

DISASTER RISK MANAGEMENT

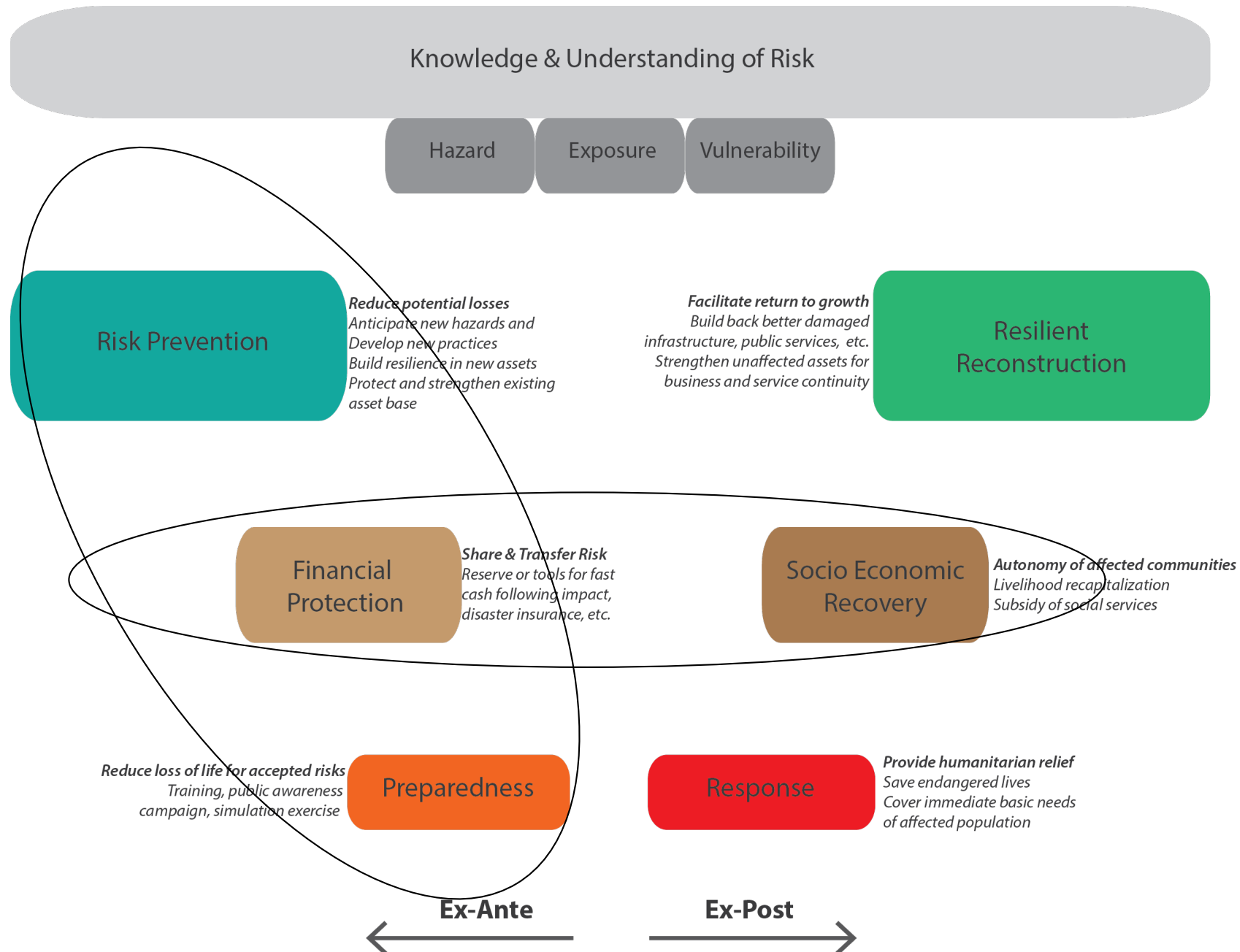
Universita di Roma Tor Vergata
B.A. Global Governance

