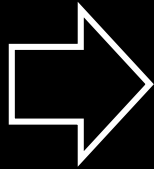


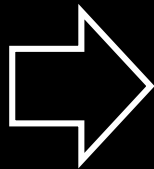
Risk analysis beyond insurance.
Where the disaster risk
technologies are taking us?

By Luis Ceferino

Risk
data



Risk
tools

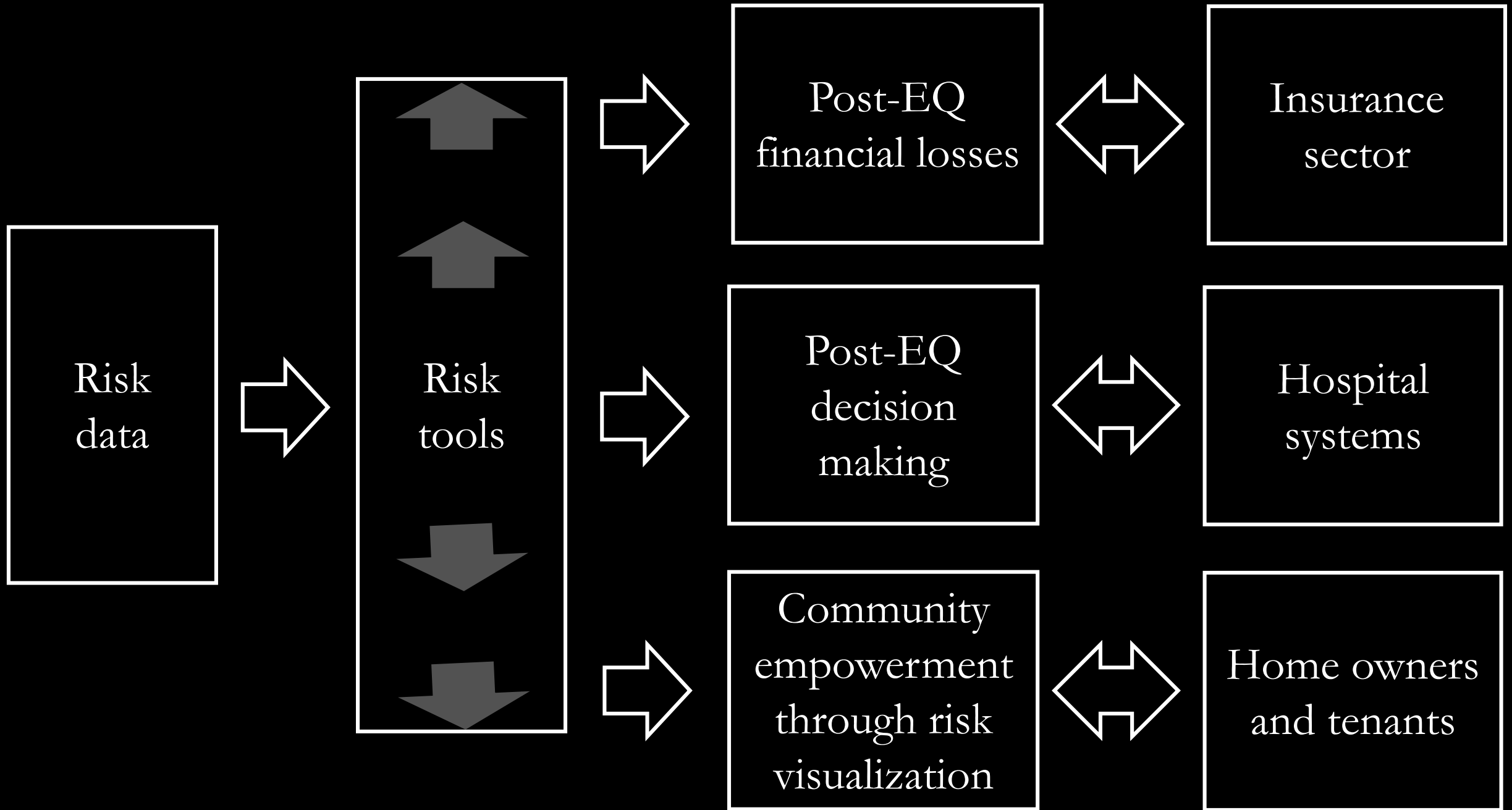


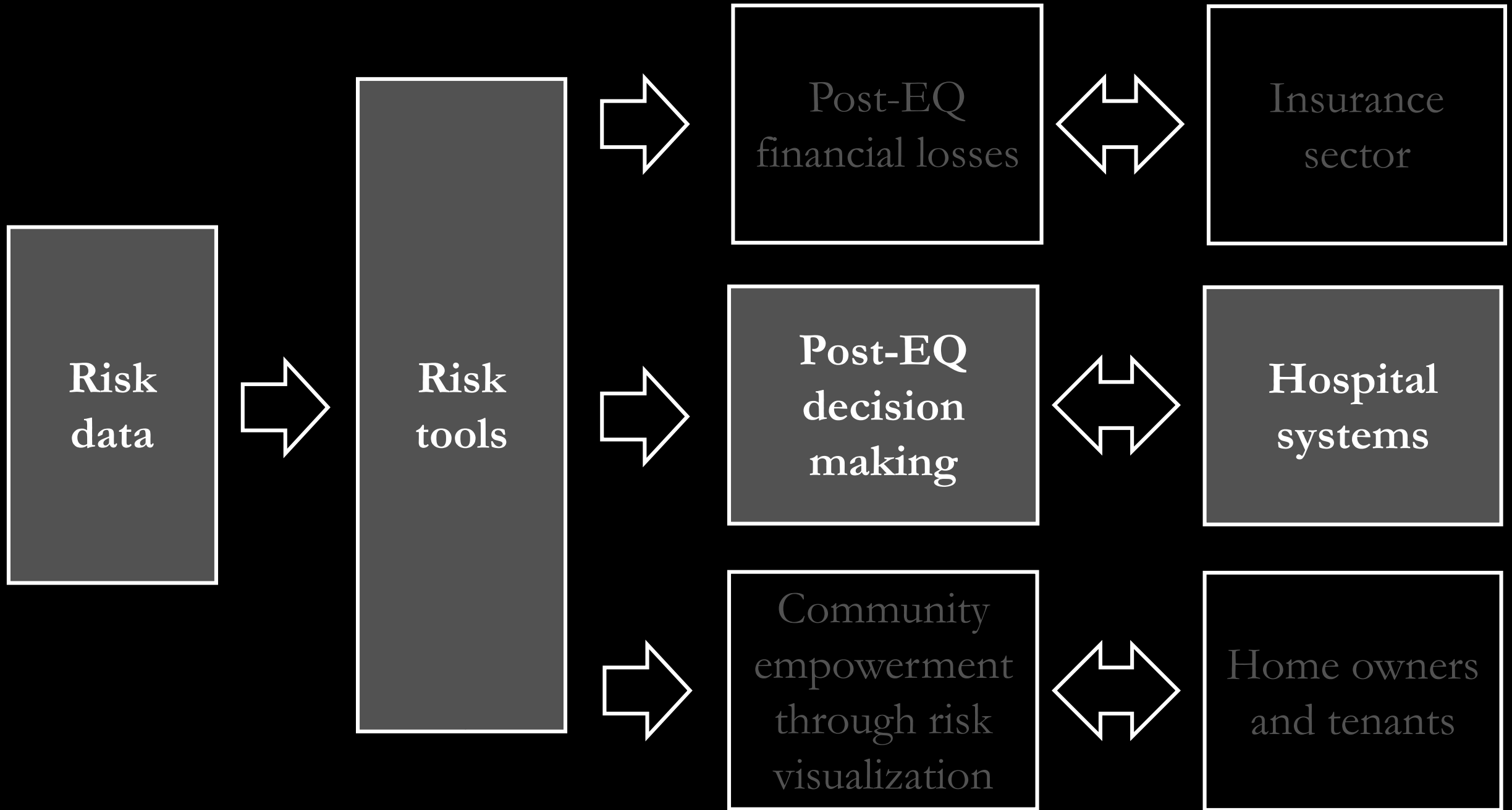
Post-EQ
