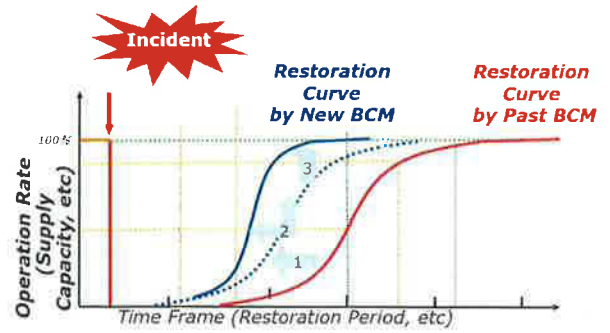


Mr. Teruhide Oka,

Senior Director, Corporate Planning Division, Corporate Planning Unit, Renesas Electronics Corporation

New BCM Concept from Lesson & Learned

- Improvements of our factories “Difficult to Break down” and “Easy to Recover”
- Goal is to ensure continuous and stable supply to customers
- Challenges to shorten restoration period
 1. Shorter restoration period at original Factories
 2. Risk Management by alternative production
 3. Secure appropriate inventories by enhanced SCM



Mr. Takashi Ito,

Associate Manager, General Affairs and Risk Management Dept, Ajinomoto Co. Inc.

Enterprise Continuity Plan - stronger emphasis on human life and community support

	ECP				
	Preparation	disaster	Stage for securing safety of employees and the family	Stage for aid and recovery	Stage for business recovery
Basic Policy ①: Ensure the safety	Manual for Crisis Control in Aji HQ.			Ensure the safety Reduce or minimize damages	
Basic Policy ②: Support for local community & society	Support Plan			Start support activities	Prompt recovery
Basic Policy ③: Business recovery	Business Continuity Plan				Start provision of products and services

What is your top priority?
If you do not want to lose it, do not fail to be ready all the time. This is beginning of ECP.



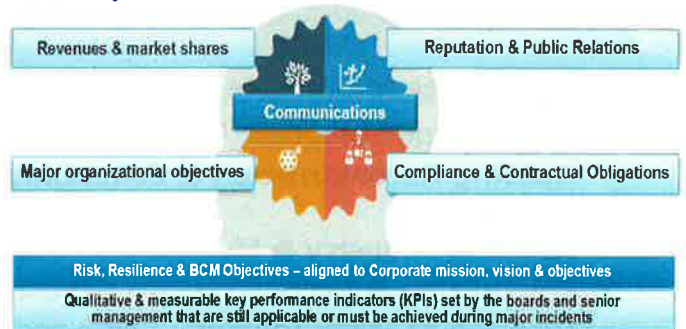
Mr. Lim Sek Seong,

BCM Service Leader - ASIA, Marsh Risk Consulting, Singapore

Business continuity management (BCM) & resilience maturity framework

- Methods and tools for strengthening resilience
 - ✓ Self-assessment checklist
 - ✓ Business impact analysis
 - ✓ Identifying objectives
 - ✓ Response plans and strategies

Summary



Keynote Speech: APEC Disaster Risk Reduction Framework



Undersecretary Ferdinand Cui Jr.,

Deputy Head, the Philippines' Presidential Management Staff

Supply chains can be resilient only if each link is resilient.

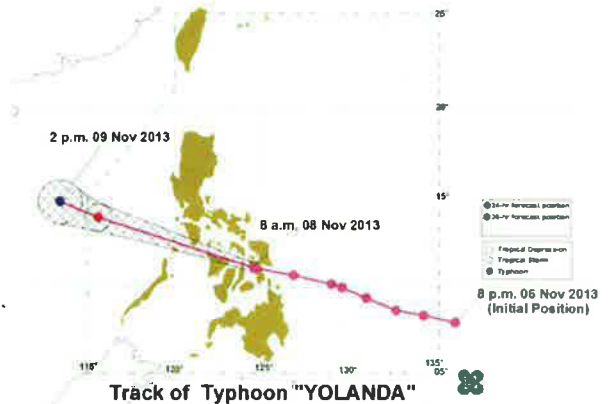
Outline

- The context of "New Normal"
- The APEC Disaster Risk Reduction Framework (ADRRF)
- Philippine Government efforts to enhance supply chain resilience
- Lessons learned from the super typhoon Haiyan experience

