



**REMTECH EXPO**

**GEOSSIMICA**



20 Settembre 2018

## **LIQUEFAZIONE E INSTABILITA' DINAMICA DEI TERRENI**

Valutazione del rischio e della resilienza di comunità e infrastrutture per disastri di liquefazione del suolo

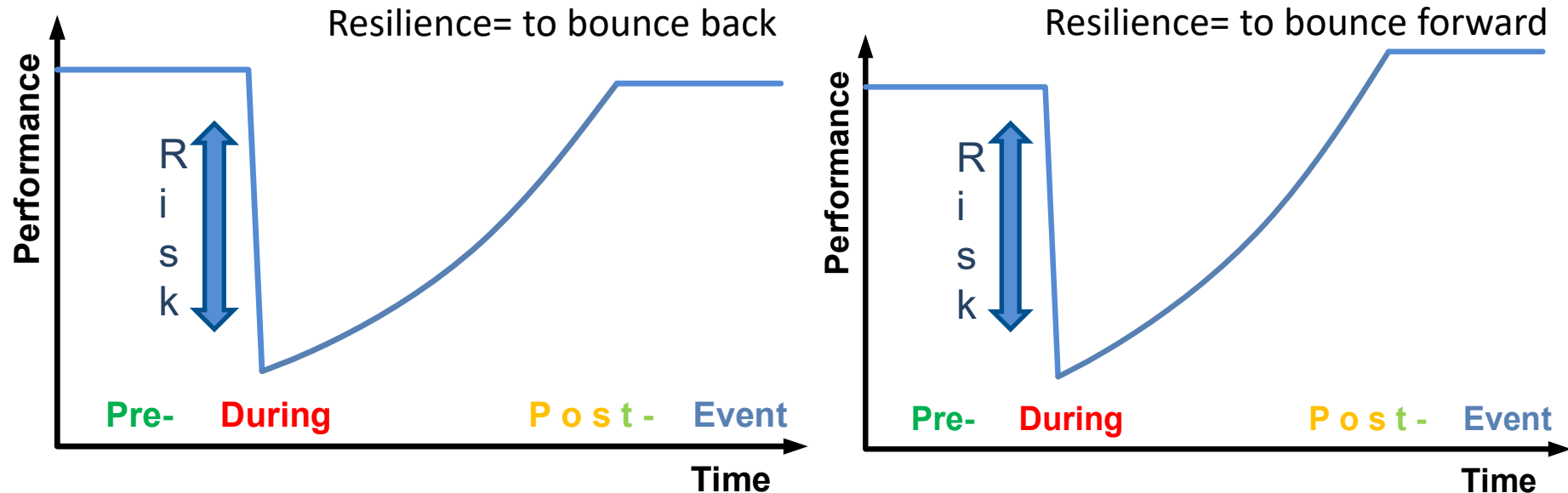
(Community and Infrastructures Risk and Resilience Assessment for Soil Liquefaction Disasters)

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# Resilienza e Rischio

## Resilience and Risk



- **Resilienza** e' la descrizione della **dinamica** di un **sistema** il cui normale funzionamento e' improvvisamente sconvolto da un evento disastroso

**Resilience** is the description of a system dynamic behaviour which normal performance is abruptly disrupted by a disaster

- Il **rischio** e' la descrizione della **perdita di funzionalita'** del sistema che, nel caso di liquefazione del suolo e' **istantanea**