Spring 2022

Session 11 – Monday May 16, 2022

Instructor: Erdem Ergin

Disaster Risk Management

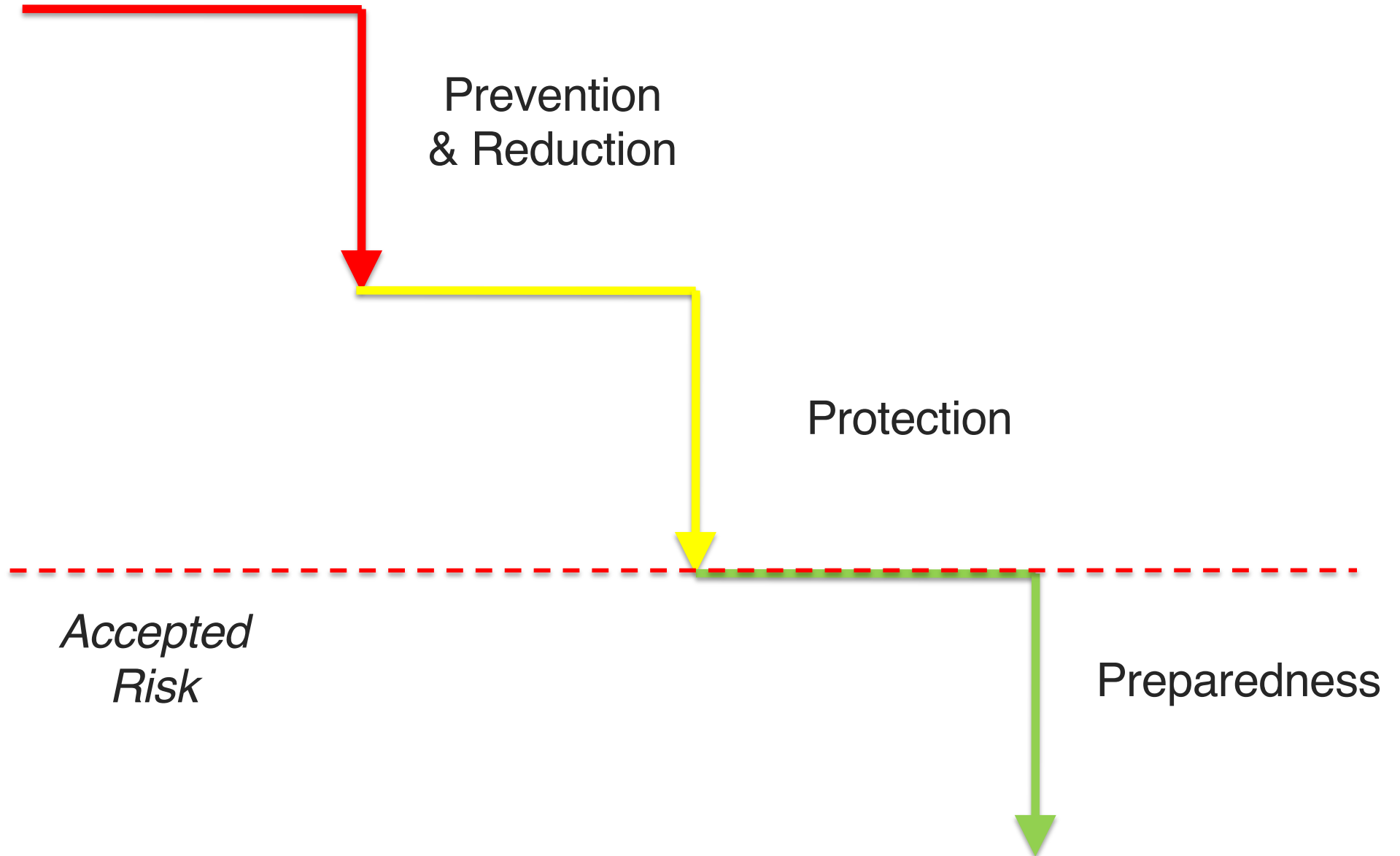


Protection

The process of formally or informally shifting the financial consequences of particular risks from one party to another whereby a household, community, enterprise or state authority will obtain resources from the other party after a disaster occurs, in exchange for ongoing or compensatory social or financial benefits provided to that other party.

Also known as **Risk Transfer**

Risk Management



Risk Matrix

Combine Hazard Probability and Impact Severity

S e v e r i t y	Catastrophic	5	5	10	15	20	25
	Significant	4	4	8	12	16	20
	Moderate	3	3	6	9	12	15
	Low	2	2	4	6	8	10
	Negligible	1	1	2	3	4	5
			1	2	3	4	5
			Improbable	Remote	Occasional	Probable	Frequent
			Likelihood				

Red = Preparedness + Protection + Prevention
 Yellow = Preparedness + Protection
 Green = Preparedness

System Approach

PREPAREDNESS is the first tier. Risk is accepted and we prepare to face it.

Save lives and meet most basic needs

Timeline: short term

PROTECTION is the second tier. Risk is shared and transferred.

Build safety nets and protect assets & activities

Timeline: Long/mid term

PREVENTION is the third tier. Risk is controlled and reduced.

