Flood risk: financing for resilience using insurance adaptive schemes

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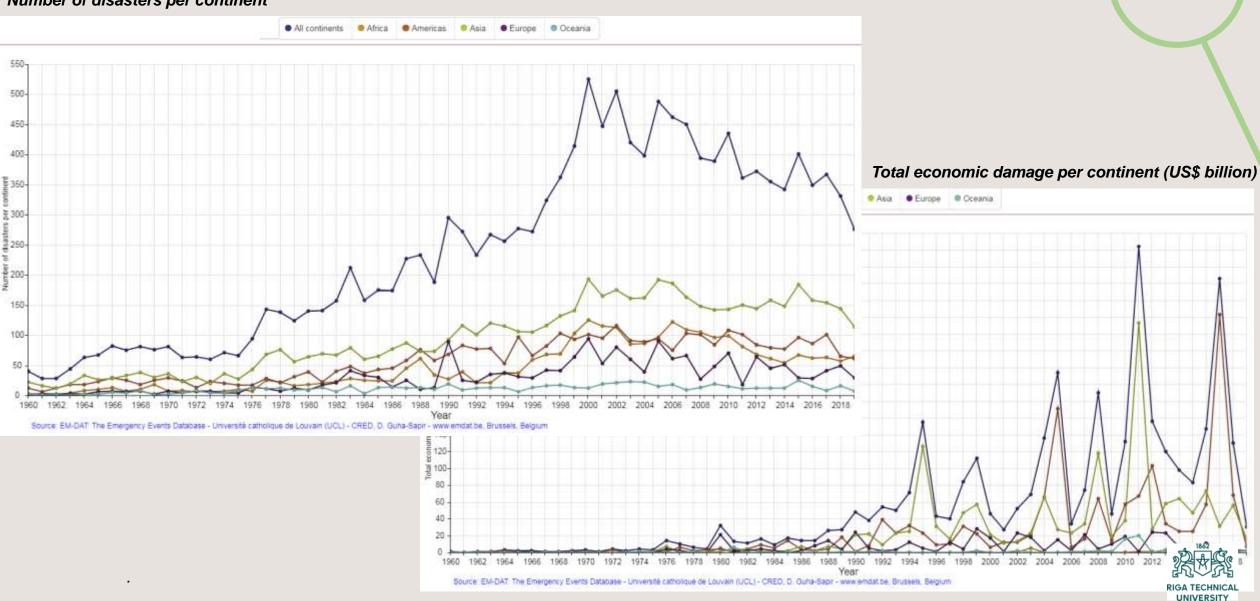
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ASS

BACKGROUND (1)

Number of disasters per continent



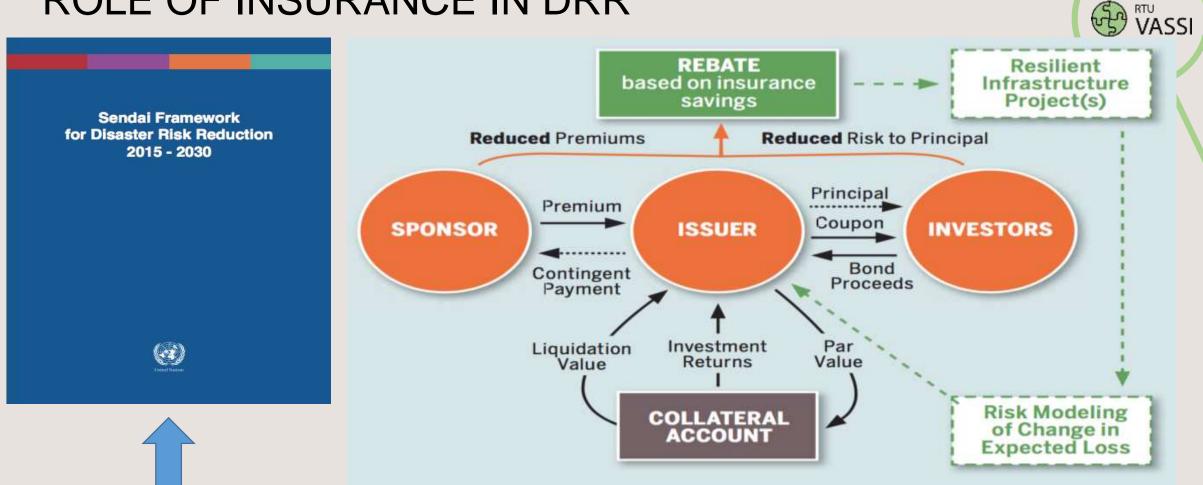
BACKGROUND (2)