Key Messages

- Critical need for horizontal and vertical collaboration in planning, budgeting, implementing, and conducting monitoring and evaluation together toward key resiliency outcomes
 - Within economies: across gov't agencies, between national and local gov'ts, and among public and private stakeholders; and
 - Among economies: Whole-of-APEC Approach
- Resilient people and resilient communities make resilient businesses and GVCs

APEC DISASTER RISK REDUCTION FRAMEWORK



17

Session 3: Roles and initiatives of public sectors (1)

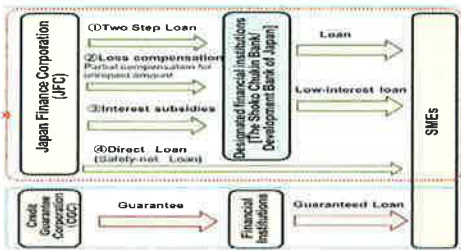


Mr. Mitsuhiro Nishida,

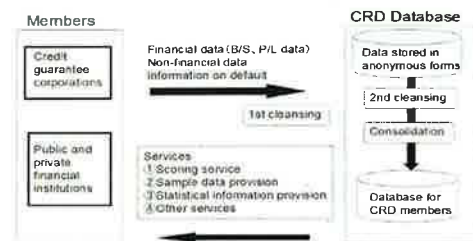
Deputy Director, Finance Division, Small and Medium Enterprise Agency, METI, Japan

Mitigating the impact of supply chain disconnection and financial crises on SMEs

Safety net by Loan and Credit Guarantee Scheme



Credit Risk Database (CRD)



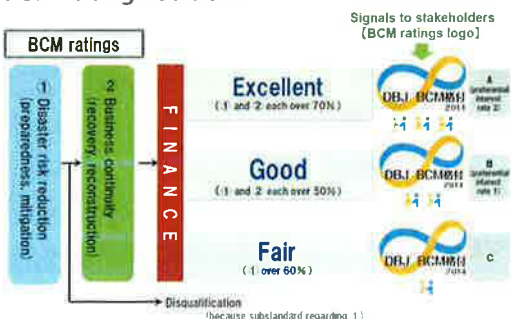
Role for financial sector to building resilient economy



Mr. Yoshiki Hiruma,

Director DBJ BCM rating, Development Bank of Japan Inc.

BCM ratings solution



Cooperation with other agencies



18

Session 3: Roles and initiatives of public sectors (1)



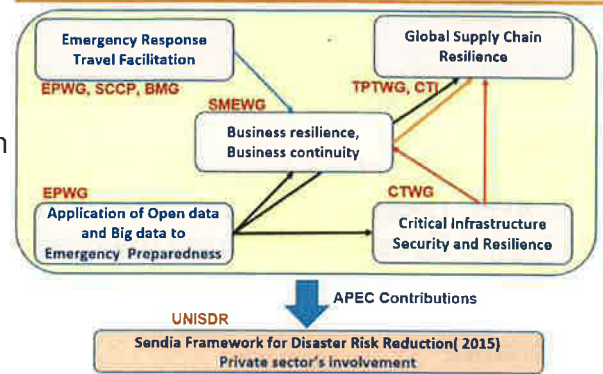
Dr. Li Wei-Sen,
Former Co-Chair, APEC EPWG
Secretary General, National Science and Technology
Center for Disaster Reduction, Chinese Taipei

APEC cross-fora efforts on improving business resilience and supporting SMEs

Conclusion

- "Global" is the new local in view of global supply chain
- Orchestrating a turnaround in policy and practices
- Taking advantages of cloud computing
- Incentivizing MSMEs to follow BCM and adaptable strategies
- Standardizing BCP with strategy difference
- Sharing and applying big data plus value-added information

