

EST PLENARY SESSION 1
Safe, Climate Adaptive and Disaster
Resilient Transport in Asia
~How Can We Built Resilient Societies?~

November 18, 2015

9th EST Forum in Kathmandu

Yoshitaka Motoda

Professor, Iwate Prefectural University, Japan

To what extent resiliency has been an integral part of transport policies, plans, programs, budget, including transport infrastructure design and development in Asian countries and cities?

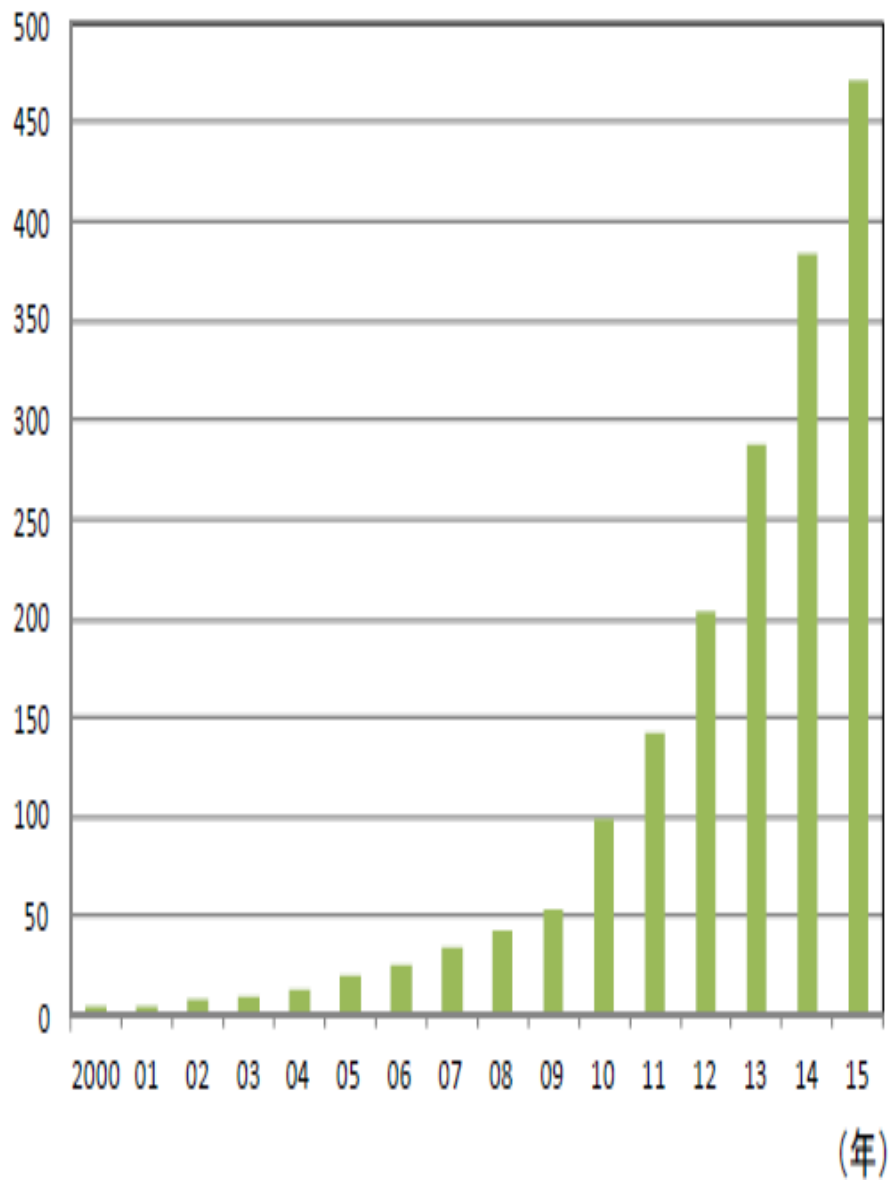
- Asian: Show case of disasters
- One of top priority in transport policy
- Strengthen infrastructure
 - ex: seismic strengthening for bridges
- Disaster mitigation plan and drills
 - earthquake, tsunami, flood, volcanic eruption, nuclear?
- Mitigation > Prevention

What transformative policies, institutions, programs in transport sector are necessary to put the countries and cities in the path of resiliency? (GHG)

- Reduction of vehicles with high GHG emission
- Fossil fuel engine → Hybrid / Electric / Fuel Cell
taxation, subsidy, deployment of electric fuel station
- Reduction of numbers of vehicles → Promotion of Public Transport