In USD bn,	u: 2010	photo						
400								
350								
300								
250								
200								
150								
100								
50								
0					I FI FI			
1970 1975	1980	1985	1990	1995	2000	2005	2010	2015
Insured losses	<u> </u>	- year av	erage insu	red losses	2			
Uninsured losses	- 10	- vear av	erage tota	l economio	losses			

Source: Swiss Re Economic Research & Consulting, 2015



ROLE OF INSURANCE IN DRR



Development of financial risksharing mechanism as a priority for building community resilience from disasters



URBAN RESILIENCE

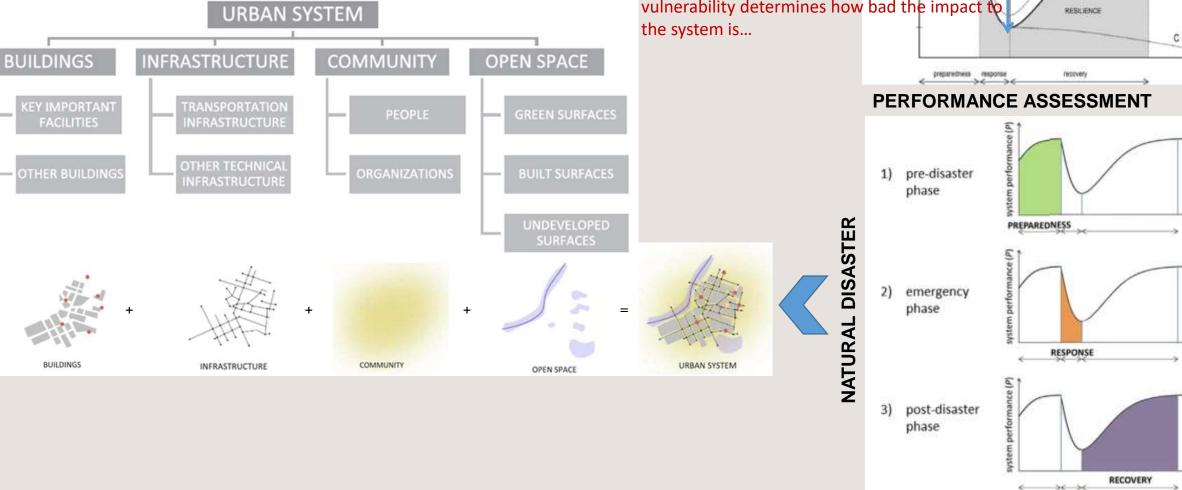
The magnitude of adaptive capacity determines how fast the system recovers and whether it can improve...

> The interaction of hazard, exposure and vulnerability determines how bad the impact to the system is...

natural disaster

seiformance dinte

performance (P)