Avoid new risk and decrease existing risks

Timeline: Long term

Recovery/Protection Components

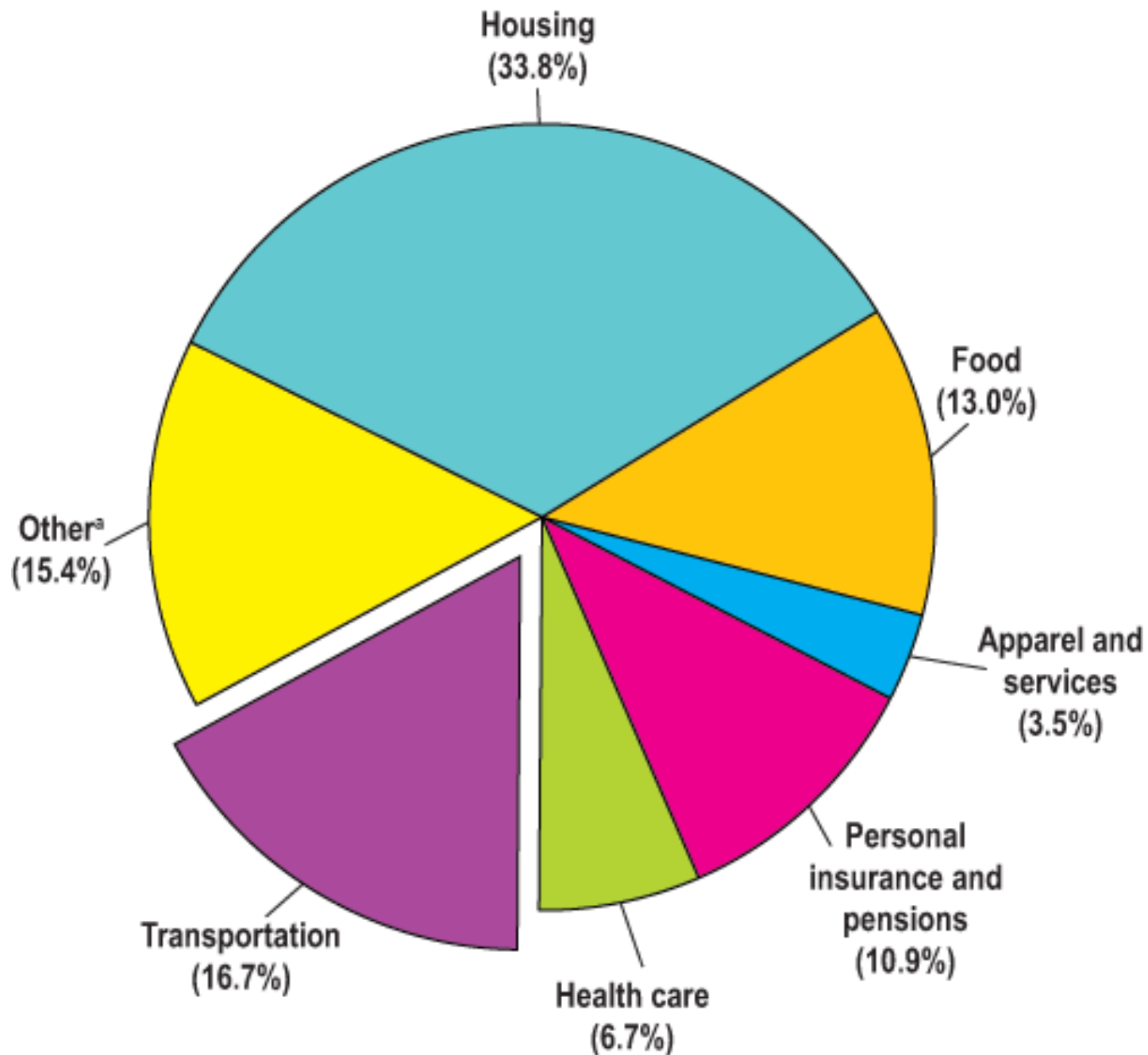
1 – Household survey	Socio-economic Survey
2 – Work	Community Organization
3 – Training	Job market analysis
4 – Recapitalization	Insurance
5 – Loans	Insurance
6 – Subsidies	Alternative economies
7 – Bail out	Sovereign National Finance