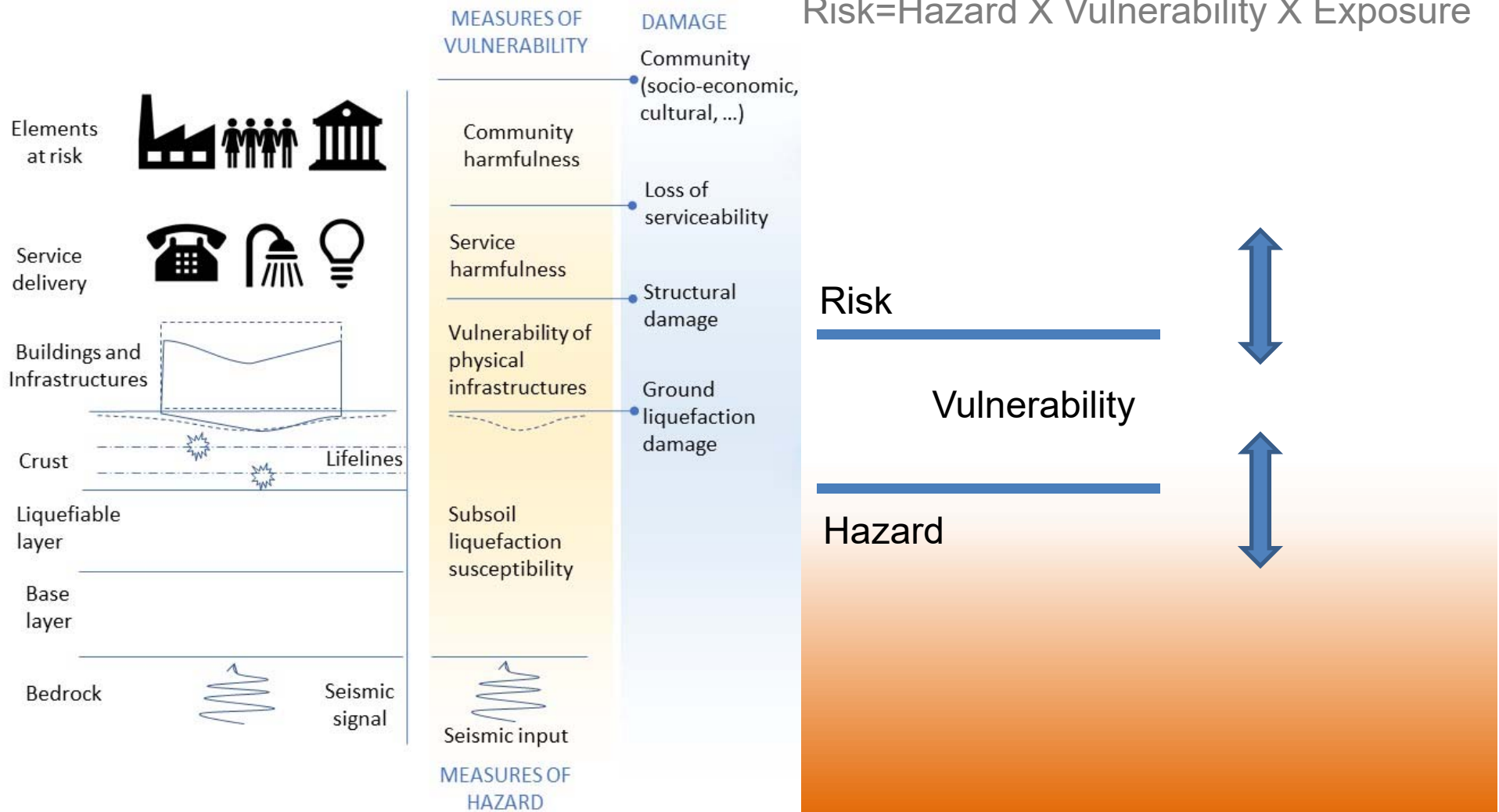
**Risk** is the description of the system **performance loss**, which in case of soil liquefaction is quite **instantaneous**