Further comprehensive collaboration on business resilience through regional synergy



Building up resilience for ICT industry in Chinese Taipei through scientific evidences

- A pilot project - risk management based on S&T for ICT industry



- Part 1: On-site measurements**
 - Build up a network of sensors
 - Collect basic data
 - Deliver scenarios
 - Estimate potential risk
- Part 2: Capacity evaluation**
 - Build up numerical models of IC Feb
 - Conduct vulnerability analysis
 - Identify approach to retrofit approach
 - Verify effectiveness of retrofit devices
- Part 3: Risk management and BCP**
 - Conduct impact analysis
 - Develop principle of BCM
 - Propose recommendations on seismic risk
 - Build up knowledge of disaster risk management

Session 3: Roles and initiatives of public sectors (1)



Ms. Kyoko Kondo,
Executive Director, Asian
Disaster Reduction Center
(ADRC)/ APEC EPWG Co-
chair

About ADRC

ADRC, established in Hyogo in 1998, has been working together with 30 member countries for DRR information sharing, human resources development and diverse issues facing Asia.

GLIDE : An effective information sharing tool facing mega disasters
Case of the Indian Ocean Tsunami, 2004



GLIDE number could help identify a mega disaster affecting many economies.



APEC bringing together both sides of the Pacific is one of the best forums to address the risks of Tsunami.



Dr. Venkatachalam Anbumozhi,
Senior Economist at the Economic Research
Institute for ASEAN and East Asia (ERIA)

Strengthening GVC Resilience against Disasters by Governments and IOs

- Recognize the connection between GVC disruption by the risk from natural disasters and economic damages
- Preparedness to ensure GVC management (e.g. ex ante risk financing)
- Raise awareness of BCPs
- Regional cooperation to evaluate GVC risk and risk finance model
- Knowledge support to resilient GVCs need to be consolidated

Current International Cooperation Framework for Disaster Risk management in SEA





Ms. Sayaka Terai,
Assistant Manager, Regional Development
Division, Tokyo Chamber of Commerce and
Industry (TCCI)

Disaster Prevention Approaches

Major contents:

- Cooperation in Stranded Citizens Countermeasures
- Strengthen businesses' disaster preparedness
- Apply more technologies of SME in disaster prevention fields

BCP Formulation Support Seminar



BCP Formulation Support Guides (Free downloads available on TCCI Website)
<http://www.tokyo-cci.or.jp/survey/bcp/>



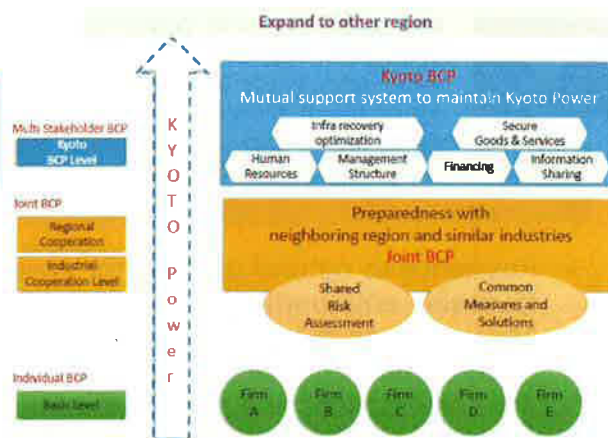
- ⇒ Developing minds for BCP formulation
- ⇒ 8 strategies for SMEs to formulate BCP



Mr. Takahiro Ono,
Manager of Risk Consulting Office, Mitsubishi
Corporation Insurance Co., Ltd.