1 – Socio-Economic Survey

Socio-economic information of households. Revenue & Expenditure sources



1 – Spending breakdown



2 – Community Organization

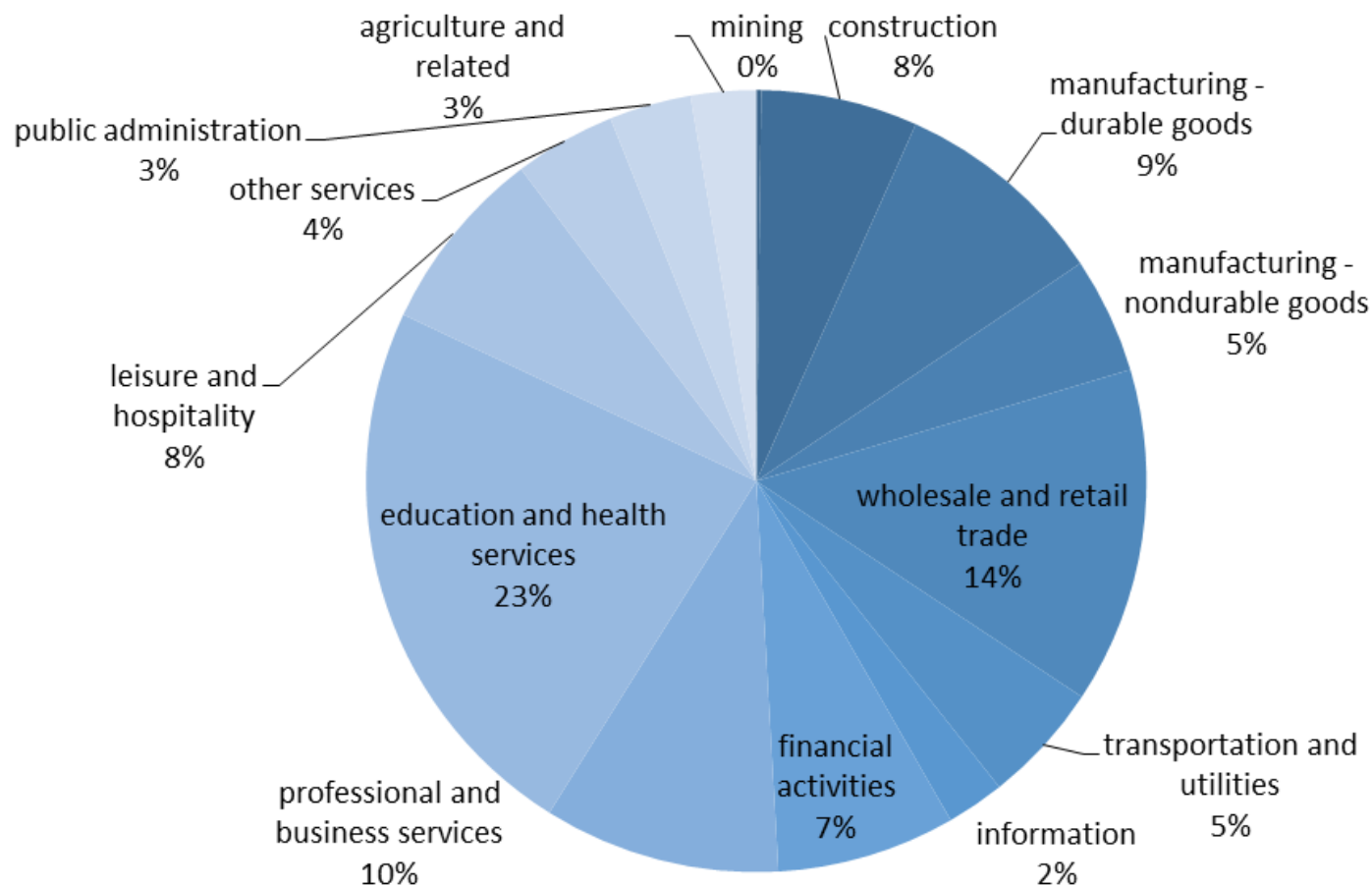
Civil Society

Existence of formal and informal community-based organizations such as NGOs, religious entities, traditional entities



3 – Job Market Analysis

Identify the trends on employment, needed skills and employer demands. *(Minnesota, USA in 2014)*



4 – Insurance

Disaster insurance & incentives

The equitable transfer of the risk of a loss, from one entity to another in exchange for payment. Premiums are calculated based on event probability and impact severity.