# Resilienza e Rischio di Eventi di Liquefazione del Suolo

## Resilience and Risk for Soil Liquefaction Events

Rischio=Pericolosità X Vulnerabilità X Esposizione

Risk=Hazard X Vulnerability X Exposure

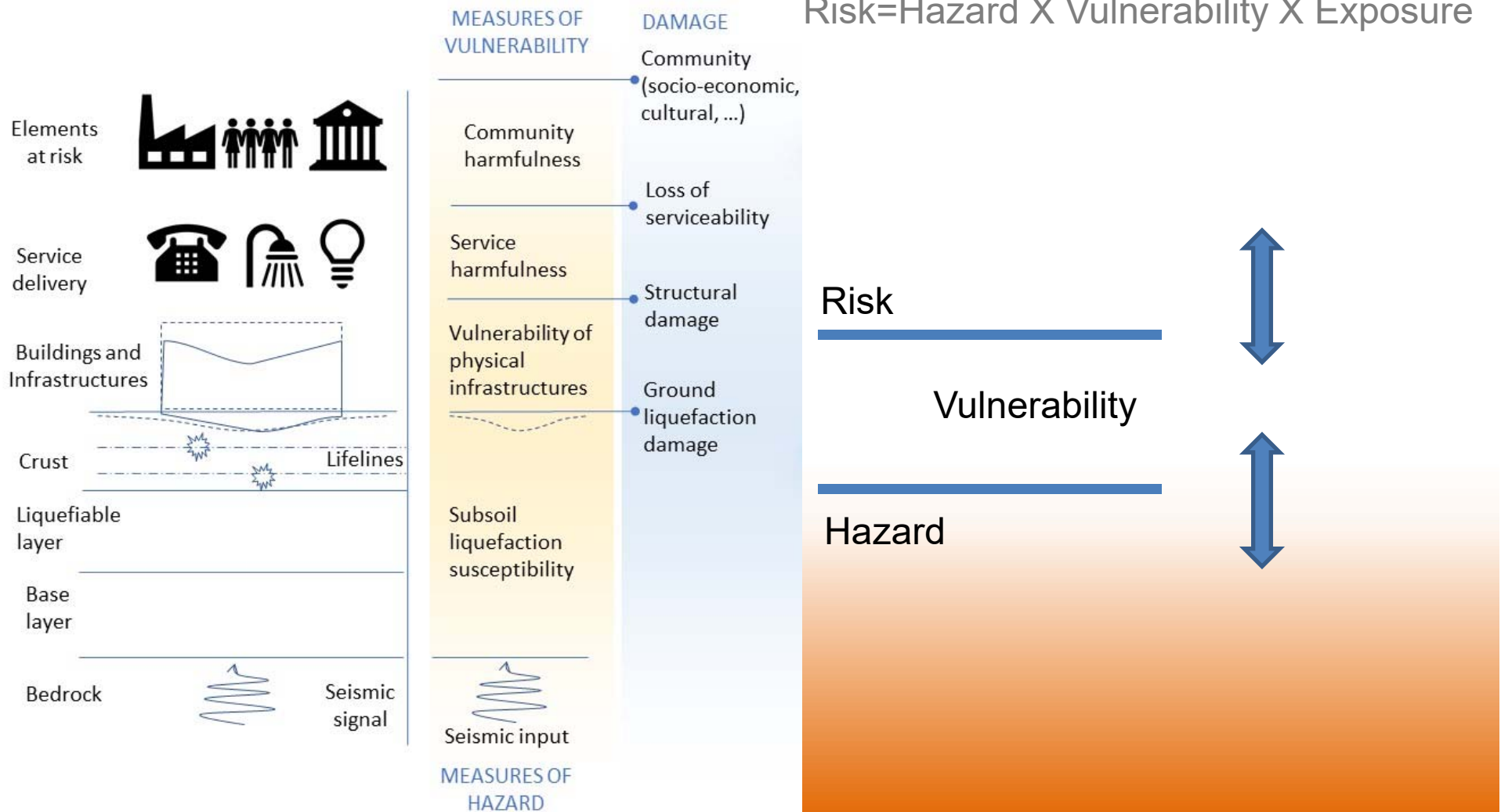