Public-Private Partnerships for resilient and sustainable civil society
Mutual support system maintain KYOTO Power

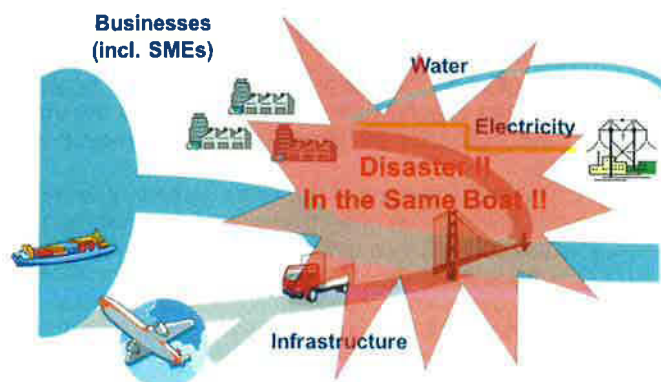
- Secure employment and support local economies by private sector in ordinary time and disaster, emergency time:
- "KYOTO BCP Initiative" a multi-stakeholder framework based on BCP principle to protect community, employment and economic activities to maintain and improve the "Power of Kyoto"



Dr. Masakazu Takahashi,
Disaster Management Specialist, Former Advisor
of OYO International Corporation

Introduction of Area Business Continuity Management (Area BCM)

- Area BCM is a **cooperative approach** by all the stakeholders to improve capacity for continuity and/or early recovery of businesses in an area in the case of an emergency such as natural disasters that affect the entire area.
- Concept and procedures of Area BCM were developed through **pilot projects** in Indonesia, the Philippines and Vietnam.
- **Sharing information** among the stakeholders, **risk-informed decision making** and importance of **public sectors** are keys for Area BCM.
- Area BCM is a useful tool to strengthen resilience of businesses of an area as a whole through strengthening individual businesses in the area, including **SMEs**.





Mr. Swatteuk Somneuk
Senior Expert, National Disaster Warning Center,
Thailand

<The case of Thailand> National Disaster Warning Center (NDWC)

- Acknowledge people in risk area about Early Warning System in the area.
- Set up community action plan to response to disaster.
- Pass on knowledge concerning natural disasters to the youth and NDWC's Network



Mr. Anh Duong Nguyen
Deputy Director, Department for Macroeconomic Policy and Integration Studies Central Institute for Economic Management Ministry of Planning and Investment, Vietnam

<The case of Vietnam> The issues of GVC participation and implication

- Resilience to natural disaster for ensuring a favorable environment
- Major change in legal approach to prevent and mitigate natural disaster from ex post relief to ex ante assessment and preparedness

Implication

- Allocation of resources balancing ex ante prevention and ex post relief
- Building capacity for enhancing resilience
- Explicit role for SMEs and value chains in current policy substances for disaster prevention and mitigation



Ms. Viviana Araneda,
General Directorate for International Economic Relations, Chile

<The case of Chile> The potential problems in GVC

Earthquake and Tsunami (February, 2010): Immediate Economic Impacts

- Only 45 % of companies operated normally
- Problems of basic supplies of electricity, water, gas, fuel and raw materials
- The country's infrastructure in the central area was seriously damaged
- 12.5 % of the stored wine has were lost (400 million dollars)

Earthquake and Tsunami (February, 2010): Economic Resilience

- Chilean exports had sharply declined in the immediate wake.
- One year after the disaster, the Chilean economy was growing at 6%
- The management of the crisis gained international recognition: Chile was made a permanent member of the OECD in 2010.
- Chile already has different mechanisms of risk management of natural hazards.

Issues

- export **product concentration** is high (in particular outside of the region) and export sophistication low
- export **country concentration** is also high and its sophistication low
- domestic and foreign investors are also relatively **concentrated in mining**
- Engage relatively little in **innovation-intensive activities** in other sectors
- this **exposes the economy to commodity cycles**

Field Trip in the Tohoku Region (North-East Region)



Mr. Keiichi Iwase
 Director General for Economic Policy
 Department, Tohoku Bureau of
 Economy, Trade and Industry



Efforts towards industrial revitalization ; Strengthen regional competitiveness

- Promote utilization of local resources in the Tohoku Region
- Encourage cooperation to disseminate the "Tohoku" brand as a whole
- Enhance competitiveness of regional manufacturing industries