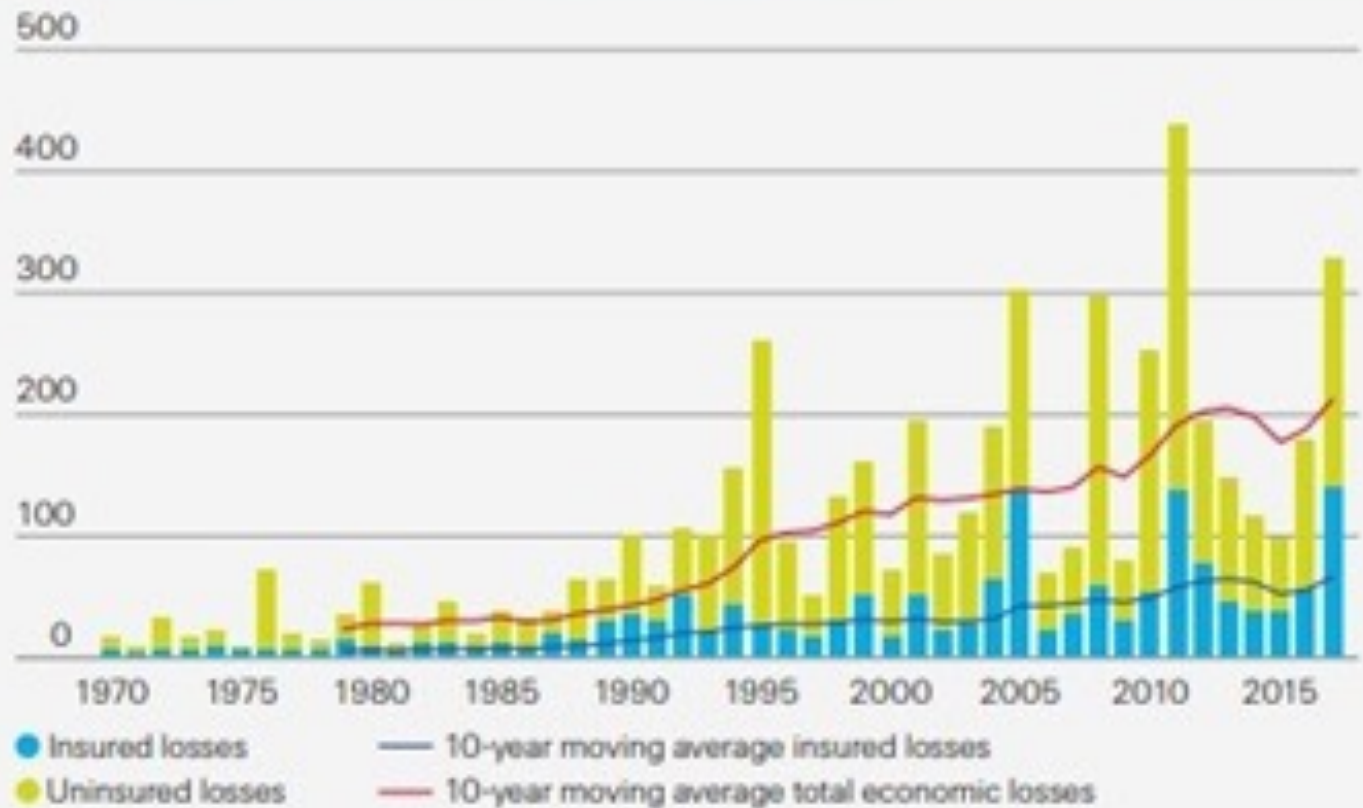


Protection gap is increasing

Figure 4

Insured vs uninsured losses,
1970 – 2017, in USD billion
at 2017 prices

Economic losses
=
insured +
uninsured losses



Source: Swiss Re Institute

The Big One

Pandemic losses could dwarf other major insurance events



Source: Lloyd's of London

Note: Coronavirus data is a Lloyd's estimate from mid-May

Bloomberg

Case Study – The NFIP

- 1965 Hurricane Betsy (First 1 Billion US\$)
- 1968 National Flood Insurance Program
Mandatory on government backed mortgages
- 2005 Hurricane Katrina (108 Billion US\$)
NFIP has 18 Billion US\$ debt
- 2011 FEMA revise flood maps
- 2012 Hurricane Sandy (68 Billion US\$)
NFIP gets additional 7 Billion US\$ debt
- 2012 Biggert-Waters Flood Insurance Law
- 2014 FEMA develops new flood map regulations



