

RESILIENCE OF SETTLEMENTS

Environmental, Economic and Social Aspects

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Definitions

- **Resilience**

“Capacity to recover continuity in the face of adversity”

- **Settlement**

“Geographical location with a human community”

Human settlements

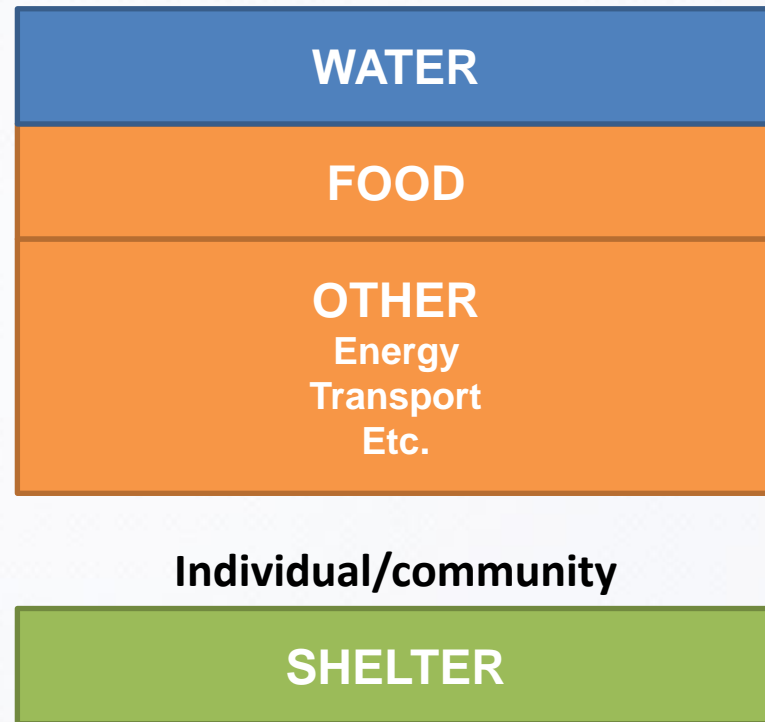
- **UN Sustainable Development Goal 11:
“Making Cities and Human Settlements
inclusive, safe, resilient and sustainable”**
(<http://unhabitat.org/>)
- **COMPLEXITY**

Human settlements - complexity

Early settlements
Individual/community

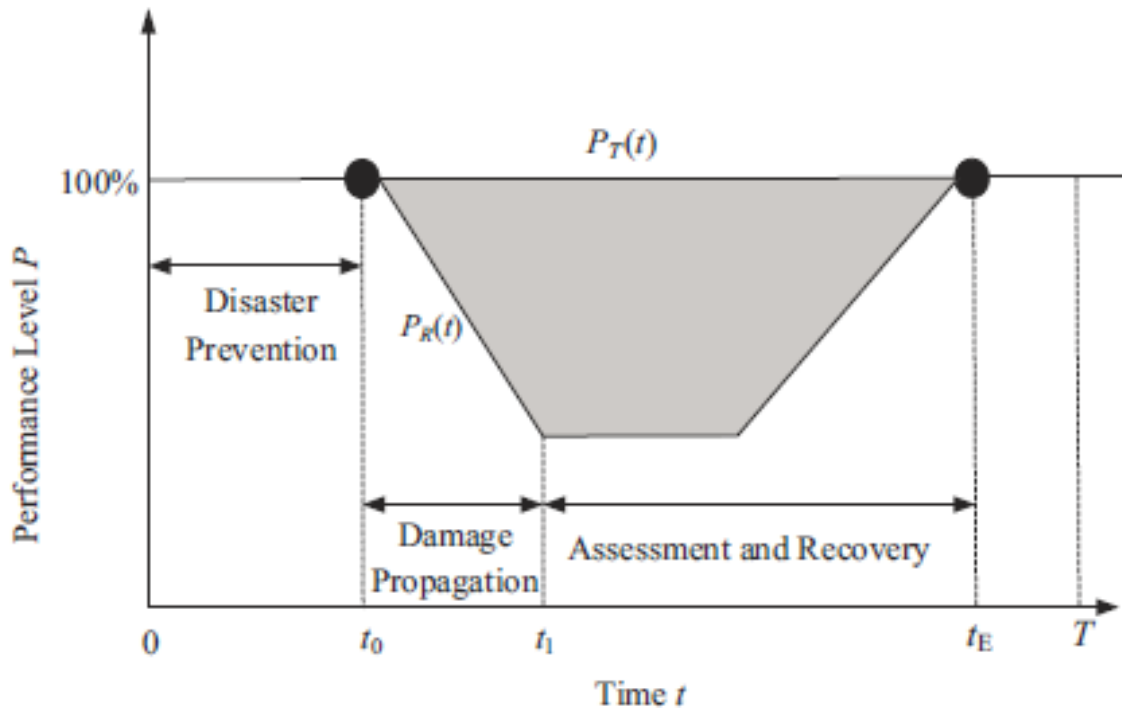


Modern settlements
(infrastructuring survivability)