financial losses



Insurance
sector

The new generation of risk tools.
How do they fit into the risk
workflow?





Risk data

Risk tools

Post-EQ financial losses

Insurance sector

Post-EQ decision making

Hospital systems

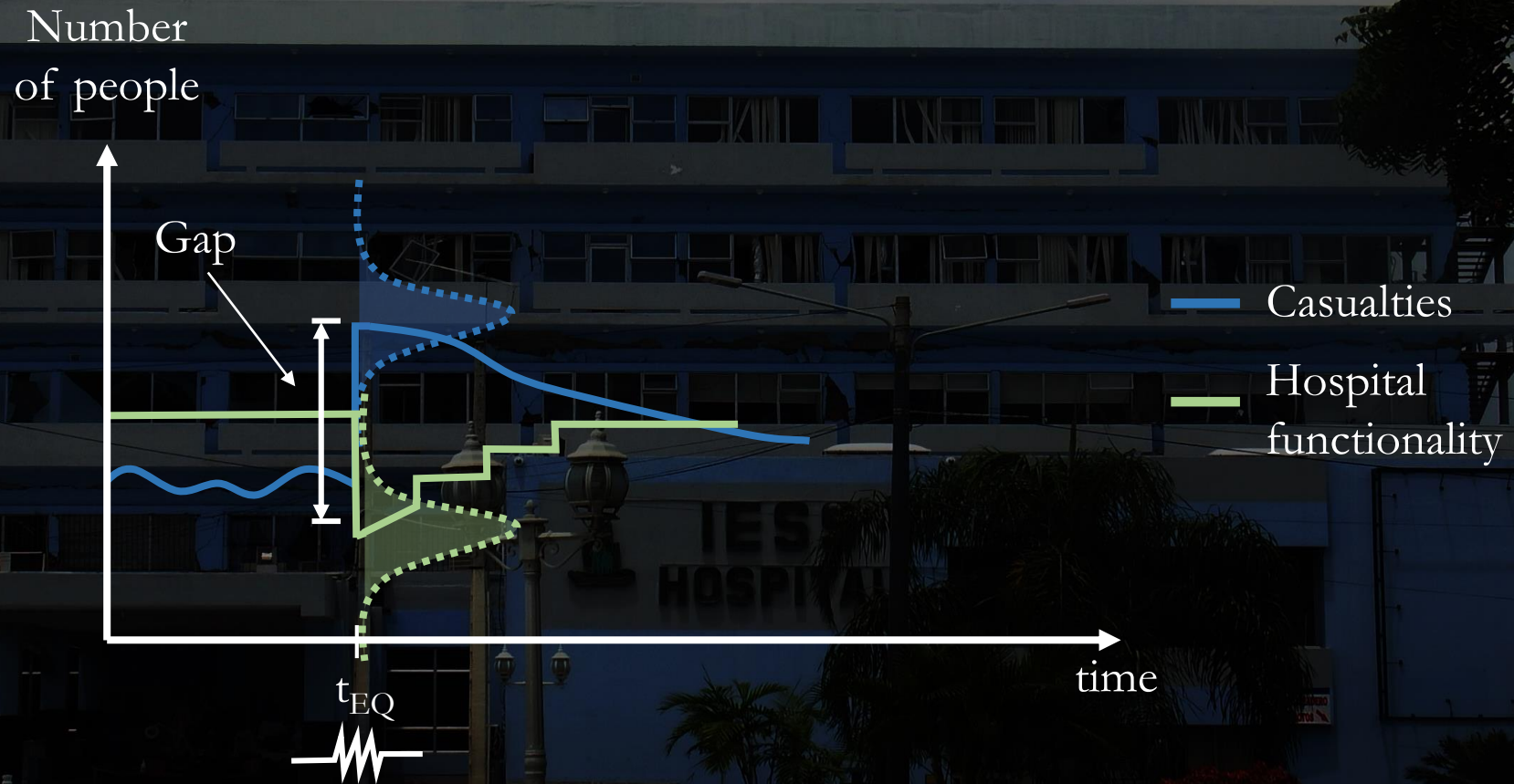
Community empowerment through risk visualization