Hurricane Katrina – USA 2005

Most expensive disaster in US history – 108 Billion US\$

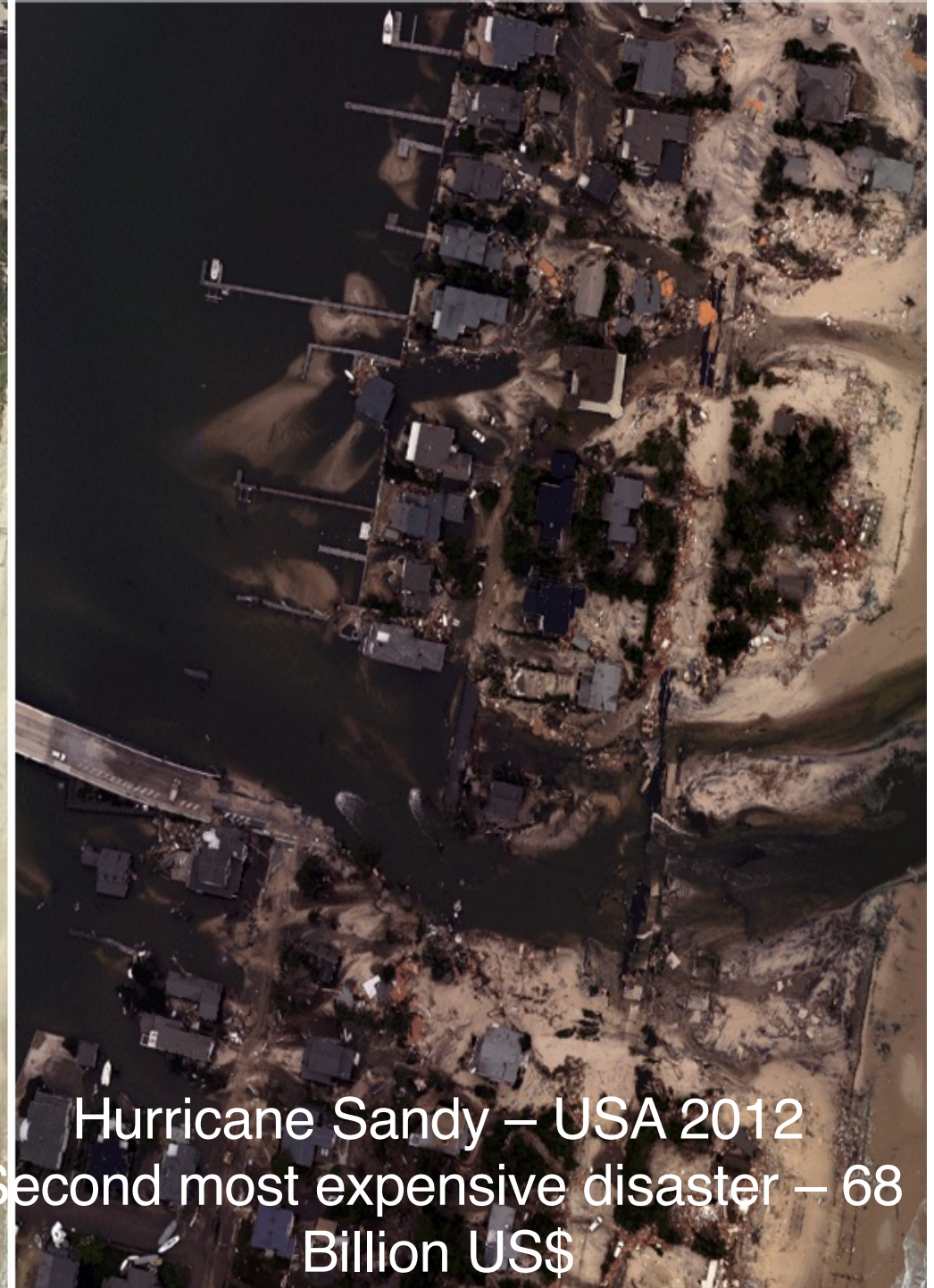


Google

BEFORE



AFTER



Hurricane Sandy – USA 2012
Second most expensive disaster – 68
Billion US\$

5 – Alternative Economies

Bartering

Barter is a system of exchange by which goods or services are directly exchanged for other goods or services without using a medium of exchange, such as money.



5 – Alternative Economies

Local cultural practices

“Pay day”. Done between coworkers. Every month, coworkers pay part of their salaries to a different member of the group.



