

# Understanding Disaster Risk and Resilience

Online Workshop on DRR, Risk-informed Governance, Finance  
Mechanisms and Innovative Solutions for Local Resilience

11 April 2023



# UNDRR

UN Office for Disaster Risk Reduction

**SEDAI FRAMEWORK**  
FOR DISASTER RISK REDUCTION 2015-2030

With the support of



Ministry of  
the Interior and Safety



Incheon  
Metropolitan City





# DRR Concepts

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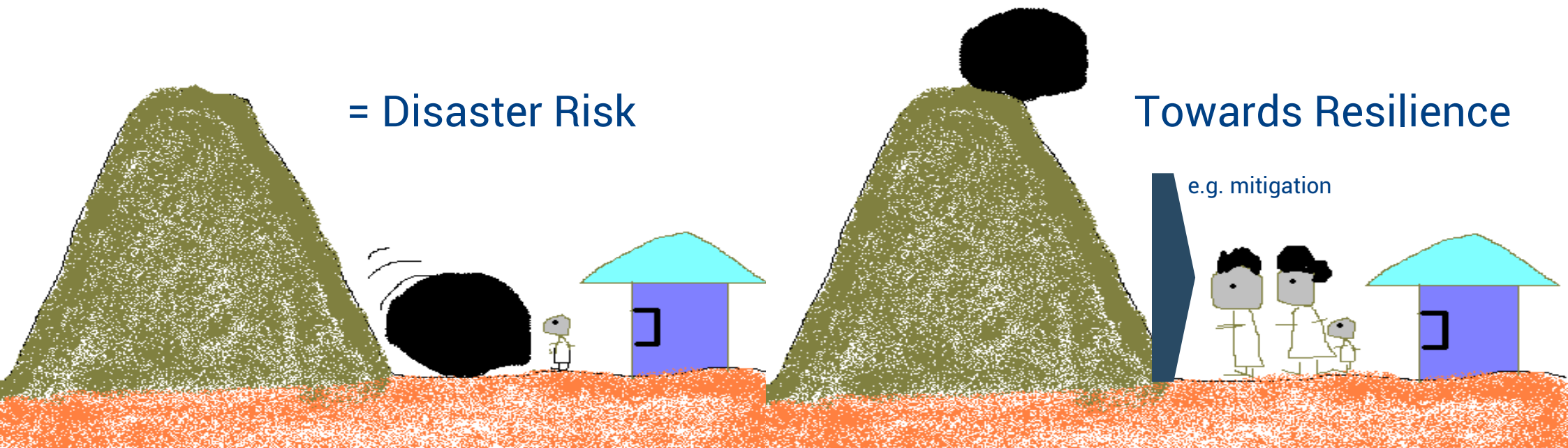
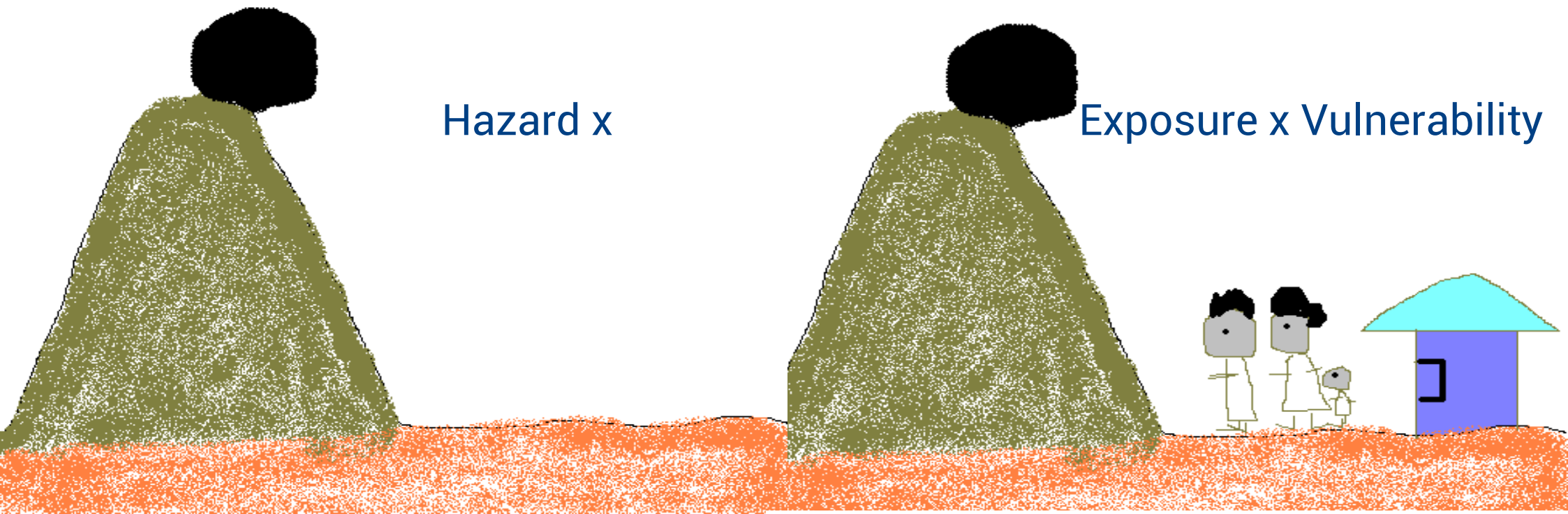
# Disaster Risk