Home owners and tenants

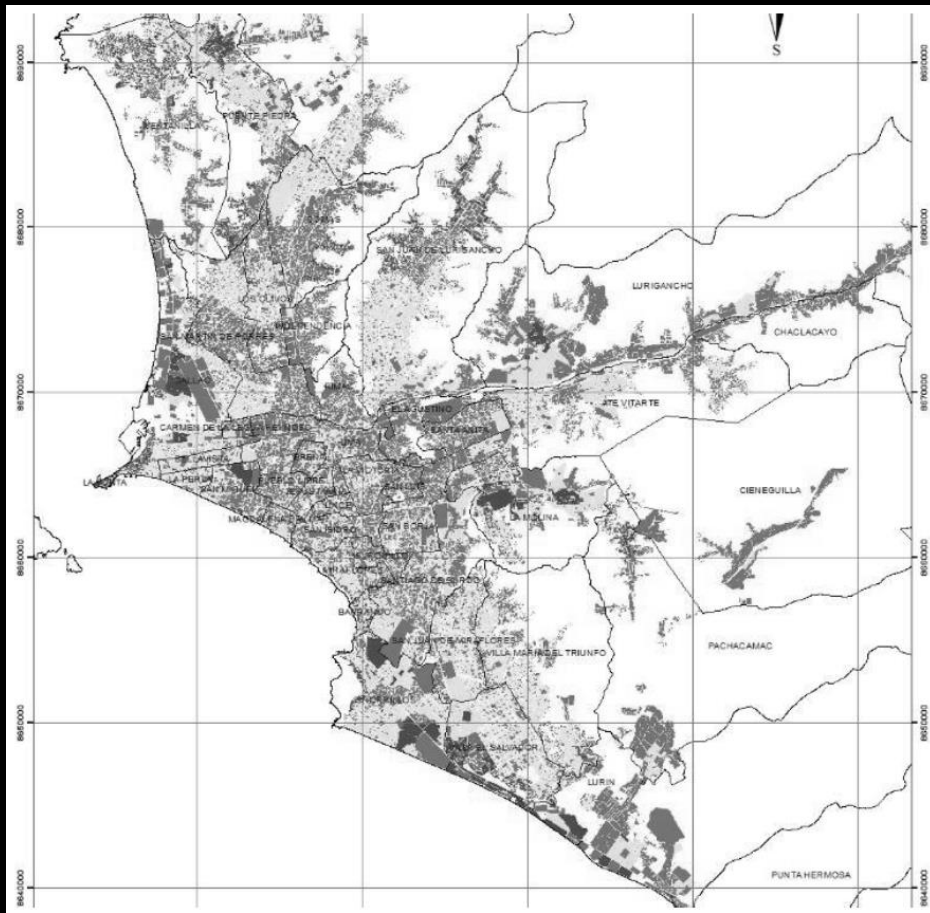
Post-earthquake decision making for hospital systems : Patient redistribution



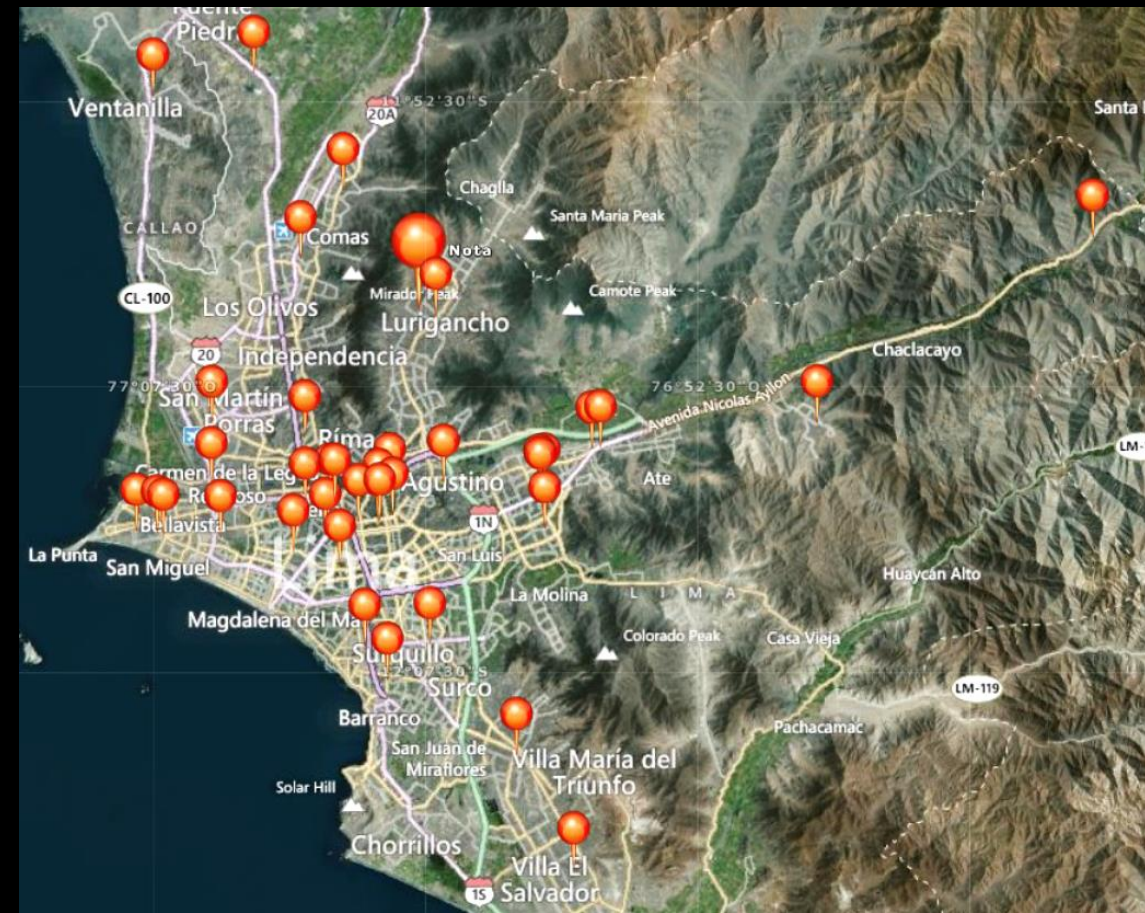
Post-earthquake decision making for hospital systems: Patient redistribution