5 – Alternative Economies

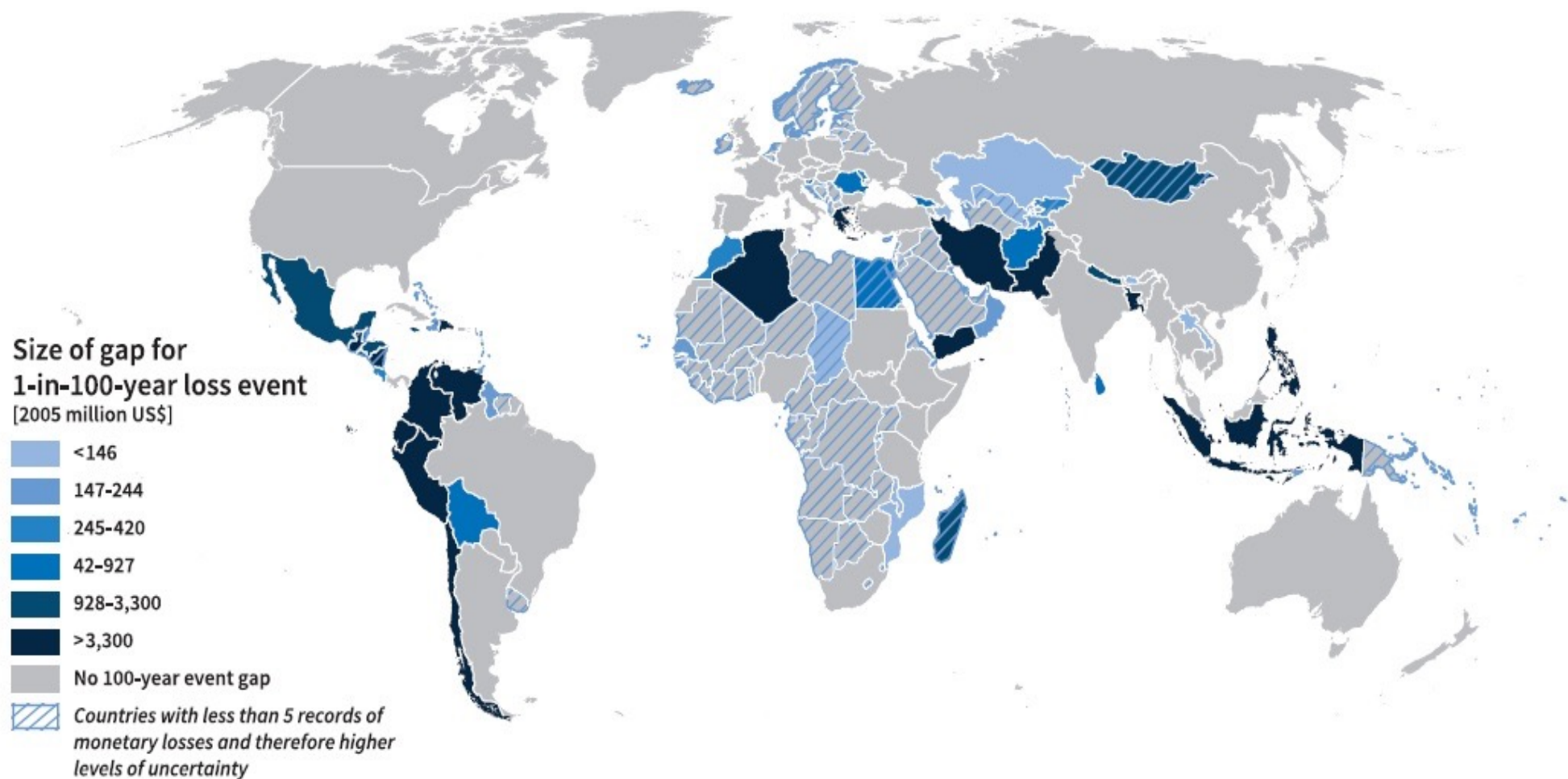
Local cultural practices

“Gold day”. Close-knit group meets on a regular basis. Everyone brings a gold coin, the host receives all the gold. Every member hosts the meeting in turn.



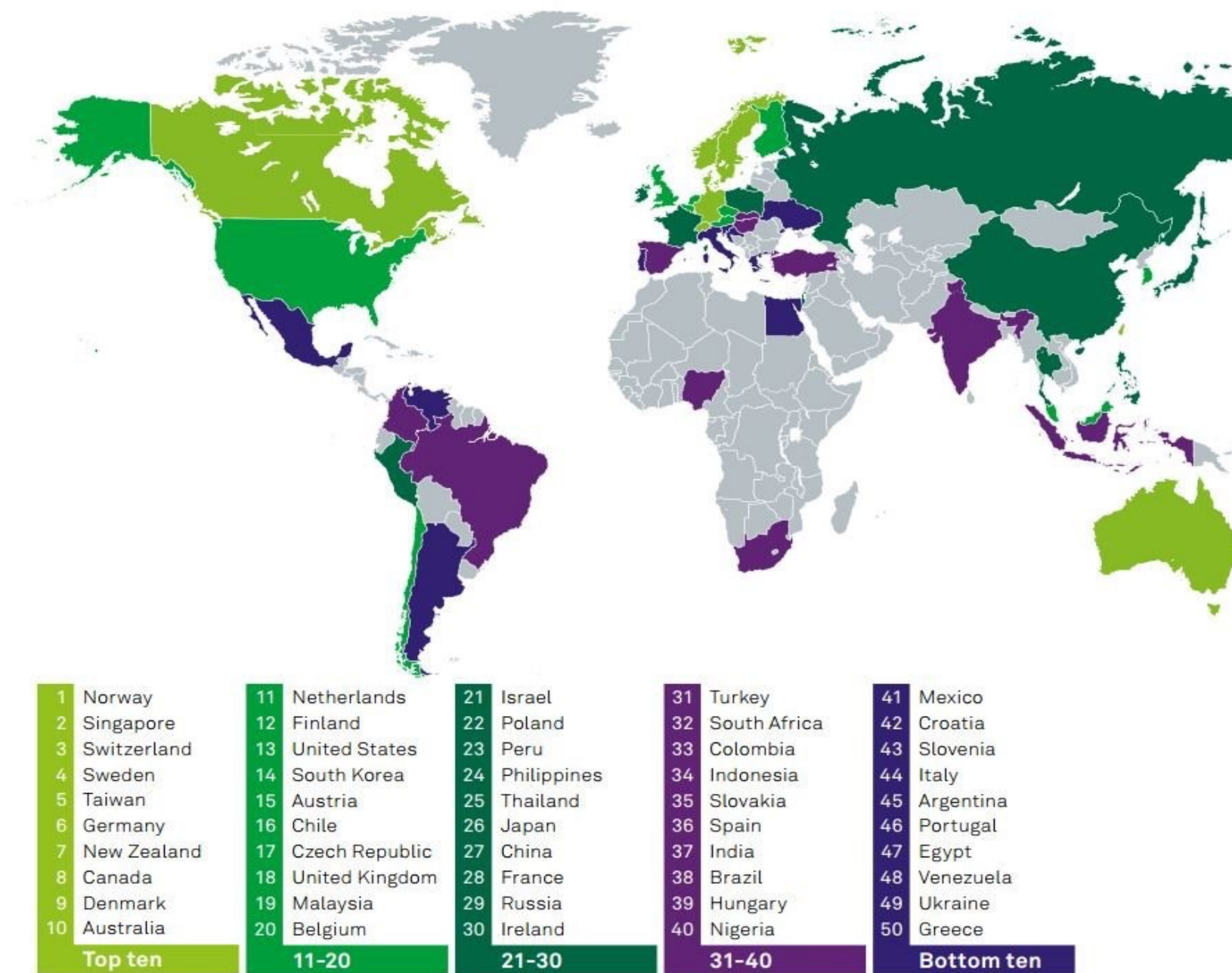
6 – Sovereign Disaster Risk Financing

The equitable transfer of the risk of a loss, from one entity to another in exchange for payment. Premiums are calculated based on event probability and impact severity.



