

# SUPPLY CHAIN CONNECTIVITY & DISASTERS RESILIENCE: ROLE OF REGIONAL INTEGRATION

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# Japan's Earthquake, Tsunami, Nuclear Explosion (March 2011)



# → Crippled SONY Warehouse



# Hurricane Katrina: Smashes the Gulf Coast (2005)



# New Orleans: Virtually Everything Destroyed



# Flood in Pakistan (2009)



# Heat Wave in Russia: August 2010



# Volcano Eruption in Iceland (2010.04)





# ...Driving through Ashes from Volcano Eruption...



# Winter Storms in Europe: 2009 & 2010



# ...Stuck at the Frankfurt Airport



# Private Sector : Key Factors of Supply Chain Vulnerability

- Globalization: → More complex, Longer Supply Chain
- Product Variant: Food, Mineral, Energy
- Outsourcing
- Reduction of Suppliers
- Focus on Efficiency: JIT
- Central Distribution
- Central Production

# Risk Measurement & Challenges

- **Risk = Probability of Occurrence x Level of Impact**
- **Challenges:**
  - ▣ How to minimize probability of Occurrence ?
  - ▣ How to lower level of Negative Consequence ?

# Supply-Chain Risk Management

- Disaster Prevention or Mitigation
- Early Warning System
- Contingency Plan: Disaster Recovery, Safety of the employees, Retrieval of business back-up data, emergency communication, Relocation of business operation, sourcing of alternative suppliers.
- Adequate Insurance Program:

# Approaches to Risk Mitigation

- Cost Benefit Analysis : Single Sources vis-à-vis Multiple Sources:
  - ▣ Efficiency & Effectiveness: “We’re in the Same Boat !”
  - ▣ Propriety Knowledge & Technology in Design Stage;
  - ▣ Additional Sources may only provide single location risk mitigation & may add little disaster resilience
- Supplier Flexibility Agreement: Volume Increase of up to 25% in one week’s time, and 100% in 4 week’s time.
- Inventory Policies: Stockpiles, Replenishment Rules & Safety Stock or “Pooled Risks”

# Hard Infrastructure Building for Supply Chain Connectivity

- Right Amount: Capacity, Pricing, Maintenance
- Right Time: Opportunity, Interest Rates
- Right Type: Air, Sea, Land Connectivity
- Right Place:



# Soft Infrastructural Building for Supply Chain Connectivity

- Systems & IT:
  - ▣ Inadequate System,
  - ▣ Lack of Broad Penetration of IT
- Regulations & Licensing
  - ▣ Lack of Transparency & Predictability
  - ▣ Freedom to cross-border Logistics Operation
- Governance: Lack of Coordination
- Safety: Lack of Appropriate Technology & Regulations

# Public Private Partnership

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- Multi-Approach to Secure Regional Trade
- Develop Pilot Projects;
- Encourage harmonization & standardization;
- Establish Center of Excellence

# Taiwan's Contributions in APEC for Supply Chain Connectivity

- Emergency Preparedness
- APEC Center for Typhoon (ACT)
- APEC SME Crisis Management Center
- Cloud Computing for Value Chain
- APEC Food System;



**Thank You !**