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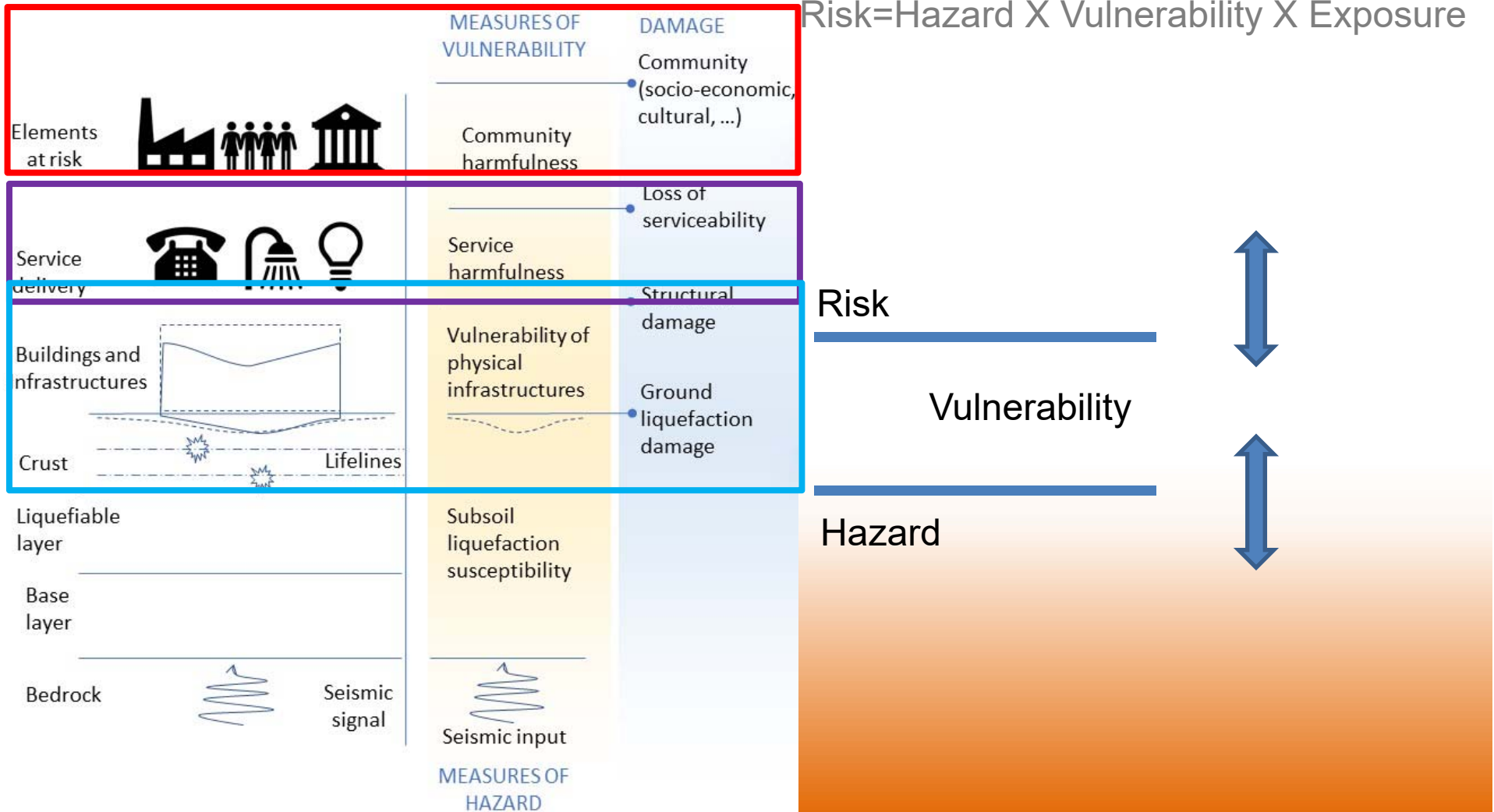


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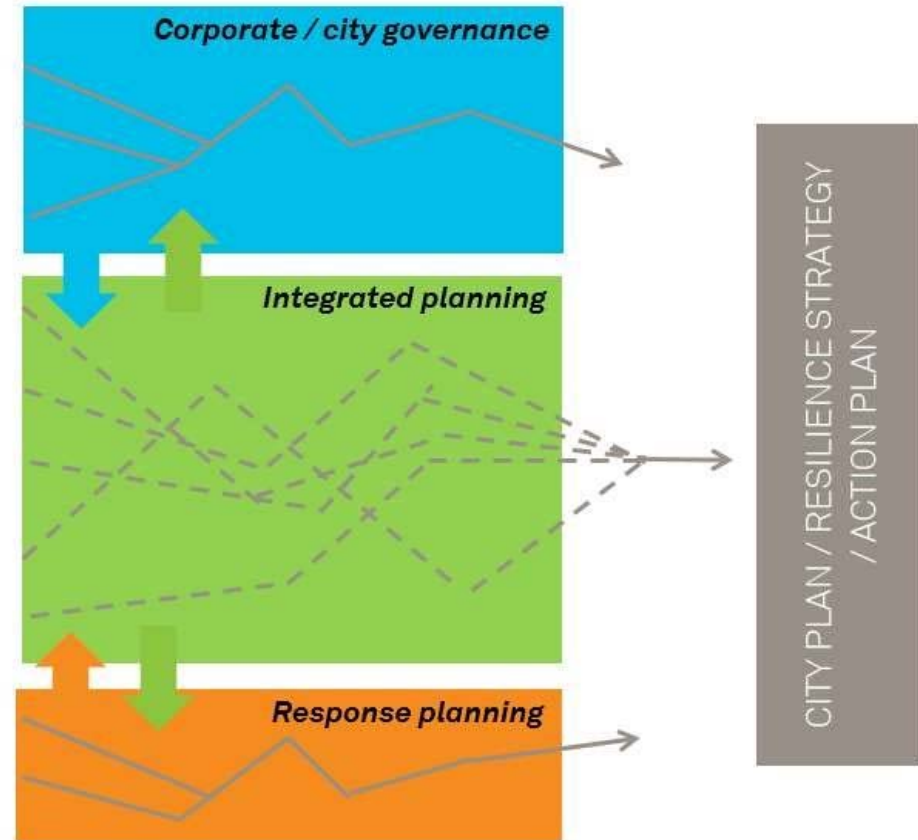
# UNISDR scorecard per citta' resilienti