## *A function of...*



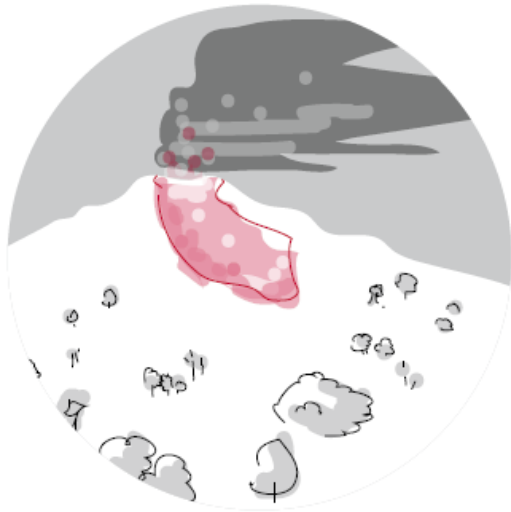


# a simple picture of disaster risk



# Understanding Risk

## Risk and the context of hazard, exposure and vulnerability



There is no such thing as a **natural disaster**, only **natural hazards**



We make **choices** as to where we inhabit, how we build and what research we do



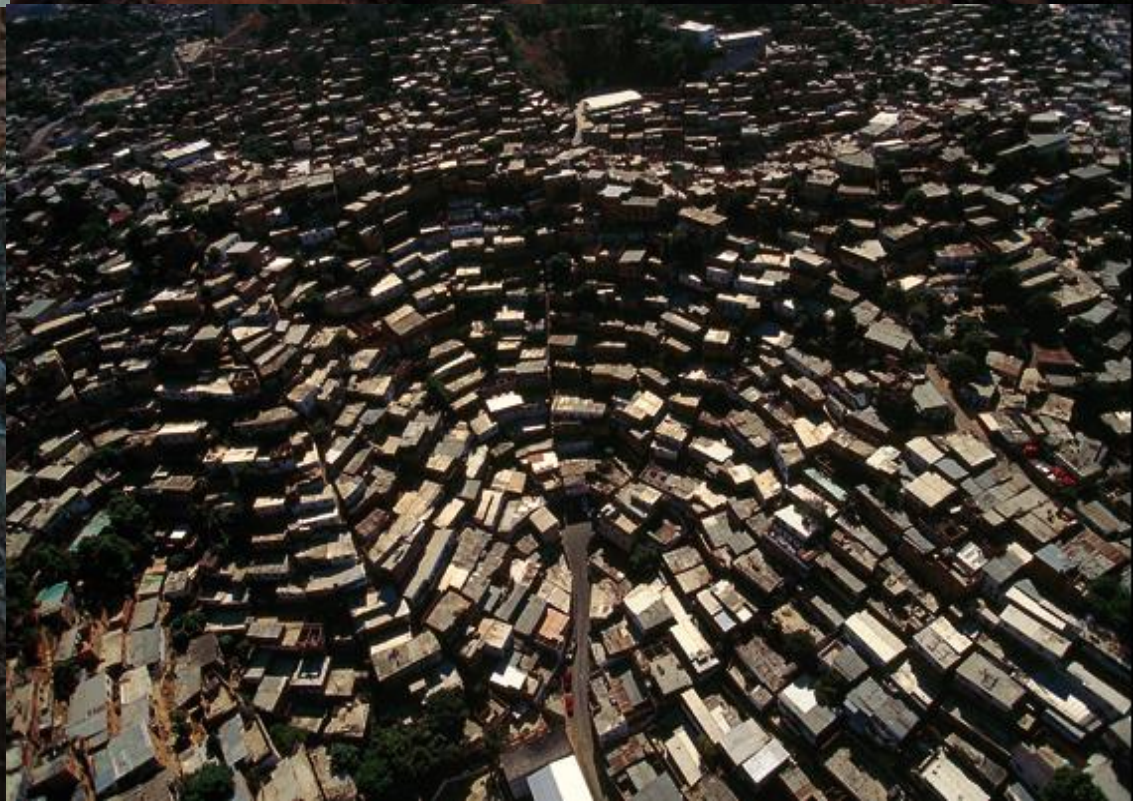
Risk is the combination of **hazard, exposure** and **vulnerability**



