

Study on how to build a disaster resilient city in Shanghai, China

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上海市——世界级现代城市 A large and modern city

Shanghai Brief Introduction



 Resident population

Urban Area



24.26 Million 3574person/km² (2014)





6,787 km²

Total: RMB ¥ 2.356 trillion yuan (around US\$380.02 billion) (2014) Per capita: RMB ¥ 97,131 (around US\$15,666)

• GDP

Shanghai Brief Introduction



 Buildings (over 8 storeys with ≥20m)

 Urban Metro Lines





36055Buildings about 34.7million m² (2013)

Total Length of Operation Lines 567km with ridership 2.5 billion. Maximum passengers per day: 10.286million (2014)









上海市——面对灾害挑战的城市 A **challenge** city with **multi-disasters**



Risk Analysis of Disaster in Shanghai

NATURAL DISASTER

GLOBAL CHANGE





Risk Analysis of Disaster in Shanghai



Typhoon Matsa, 2005



Gas Pipeline Explosion, 2010



Metro Construction Accident, 2009



High Building Fire , 2010



上海市——构建"弹性"的城市 How to build a **resilience** city

Some Measures to build a Resilient City

1. Put in place **organization and coordination** to understand and reduce disaster risk, based on participation of citizen groups and civil society. Build local alliances. Ensure that all departments understand their role in disaster risk reduction and preparedness.

2. Assign a full budget for disaster risk reduction and provide incentives for homeowners, low income families, communities, businesses and the public sector to invest in reducing the risks they face.

3. Maintain up to date data on hazards and vulnerabilities. **Prepare risk assessments** and use these as the basis for urban development plans and decisions, ensure that this information and the plans for your city's resilience are readily available to the public and fully discussed with them.





Some Measures to build a Resilient City

4. Invest in and maintain critical infrastructure that reduces risk, such as flood drainage, adjusted where needed to cope with climate change. Assess the safety of all schools and health facilities and upgrade these as necessary.
5. Apply and enforce realistic, risk compliant building regulations and land use planning principles. Identify safe land for low income citizens and upgrade informal settlements, wherever feasible.

6. Ensure that **education programmes and training** on disaster risk reduction are in place in schools and local communities.





Some Measures to build a Resilient City

7. Protect ecosystems and natural buffers to mitigate floods, storm surges and other hazards to which your city may be vulnerable. Adapt to climate change by building on good risk reduction practices.

8. Install early warning systems and emergency management capacities in your city and hold regular public preparedness drills.

9. After any disaster, ensure that the **needs of the affected population are placed at the center of reconstruction**, with support for them and their community organizations to design and help implement responses, including rebuilding homes and livelihoods.



Coming together is a beginning. Keeping together is progress. Working together is success. Henry Ford

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THANKS

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2015-7-29

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Shanghai Institute of Disaster

It was establishe **Prevention** In**and** a**Relief** ongji University and Shanghai Urban Construction and Communications Commission. It is the first professional research institution to carry out urban disaster prevention and relief, and provides the disaster risk consultations and decision-making for Shanghai Government. Its 14 branches are listed as follows:

- Disaster Management and Security Policy
- Urban Disaster Simulation and Mitigation and Reduction Research
- Seismic Resistance and Disaster Prevention
- Meteorological Disaster Prevention Research
- Fire Science and Fire Protection Engineering
- Fire Science and Fire Protection Engineering
- Disaster Prevention for Lifeline Engineering System
- Underground Space Safety and Geological Disaster Reduction
- Urban Water & Flood Prevention Engineering
- Traffic Safety
- Marine Disaster
- Construction Engineering Safety
- Public Health Security
- Risk and Insurance of Engineering Disaster

Website: http://www.idpr.sh.cn