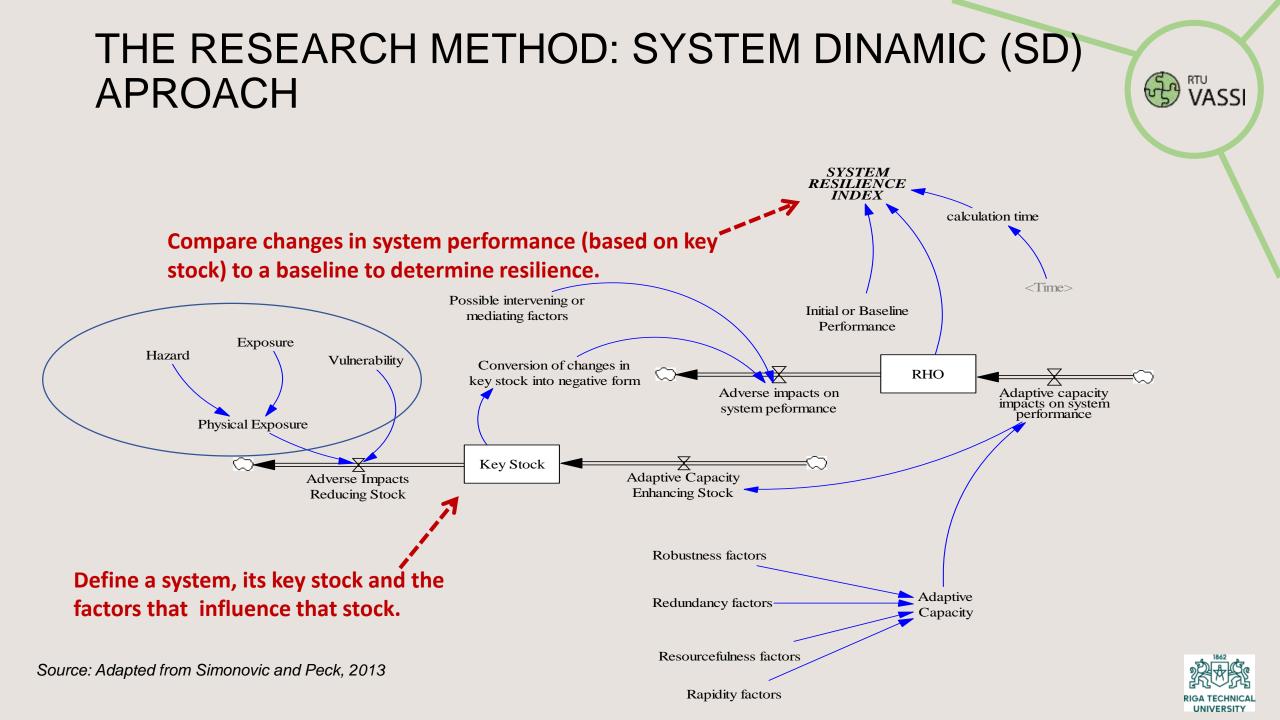
Source: Readapted - Resilience assessment of complex urban systems to natural disasters: A new literature review . Katarina Rus, Vojko Kilar, David Koren, International Journal of Disaster Risk Reduction 31 (2018) 311–330



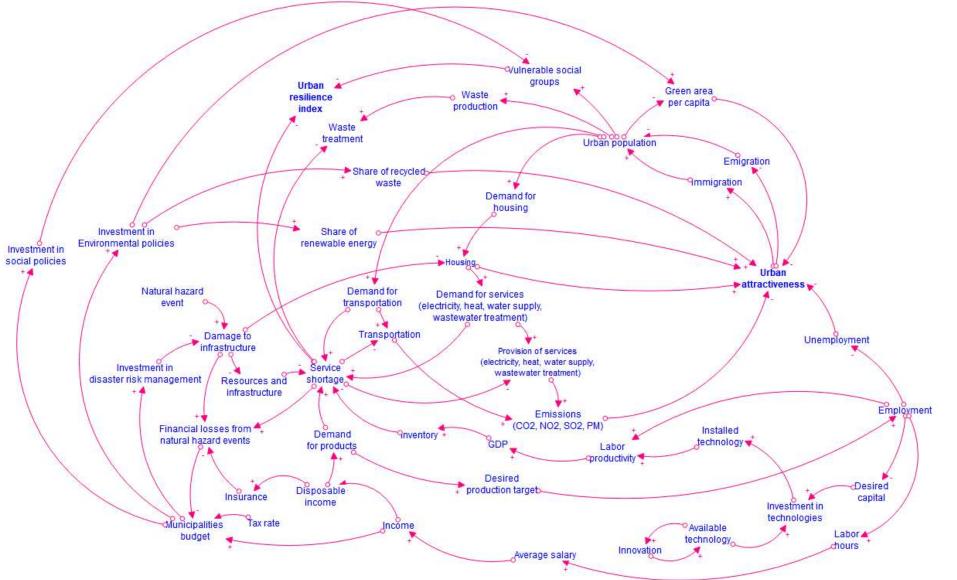
time (t)

time (t)

time (t)