## UNISDR scorecard for resilient cities

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### City Resilience Scorecard

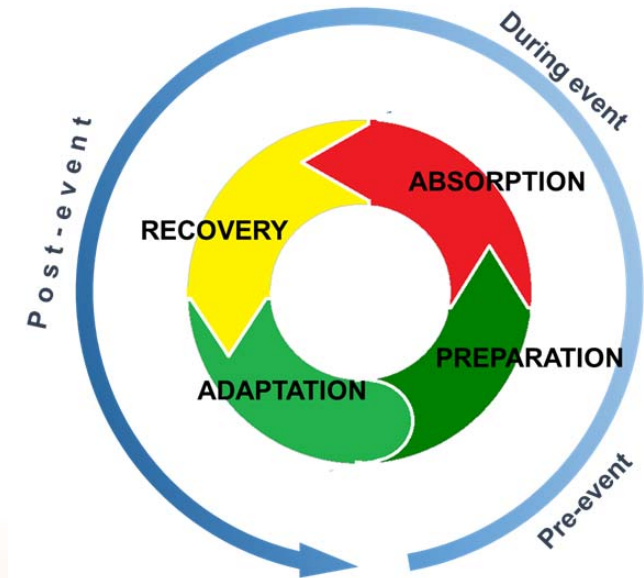
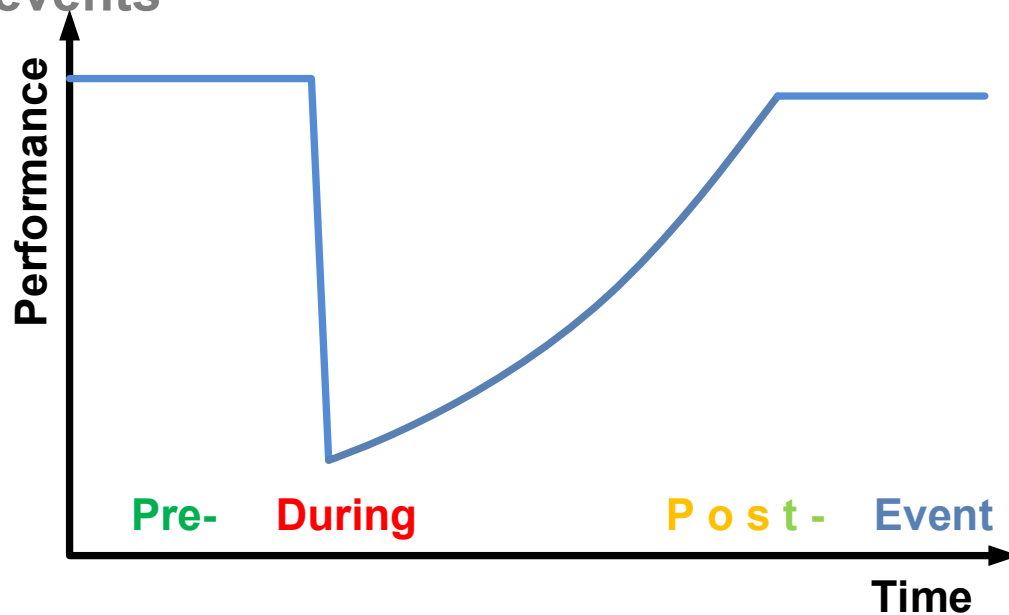
- 1 Organise for disaster resilience
- 2 Identify, understand and use current and future risk scenarios
- 3 Strengthen financial capacity for resilience
- 4 Pursue resilient urban development and design
- 5
- 6 Strengthen institutional capacity for resilience
- 7 Understand and strengthen societal capacity for resilience
- 8 Increase infrastructure resilience
- 9 Ensure effective disaster response
- 10 Expedite recovery and build back better