Existing risk data

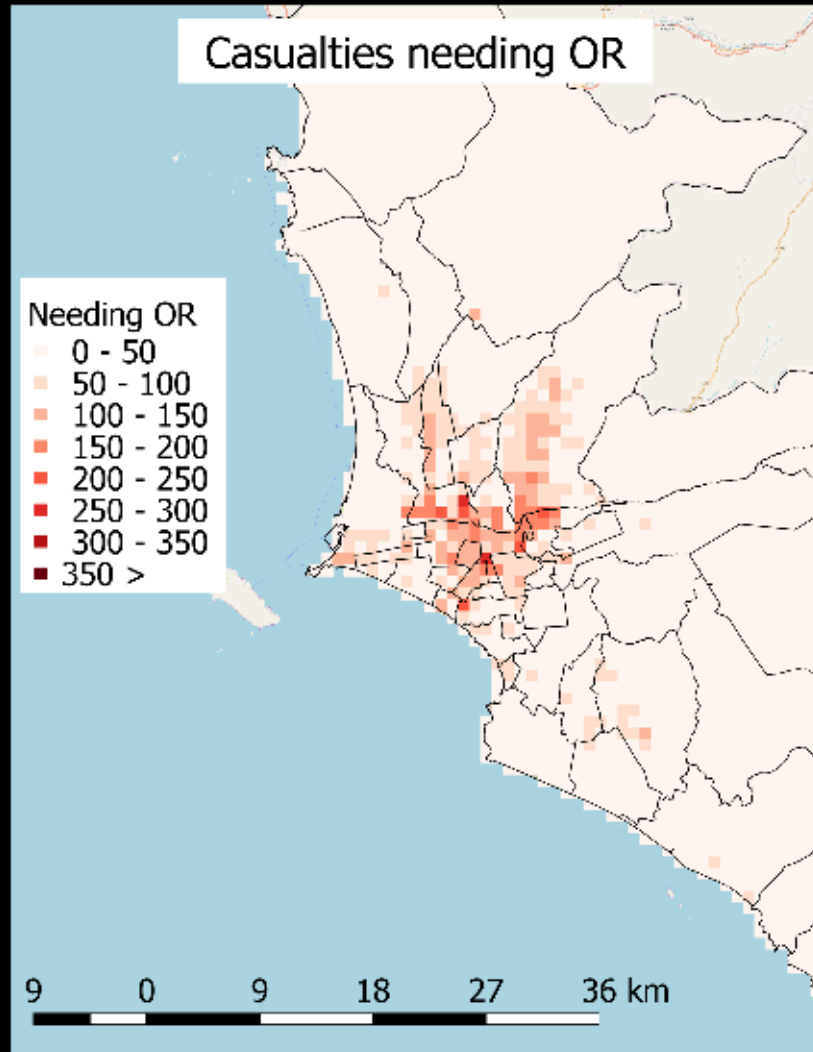


Buildings' risk (Zavala et al., 2012)
Contributors: CISMID/UNI



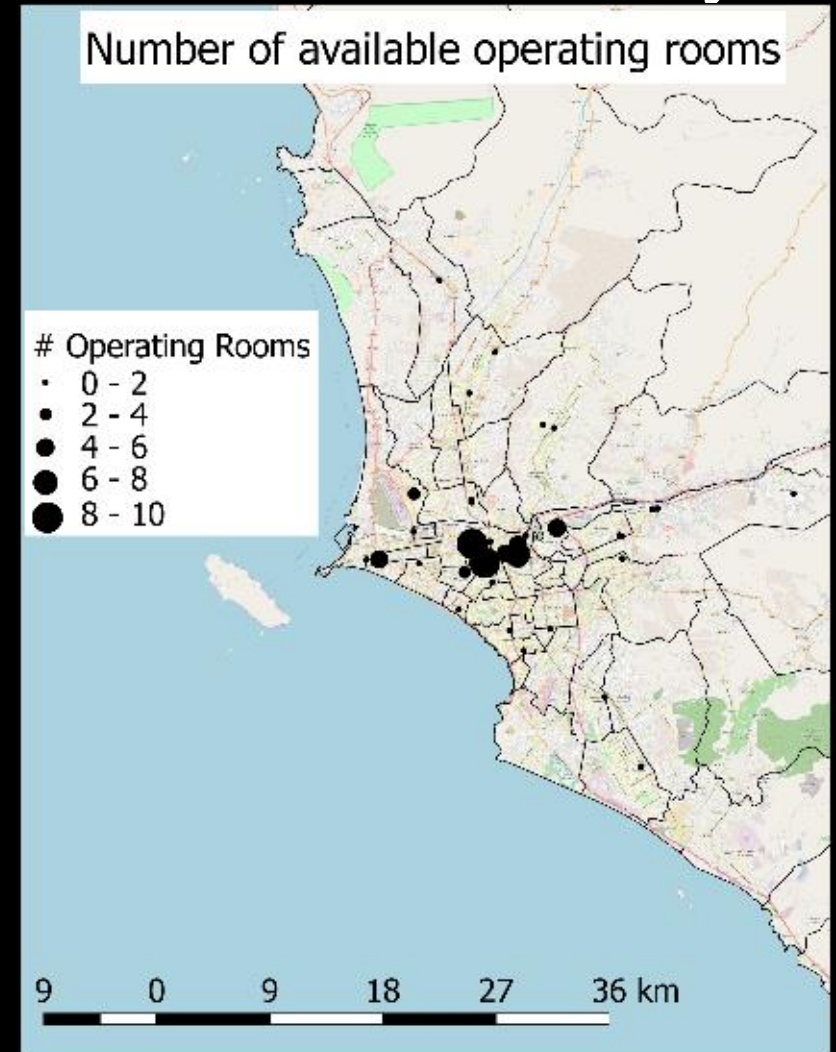
Hospitals (Santa Cruz et al., 2013)
Contributors: PUCP, World Bank.