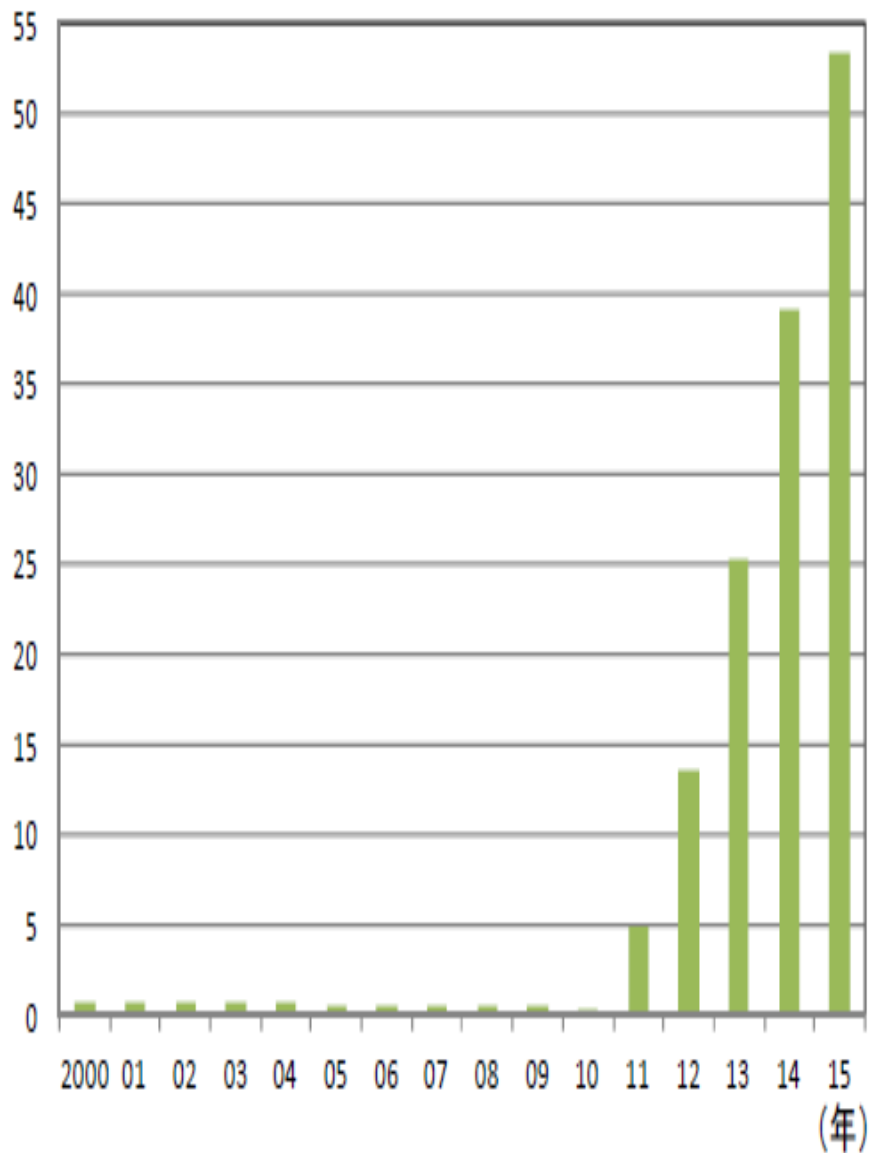
X10,000

Hybrid Vehicle



X1,000

Electric Vehicle



What integrated transport policy options and measures Asian countries and cities should consider in achieving better synergy in their efforts towards climate mitigation and adaptation, disaster risk reduction, road safety and improved air quality?

- Booming of PTW (Powered Two Wheeler) is great risk in Asian and Latin America
- Economic growth, Traffic congestion, Poor public transportation → Growth of PTW
- PTW: Vulnerable road user → Lot of fatalities
- No or very little Policy towards PTW
- Helmet, motorcycle dedicated lane, training, enforcement, regulations for motorcycle, mode shift to public transportation