# Liquefact scorecard per infrastrutture resilienti a eventi di liquefazione del suolo

Liquefact scorecard for infrastructures resilient to soil liquefaction events

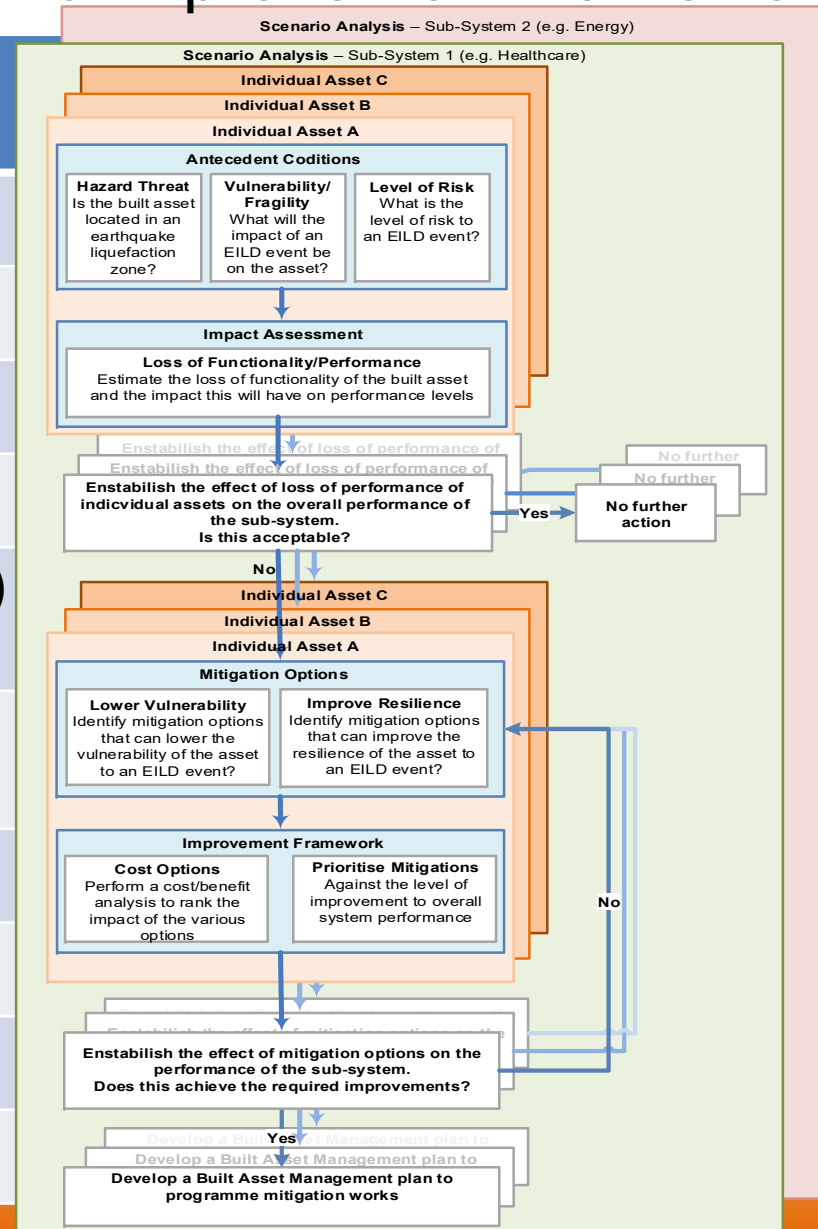






# RAIF: Resilience assessment and improvement framework

Step	Task
1	Establish hazard threat
2	Establish Vulnerability / Fragility
3	Assess level of risk
4	Estimate loss of functionality (asset)
5	Estimate loss of functionality (sub-system)
6	Identify mitigation options (vulnerability)
7	Identify mitigation options (resilience)
8	Cost options (Options Appraisal)
9	Prioritise options
10	Develop implementation plan





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