Casualties



Ceferino, Kiremidjian & Deierlein, 2018

Hospital functionality



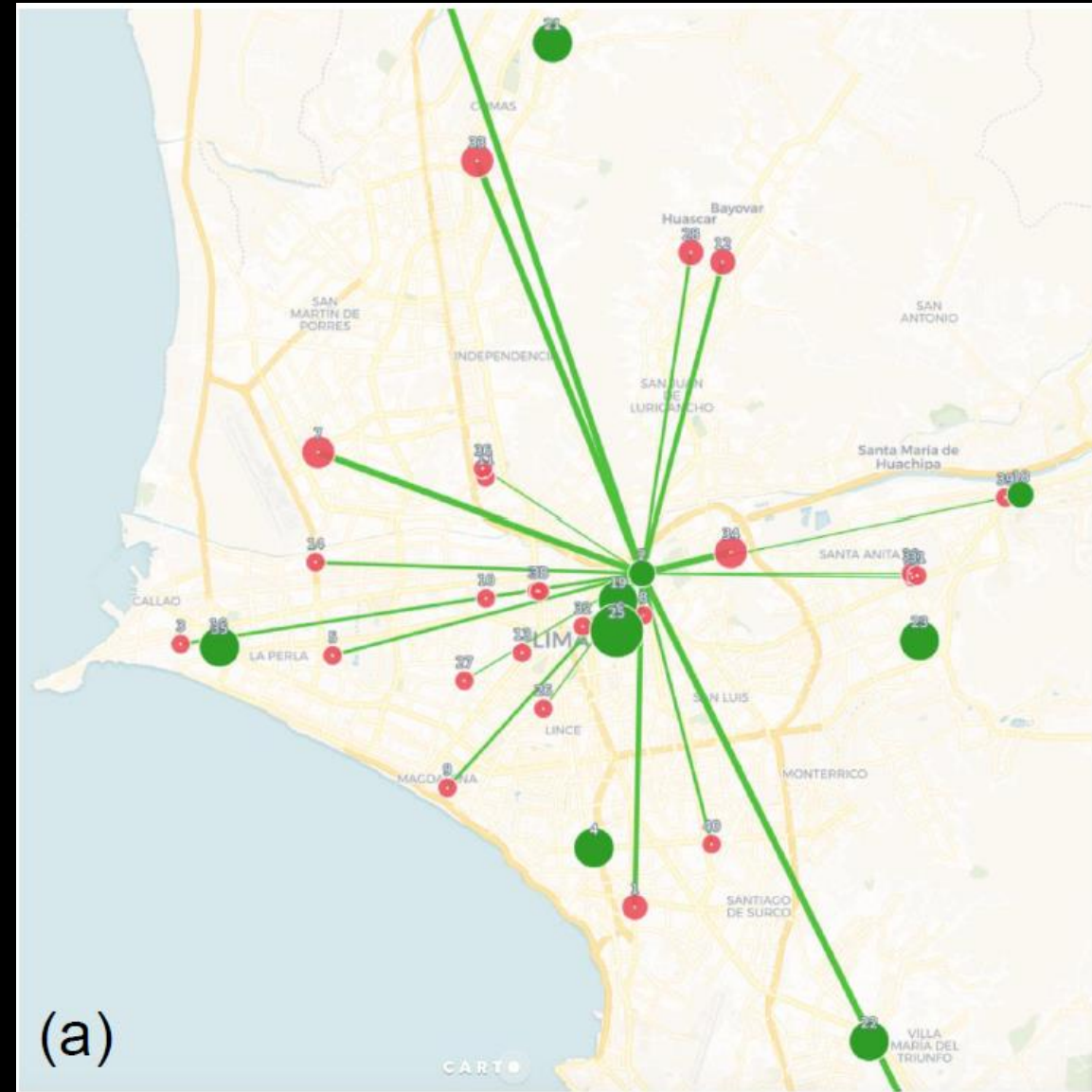
Ceferino et al. 2018

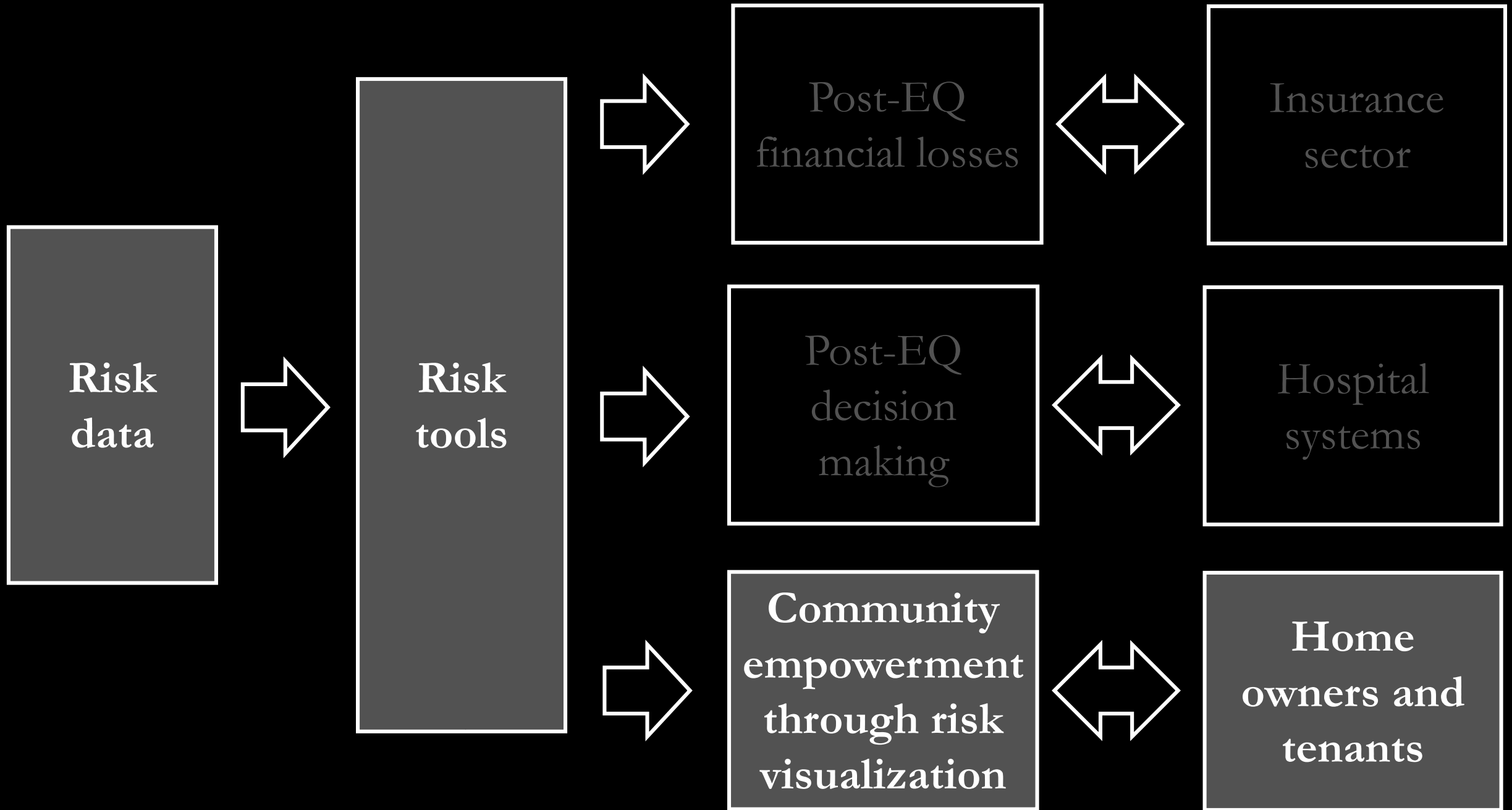
Patient redistribution after earthquakes

- Minimize:
 - Patient waiting time
 - Ambulance trips
- Report:

