

Myanmar Action Plan

Technical Deep Dive on Seismic Risk and Resilience

March 12 – 16, 2018 Tokyo, Sendai, and Kobe











Regulatory

Building Code Building Act Subsidy Program Building Confirmation

Seismic

Vulnerability Map Macro Hazard Zoning Micro Seismic Geotechnical Zoning

Disaster Preparedness

Redundancy of Information Preparedness counter Measure Disaster waste management

Law Enforcement Building Capacity Implementation Mechanism Risk Score Risk &Cost Analysis Seismic Design J Alert & L Alert CSO Prevention Measure Prototype Buildings Awareness Program







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Myanmar Accomplishments Needed

Through our program, we are aiming to improve the resilience and safety of the built environment in Yangon.

What We Need to Do Now:

- Strengthen & Modernize the Building Regulatory Framework
 Build capacity of EDB to understand and address drivers of risk

 - Develop a regional-level approach for (i) rules and regulation and (ii) enforcement
- □ Ensure seismic resilience of critical public facilities
 - Retrofit critical buildings with high occupancy (e.g., markets, schools, hospitals)
 - Preserve and protect Cultural Heritage value
 - Assess vulnerability of critical lifelines (e.g., water supply network)

Related Next Steps Needed:

- Develop options for reducing the risk in the existing private building stock
- Develop a seismic vulnerability map & Risk and Cost Analysis







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Myanmar - Actions to be Taken

Engineering Department (Buildings) - EDB and the Yangon City Development Committee (YCDC) have a busy year ahead!

	Short (0-6 months)	Medium (7-12 months)	Long (12+ months)
Water Supply Network	Preliminary risk assessment of water supply network and water reservoir intake structure	Detailed risk assessment and design of retrofit of water supply system	Retrofit pumping stations, air compressor stations. and water supply infra
Building Infra	Building Regulatory Capacity Assessment	Detailed design of retrofit solutions for priority public facilities (e.g. markets) Deploy Database or other Software Solution to enhance permit review and enforcement (e.g., building database, plan archive)	 Retrofit priority public facilities (e.g. markets) Implement Action/ Investment plan to strengthen/modernize building regulatory framework Assessment of seismic vulnerability of residential and public buildings (collaboration with Myanmar Engineering Society – MES) Develop and pilot retrofit guidelines for existing unsafe apartment buildings





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Experience with Technology Implementation	 Working with Development Partners (DPs) to support, but still tough!
Financial Constraints	• Work with TA and Credit from World Bank and DPs
Limited HR and Capacity	Training and Capacity Development
Poor Regulatory Enforcement	To be enhanced by the Actions to be Taken (last slide) – Role Clarification
Poor Coordination (e.g., Gov, Education, NGOs, DPs)	and Empowerment
Lack of Experience with DPs	 That's why we're here!





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<u>The World Bank is supporting YCDC through the US\$117 million Myanmar</u> Southeast Asia DRM project and GFDRR/ DRM Hub is supporting with a Resilient Urban Infrastructure TA grant. More support will be needed to take on this challenge.

DRM Hub through this TDD:

 Enhance partnership with World Bank and JICA for future operations

 Connect/partner with Kobe City, Japanese ministries, and universities (e.g., Kyoto U, Kobe U, tech institutes) to train EDB staff on structural analysis, geo-seismic engineering, practical lessons on enforcement from Japan (e.g., Kenchikushi, confirmation vs. approval)

Knowledge Products:

Building Regulation:

- Sample TOR for base isolation
- Guidance/lessons from retrofitting incentive program in Kobe

Water Supply



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Thank You