Individual/community

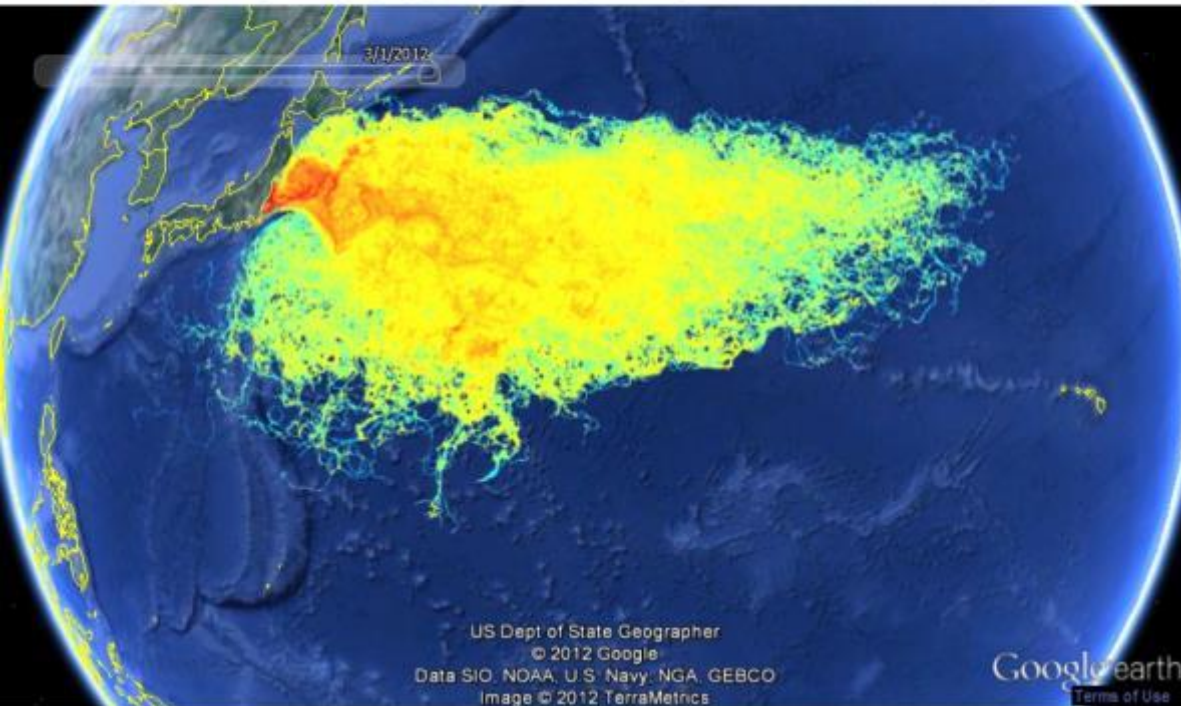
Human settlements - complexity



A three-stage resilience analysis framework for urban infrastructure systems
M Ouyang, L Dueñas-Osorio, X Min; *Structural safety*, 36, 23-31.

Environmental aspects

The Spread of Radiation in Pacific from Fukushima Nuclear Power Plant Three March 2012



Impact
Scale
Speed of recovery

Economic aspects



Courtesy of Holly Morris



Courtesy of municipality Logatec, Slovenia

Social aspects

- **Bronfenbrenner’s bioecological theory - NCCARF**
(chronosystem, microsystem, mesosystem and macrosystem)
- **“Information and Indicators Program for Disaster Risk Management” of the Inter American Development Bank (IDB) – System of Indicators for adaptive capacity**

C. Community microsystem	D. Community mesosystem	E. Exosystem	F. Macrosystem
Most affected areas (number and types): <ul style="list-style-type: none"> • Educational organisations (pre-during-post) • Health provision organisations (pre-during-post) • Parks, recreational and physical facilities (pre-during-post) • Religious organisations (pre-during-post) • Entertainment venues and facilities (pre-during-post) • Local government (pre-during-post) 	Most affected areas (number/membership/types): <ul style="list-style-type: none"> • Communication networks (pre-during-post) • Volunteer networks (pre-during-post) • Local transport facilities (pre-during-post) • Sporting and social networks (pre-during-post) • Disaster preparedness programmes/education (pre-during-post) 	Most affected areas (Funds and available services): <ul style="list-style-type: none"> • Social services • Insurance providers • Disaster relief funds • Energy and communication providers • Media • Charities • Adjunct disaster relief (e.g. armed forces) • State emergency services • Rail/air/sea transport services • Postal services 	Most affected areas (Response time and responsiveness) <ul style="list-style-type: none"> • Welfare system • Political will • Government responsiveness

“...individuals, households, organisations, communities and governments all interact in a systemic manner to support or impede resilience.”

(Recovery from disasters: Resilience, adaptability and perceptions of climate change, Final report, NCCARF & James Cook University, Australia)

Thank you

- **Get in touch**

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