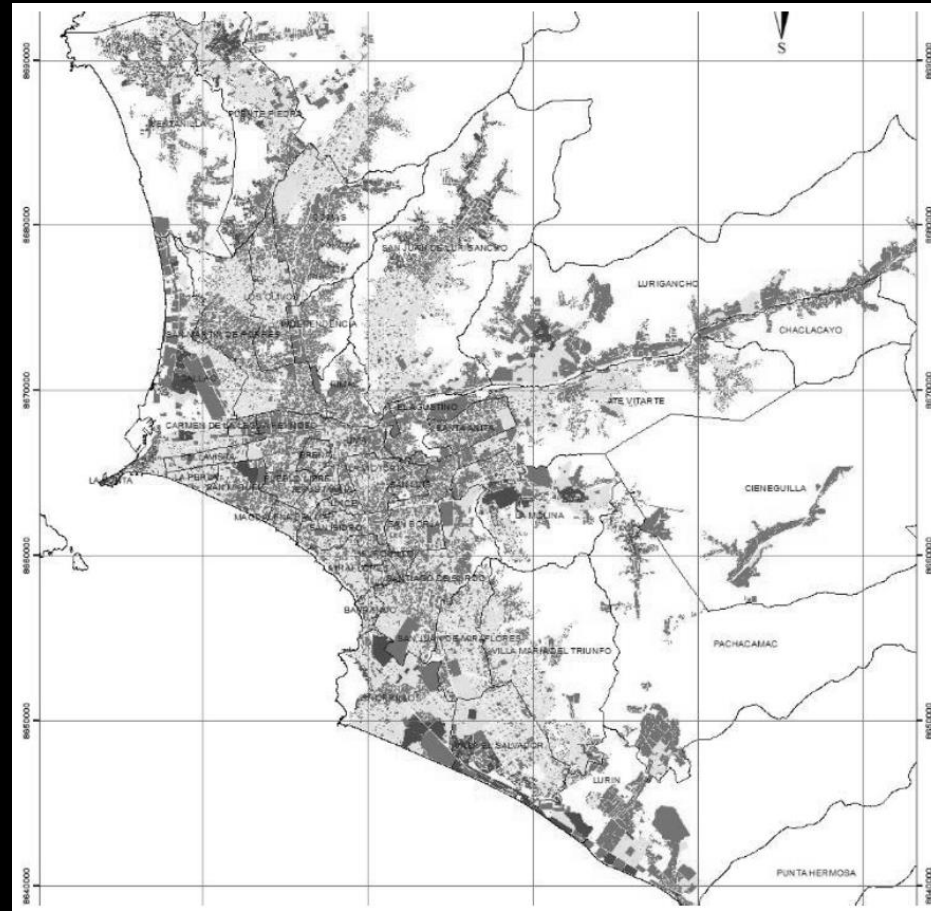
Example:

- **Rebagliati Hospital:** Be prepared to send 400 patients to VES Emergency Hospital
- **VES Emergency Hospital:** Be prepared to receive 600 patients





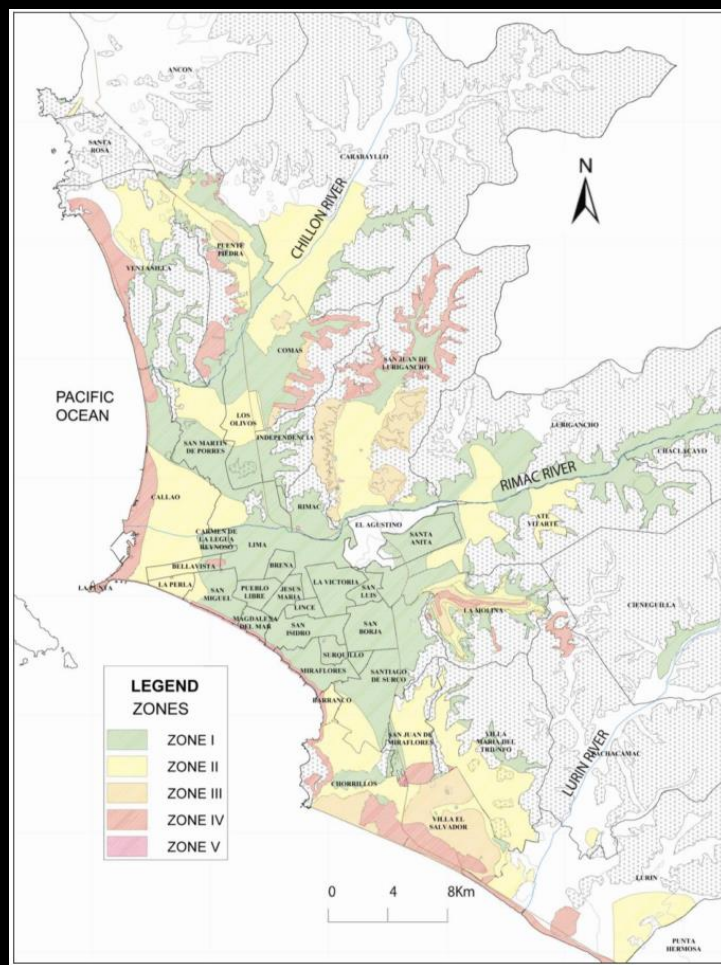
Empowering home owners and tenants through the risk visualization



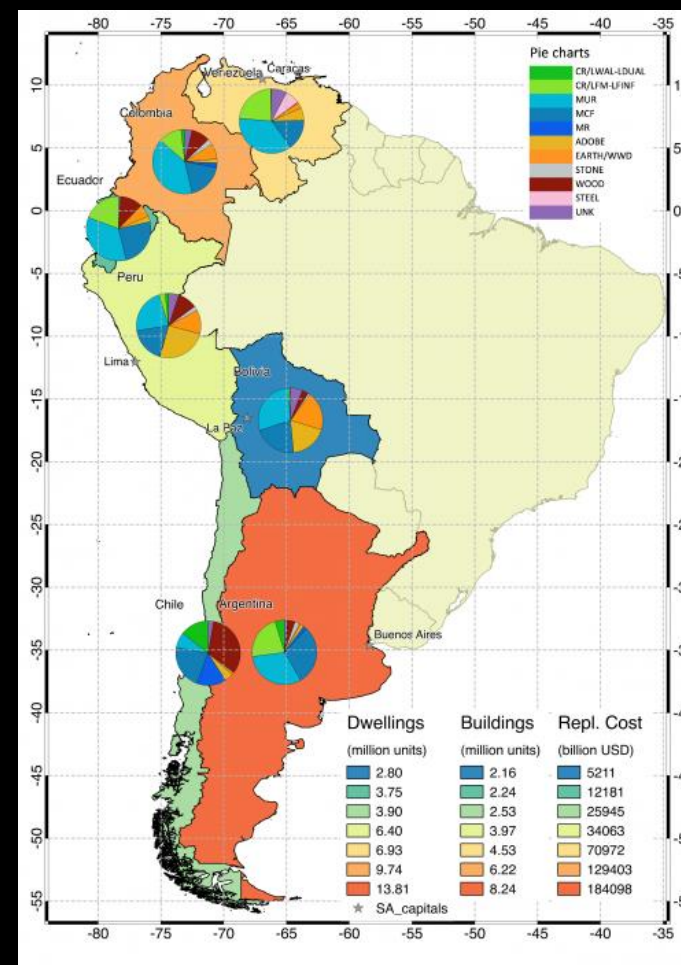
Buildings' risk (Zavala et al., 2012)