Promotion Video

"TREASURELAND TOHOKU JAPAN"



RISING TOHOKU FOOD FAIR in TORRANCE



Training for acquisition of high-functional unit technology



Development of head-up displays



Aiming at becoming the world's center of excellence in organic electronics

Field Trip in the Tohoku Region (North-East Region)



Prof. Hiroaki Maruya, Ph.D.
 International Research Institute of Disaster
 Science (IRIDeS), Tohoku University

Disaster prevention policy by government, Business Continuity Management (BCM) by private companies, and cooperation with them

- Disaster response and business continuity of **public and private organizations** are **mutually interdependent**. Linkage and cooperation are necessary.
- Individual company and public organization should improve business continuity ability by making use of **substitute strategy** which is main strategy of BCM.
- **Mutual support agreement** at a time of disaster with another company **in the same industry** at some distant seems to be very effective.
- **Exercise and drill** are necessary to improve business continuity ability.



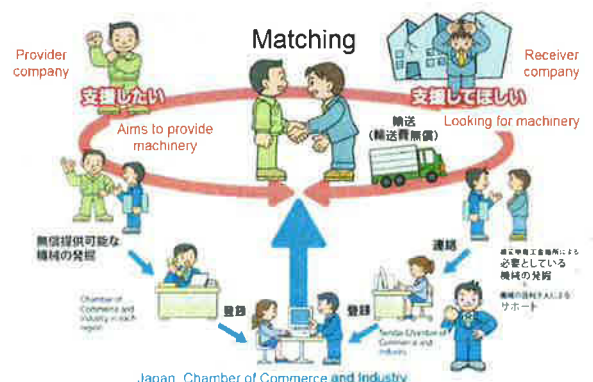
Mr. Mitsuaki Sato,
 Sendai Chamber of Commerce and
 Industry

Assistance for private companies by using nationwide network

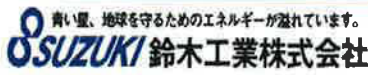
Business achievements

- Number of cases where matching has been established: 3,266 cases (Current as of December 2015)
- Number of companies which provided machines: 448 companies (83 Chambers of Commerce and Industry)
- Number of companies which received machinery: 323 companies (10 Chambers of Commerce and Industry)

Project to Assist in the Pairing of Idle Machinery with Companies Free of Charge



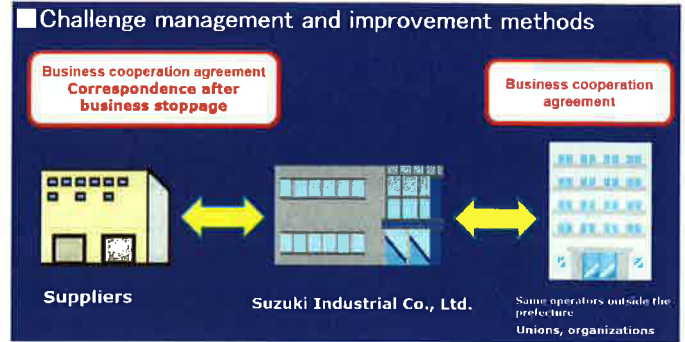
Field Trip in the Tohoku Region (North-East Region)



Company Visit
Suzuki Kogyo Co. Ltd.

Initiative by private company : Recovery and reconstruction from the Great East Japan Earthquake, and future efforts ①

- Provision for natural disaster based on BCP
- Make business cooperation agreement with supplier.



Company Visit
Ishinomaki Mill, Nippon Paper Industries Co., Ltd.

