ISAP 2015: Resilient Cities

Discussion Points

Toshizo Maeda

Director, Regional Centre in Bangkok

IGES
Institute for Global Environmental Strategies

Frameworks for Disaster Risk Reduction (DRR)

Hyogo Framework for Action

2005-2015: Priorities for Action

1. Ensure that DRR is a national and a local priority with a strong **institutional** basis for implementation
2. Identify, **assess** and monitor **disaster risks** and enhance early warning
3. Use knowledge, innovation and **education** to build a culture of safety and resilience at all levels
4. **Reduce** the underlying **risk** factors
5. Strengthen disaster **preparedness** for effective response at all levels

Sendai Framework for Action

2015-2030: Priorities for Action

1. **Understanding disaster risk**
2. Strengthen disaster risk **governance** to manage disaster risk
3. **Investing in disaster risk reduction** for priority understanding disaster risk **resilience**
4. Enhancing disaster **preparedness** for effective response and to **<Build Back Better>** in recovery, rehabilitation and reconstruction

10 Essentials for Making Cities Resilient

1. Put in place **organisation and coordination** to understand and reduce disaster risks
2. **Assign a budget** for DRR
3. **Prepare risk assessments** and use these as the basis for urban development plans and decisions
4. Invest in and maintain **critical infrastructure** that reduces risk
5. Assess the safety of all schools and health facilities
6. Apply and enforce **realistic, risk compliant building regulations and land use planning principles**
7. Ensure that **education programmes and training** on DRR are in place in schools and local communities
8. **Protect ecosystems and natural buffers** to mitigate floods, storm surges and other hazards
9. Install early warning systems and emergency management capacities in your city
10. After any disaster, ensure the **needs of the affected population are placed at the centre of reconstruction**

Source: "How to Make Cities More Resilient: A handbook For Local Government Leaders", UNISDR, GFDRR

Typical Questions

- What are the main **risks**?
- What changed most **before and after** the disaster?
- What are the **traditional / local knowledge** related to past disasters? Do you have an institution / exhibitions to memorize that?
- What are the recommendable **public education** / awareness raising activities? Do you use hazard maps or any other tools? Do you any campaigns engaging the media?
- **Early warning system:** How much has it been established in your city? Do you have a GIS mapping / baseline analysis / monitoring system?
- **Land use plan, urban planning, building codes,** housing policies, neutral buffers: How these can be really changed / implemented?
- **Infrastructure needs:** What do you need most to reduce the disaster risks?
- What did you pick up from the **Kobe** study visit? Anything applicable?

Nonthaburi City: The Great Flood 2011

- Along Chao Phraya River (37km from the sea); **MSL +1.00-3.00m**; surrounded by canals (L=51.9km); 41 pumping stations (75m3/s)
- Road along the River: **MSL +2.75m** (> 2.70m: historical flood)
- Maximum flood level: **MSL +3.19m** (…raised the river dike to **MSL +3.50m for 26.7km length** (=11km+ 4km + 6km + 5.7km))
- **Piling 40,000 sand bags per day**; 1,000-2,000 volunteers for 45 days (need for water, lunch, dinner, late night meal)
- **Total 2 million sand bags**; 28,000m3 of sands; 1,600kg of waterproof plastic sheets; 5 backhoes, 37 trucks, 70 pumps … Costing THB 78m (purchased by cash only)
- Contribution from other municipalities, private companies, others
- **Protected 95% of the area (110,000 hhs);** 5% (5,000 hhs) were inundated; (but 40% of city officers were affected); 5 schools as temporal shelters; Relief aid THB 25,000/family (total THB 43m)

Nonthaburi City: The Great Flood 2011 (cont.)

- Urgent project to prevent from Chao Phraya River flooding: THB 3.4B (=JPY 12B) (study results by a consulting company)
  - Embankment of river banks and canals: THB 2.6B (=JPY 9.1B)
  - Improving pumping stations: THB 0.2B (=JPY 0.7B)
  - Constructing a drainage system: THB 0.6B (=JPY 2.1B)