THE PROPOSED SD MODEL

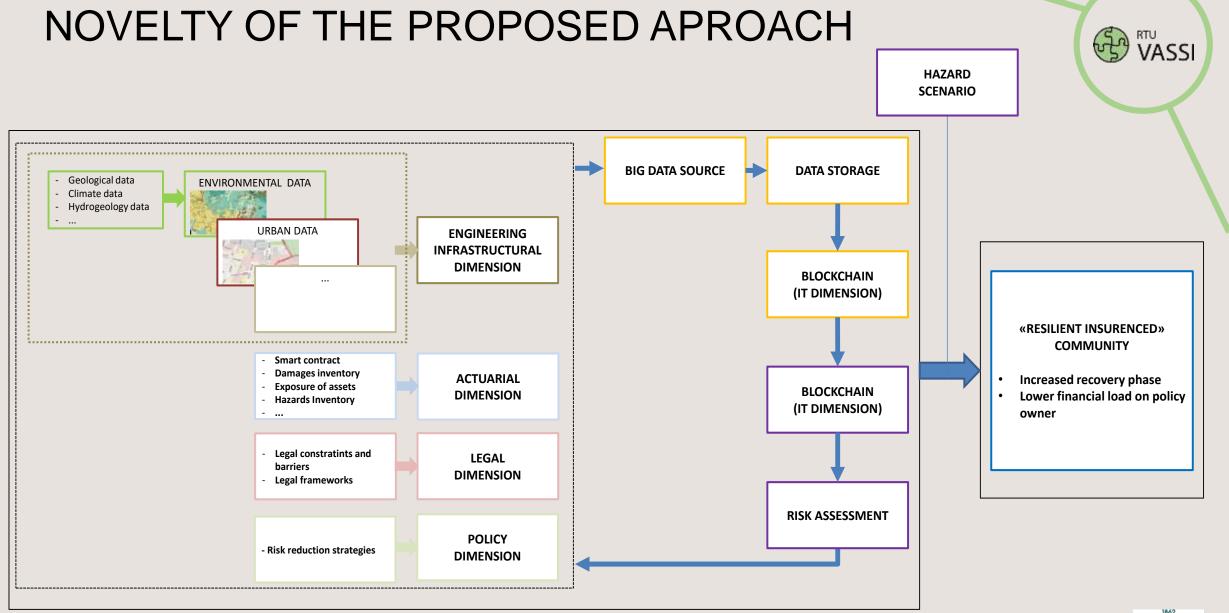


<u>STRATEGIES</u>

- Prevention
- Defense
- Mitigation
- Preparation
- Recovery (e.g. insurance)

Source: Maksims Feofilovs, Francesco Romagnoli, Charlotte Kendra Gotangco, Jairus Carmela Josol, Jean Meir Jardeleza, Joaquin Campos, Joseph Litam, Katrina Abenojar. Assessing Resilience Against Floods With A System Dynamics Approach: A Comparative Study Of 2 Cities. Not published.

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Source: Pagano, J.A., Romagnoli, F., Vannucci, E., Journal of Environmental and Climate Technologies, 2019



CONCLUSIONS

- A system dynamic approach would be essential to catch and understand the multi-disciplinary aspect and the different dimensions and to evaluate the optimal enhancing resilience strategies
- To connect the SD approach with blockchain platform
- To use innovative flood insurance mechanisms applied to smart contracts in the insurance sector against natural hazards
- Automatic updating scheme of the contract could concern also the infrastructures which have the role of risk mitigation in the blockchain scheme





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