Contributors: CISMID/UNI

Existing risk data

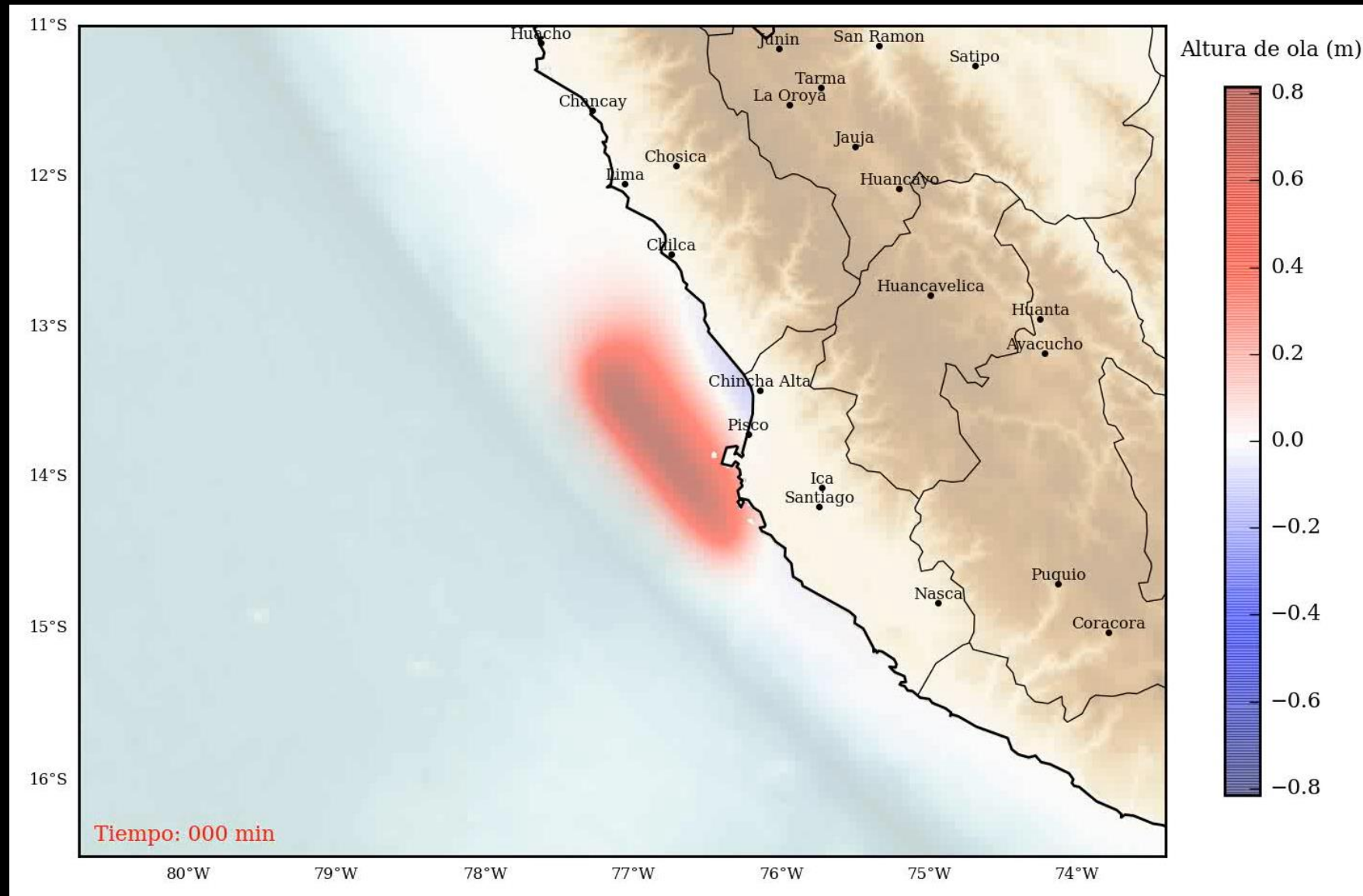


Soil condition (CISMID, 2010)



Building inventory
(Yepes-Estrada et al., 2017)

Existing risk data: Tsunami in Pisco, 2007



Morales &
Palacios (2018)