**Death, loss** and **damage** is the function of the context of hazard, exposure and vulnerability



**Disasters are not natural**





# Hazards – multiple types

Hazards could be natural, human-induced, or both, in origin. Types include:

- Geophysical
- Hydrometeorological
- Environmental
- Chemical
- Biological
- Technological
- Others



# Put your answer in the chat

**Which hazards are the most common in your community?**







# Disaster Trends

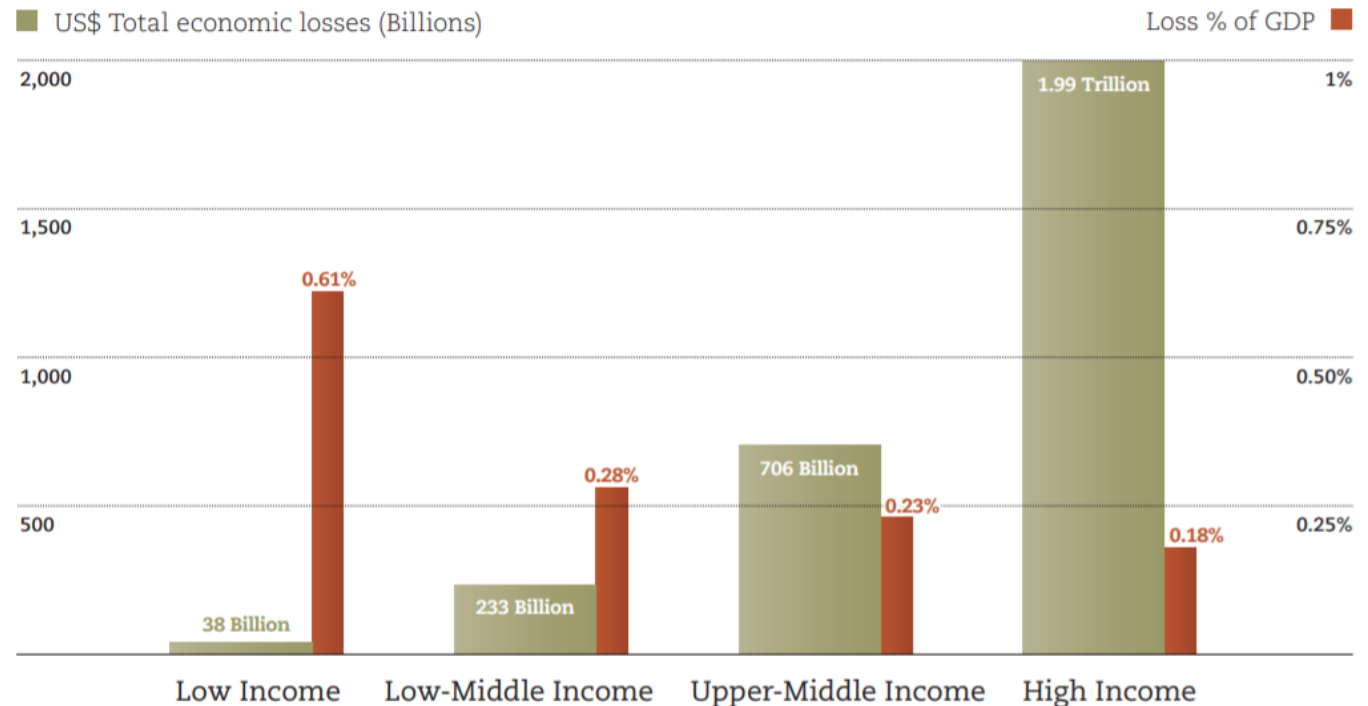
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## Impact in numbers