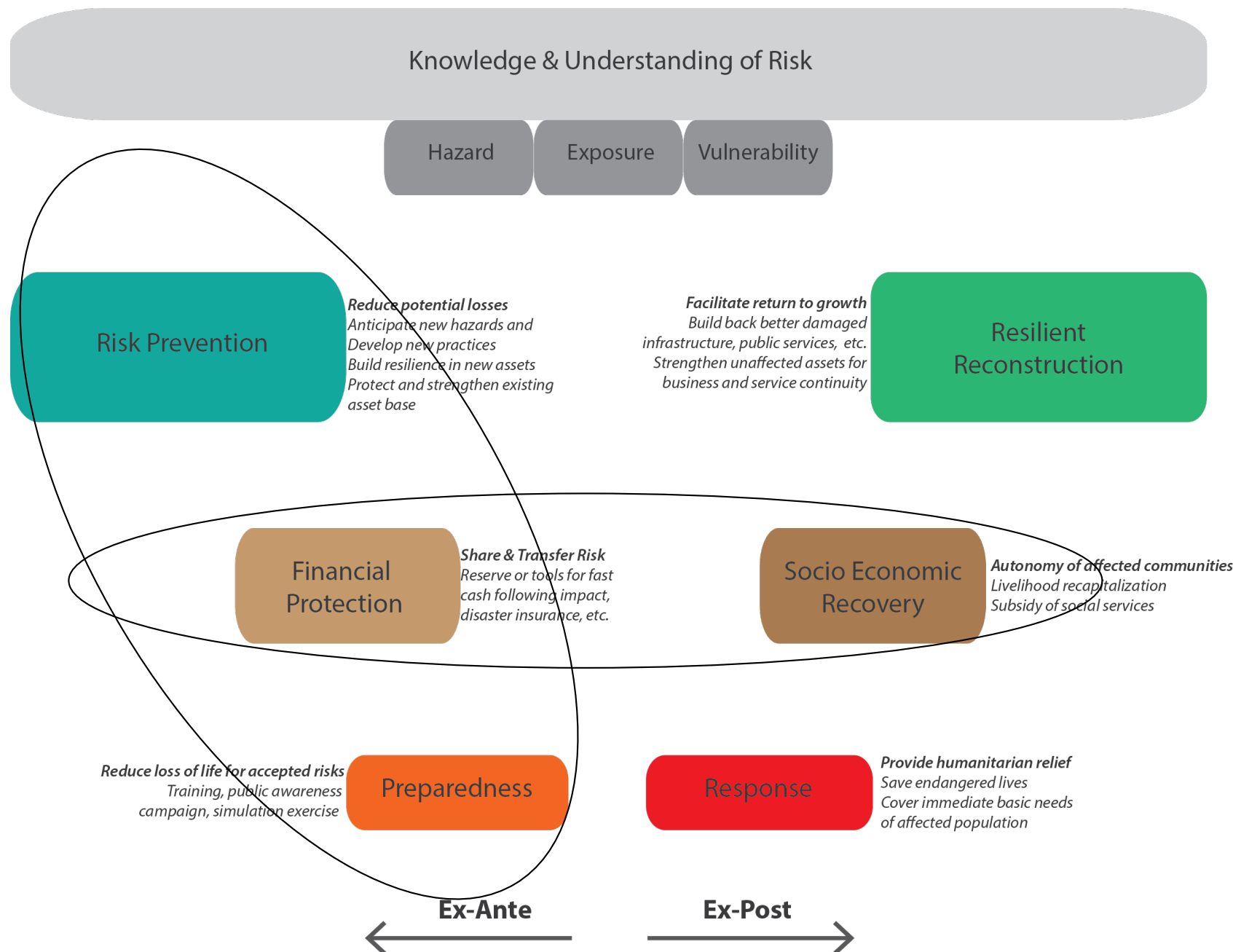
MAPPING SOVEREIGN RISK

BSRI country rankings by quintile, September 2015



Source: BlackRock Investment Institute, October 2015.

Disaster Risk Management



DISASTER RISK MANAGEMENT

Universita di Roma Tor Vergata
B.A. Global Governance

Spring 2022

Session 11 – Monday May 16, 2022

Instructor: Erdem Ergin