Earthquake scenario visualization

Parámetros <

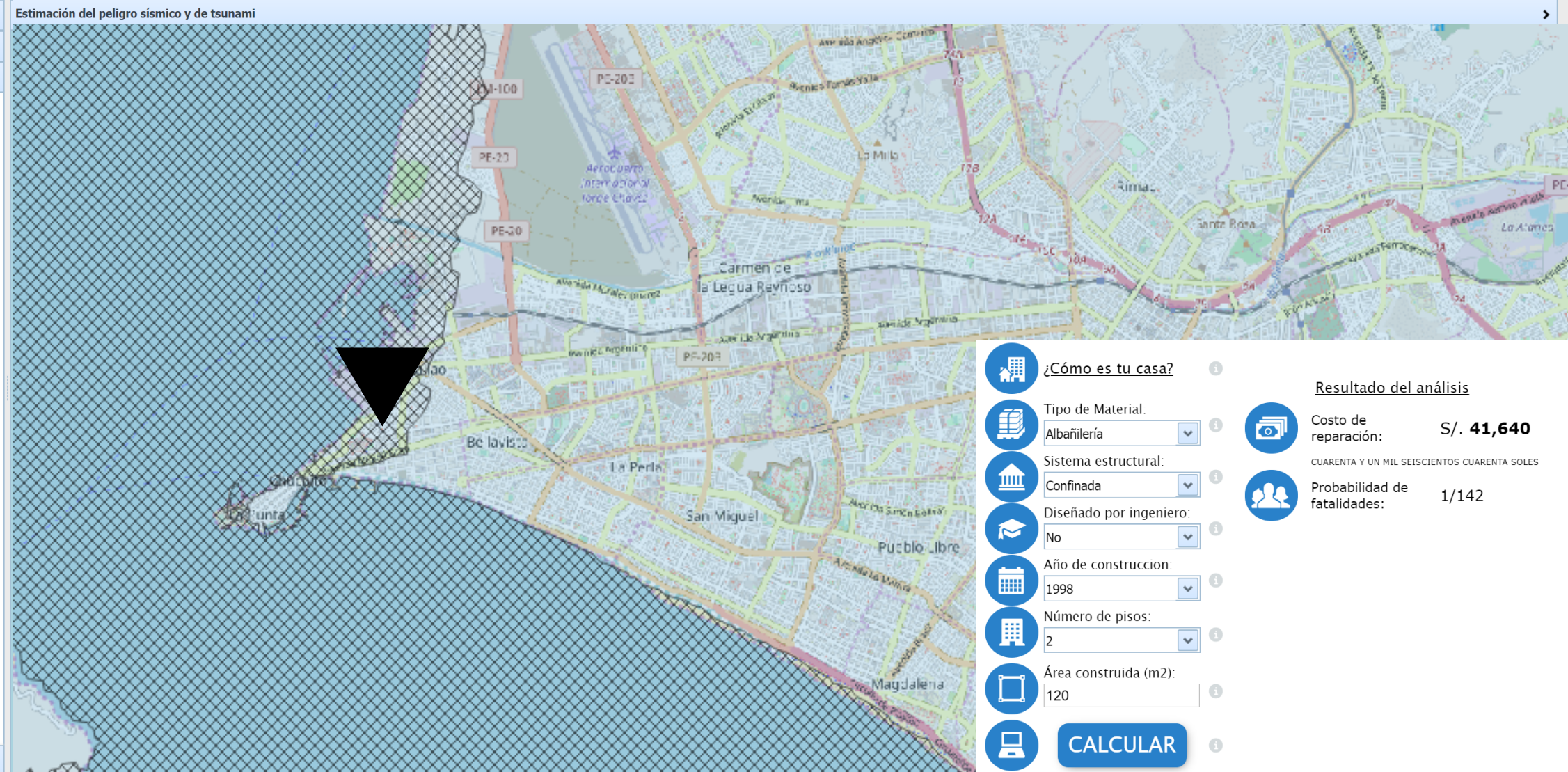
Dirección ^

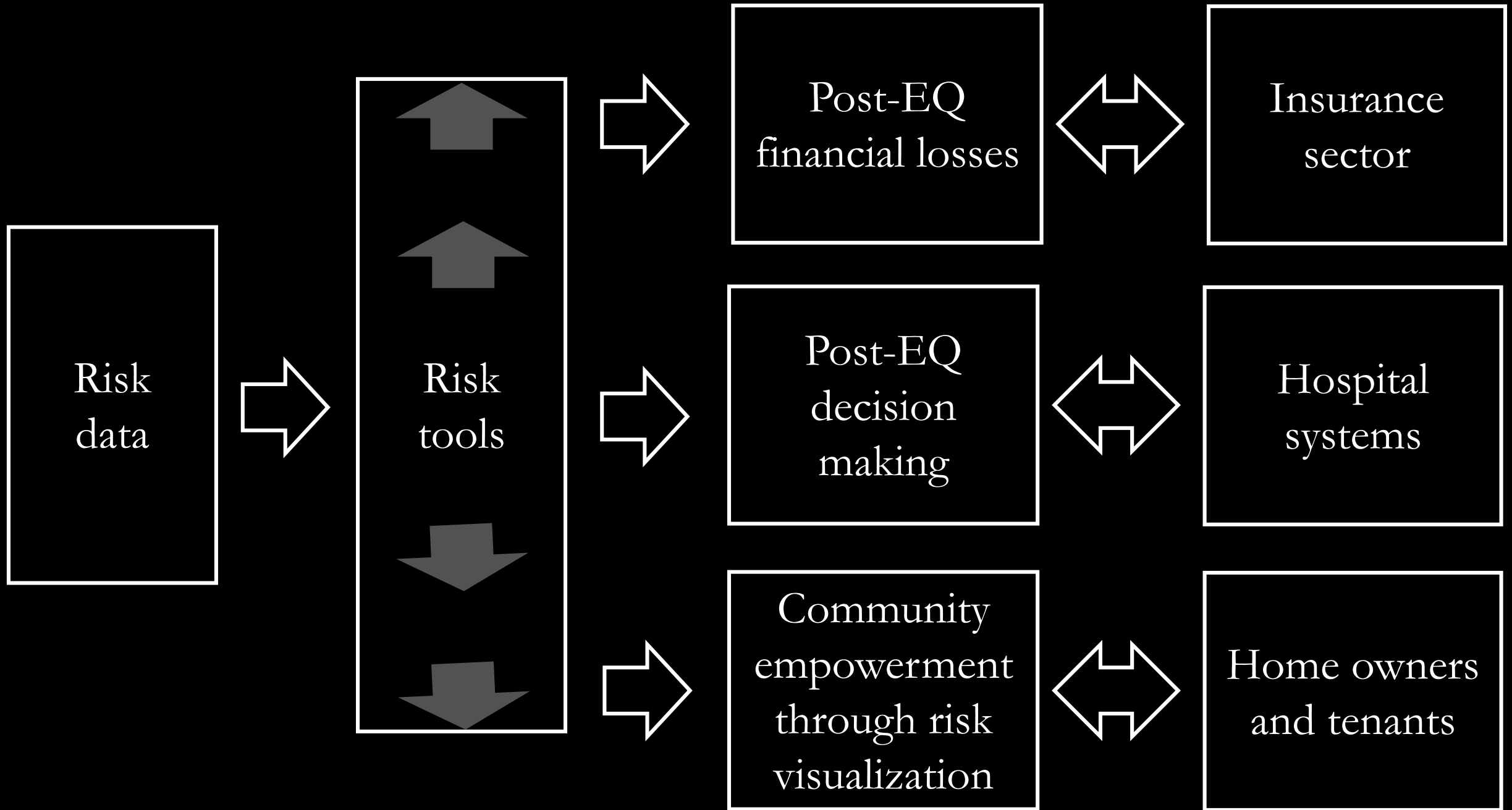
Escenario v

Sismo de magnitud (Mw)

8.6 8.0 7.0 6.0

Tipología ^





Vision to the future



2010 Chile Earthquake

Source: <https://www.youtube.com/watch?v=RHqLGAwbXfk>



Earthquake Visualization (Prof. Lu, 2016)

Source: <https://www.youtube.com/watch?v=9EboXfxle-M>