Initiative by private company : Recovery and reconstruction from the Great East Japan Earthquake, and future efforts ②

- Progress of Recovery - Ishinomaki Mill



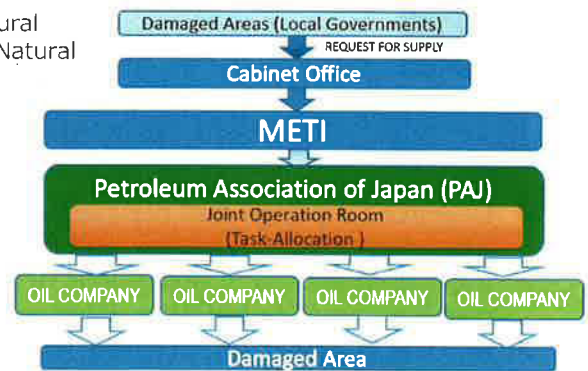
Session 6 : Roles and initiatives by public sectors (3)



Mr. Daisuke Asano,
Deputy Director, Policy Planning Division, Natural Resources and Fuel Department, Agency for Natural Resources and Energy, METI, Japan

Initiative by government ; "Critical Infrastructures" in terms of emergency oil supply.

- Based on reflection on 3. 11, METI rates BCPs of oil companies and reflects this rating to subsidy allocation.
- Add "Anti-Trust exemption clause" for **inter companies joint operation in emergency cases.**
- Establish **the Inter-Ministry cooperation.**



Dr. Yuki Matsuoka, Ph.D.
Head / Senior Programme Officer, UNISDR Office in Japan

Sendai Framework for DRR and Expectations to Private Sector

- Aims for disaster risk reduction 2015-2030
- Emphasizes the shift from considering stakeholders as victims and vulnerable to **agents of change and focus on empowerment and inclusion.**
- Business, professional associations & private sector financial institutions are expected to integrate disaster risk management into business models and practices via disaster risk-informed investments.



Session 6 : Roles and initiatives by public sectors (3)



Mr. Akira Doi,
General Manager External Affairs, Kokusai Kogyo Co., Ltd. Secretary General, Japan Bosai Platform

Collaboration between public sector and private company

- Make public report about good practices in DRR **by collaborating with UNISDR Japan.**
- It has user friendly, illustrative contents.
- It introduces **5 messages(right) from good practices.**

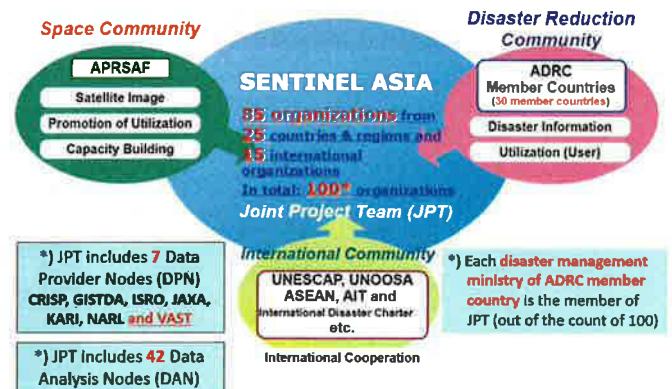
- 1 "Invest in DRR by upgrading your everyday equipment to a disaster resilient model"
- 2 "Consider multiple measures that foster redundancy in the event of a disaster"
- 3 "Why not secure professional support and contributions in advance?"
- 4 "Experts are invaluable in ensuring success in the last mile"
- 5 "Fostering partnerships with the private sector has shared value"



Mr. Michio Ito,
Senior Engineer, Satellite Applications and Operation Center (SAOC), Japan Aerospace Exploration Agency (JAXA), Japan

Collaborative initiative by utilizing space technology.

- Sentinel Asia is a voluntary initiative by a **collaboration** between space agencies and disaster management agencies, applying remote sensing and Web-GIS technologies **to assist disaster management in the Asia-Pacific region.**



4. Implications

Summary of this seminar <Introduction of three perspectives>

Enhancing Resilience of GVCs to Natural Disasters



30

By enhancing resilience of GVCs to natural disasters through Self-Help, Mutual-Help, and Public-Help. . .

- Promote GVCs participation of SMEs
- Improve investment environment
- Promote trade and investment in the Asia Pacific region
- Achieve the quality growth