Taipei city





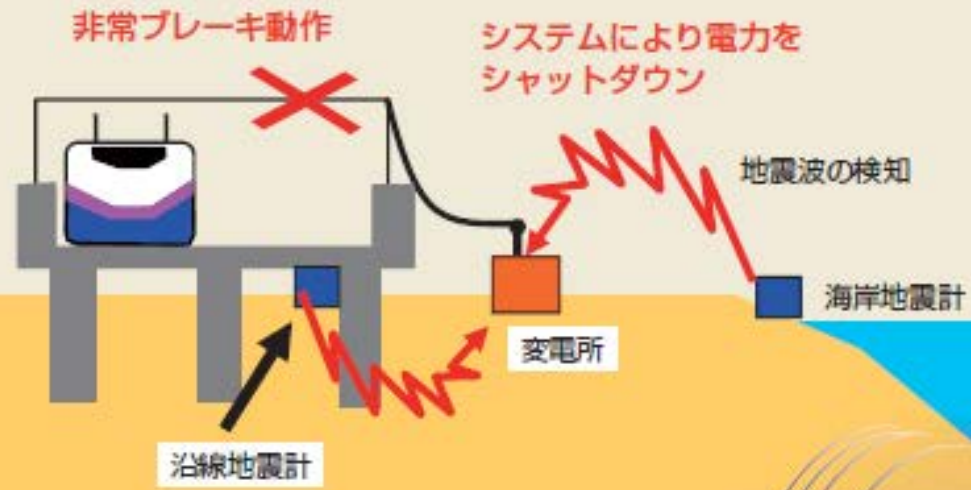
Regulation of motorcycle: ex. projected parts is dangerous to pedestrian

How adequately are critical transport facilities and infrastructure located in high risk or disaster prone areas to ensure efficient mobilization of humanitarian assistance and services?

- Complete prevention of disaster by infrastructure is unrealistic
- Assessment, Avoidance, Mitigation, Evacuation
- High speed train : Early seismic warning system
- BRT in Tsunami prone area : easy to evacuate at the event of tsunami



早期地震検知システムの概要



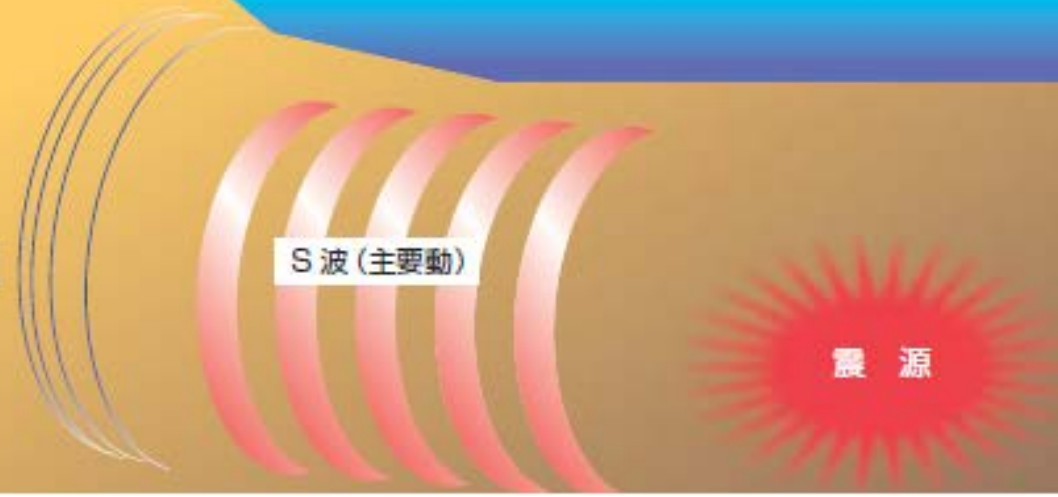
海岸地震計の設置

海岸の地震計により、地震波 (P 波・S 波) を検知し、沿線に地震が到達する前に、より早く非常ブレーキをかけるシステム

P 波 (初期微動)

S 波 (主要動)

震源





After Great East Japan Disaster in 2011, Shinkansen Stopped for 49 days mainly because of electric poll destruction (photo by JR east)



At Great East Japan Disaster in 2011, Rail road was washed away



After Great East Japan Disaster in 2011, Rail road was changed into Bus Rapid Transit System

What lessons do the recent disasters provides us in terms of resiliency through sustainable transport solutions?

- Preparedness is important

Great East Japan Disaster in 2011, recovery works went well due to resilient road infrastructure ← Seismic strengthening of bridges ← Lessons from Great Hanshin-Awaji Disaster in 1995

- Inheritance of disaster information to next generation is still difficult ← Long term period of disaster



Great Hanshin-Awaji Disaster in 1995 Photo by Ministry of Land Infrastructure and Transport