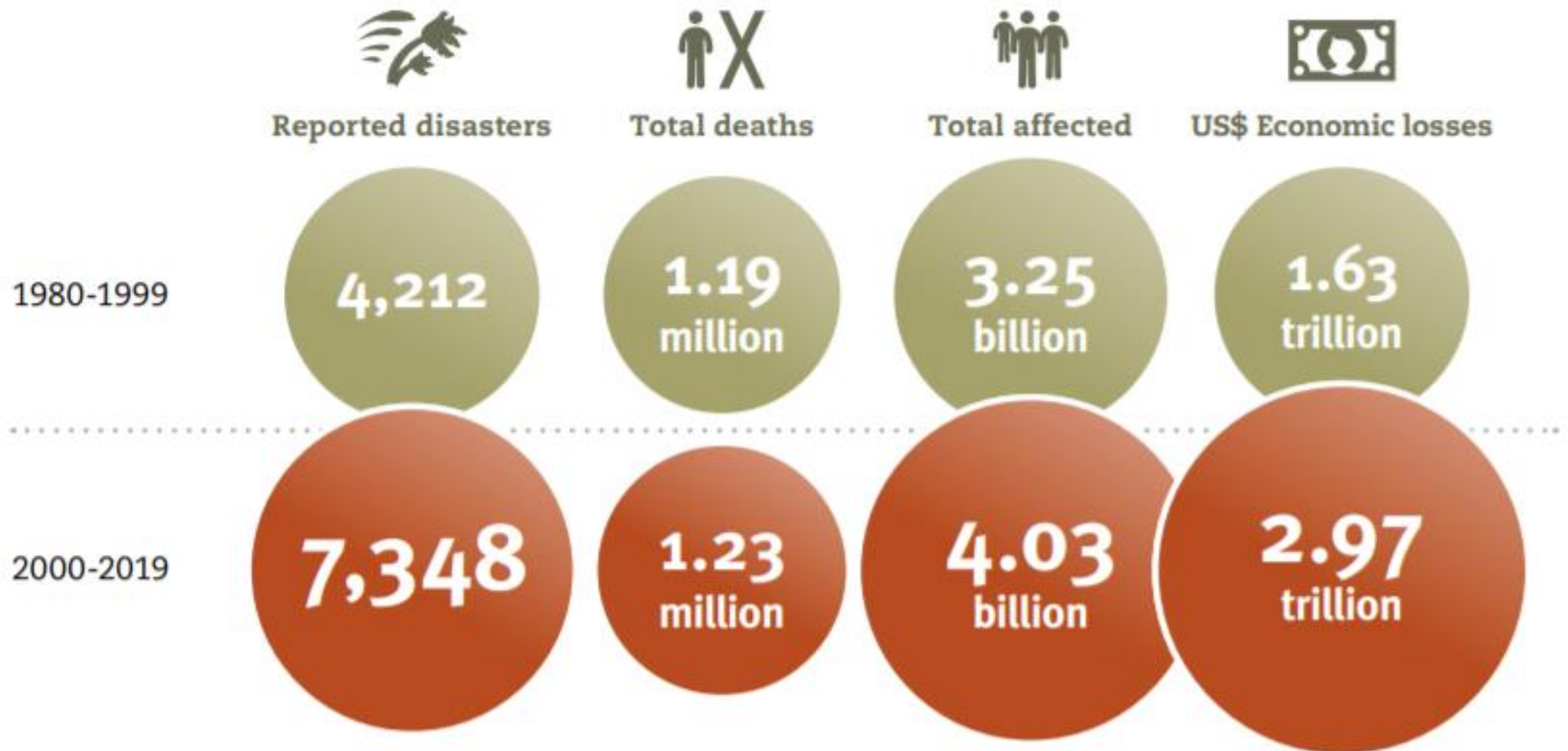
# Climate and disaster risk – driving inequality and crises

- Hazards and climate change do not affect everyone equally – and never have.
- Climate and disaster risks do not exist in a vacuum – they exacerbate existing vulnerabilities and other risks, and can themselves be exacerbated by instability and shocks.



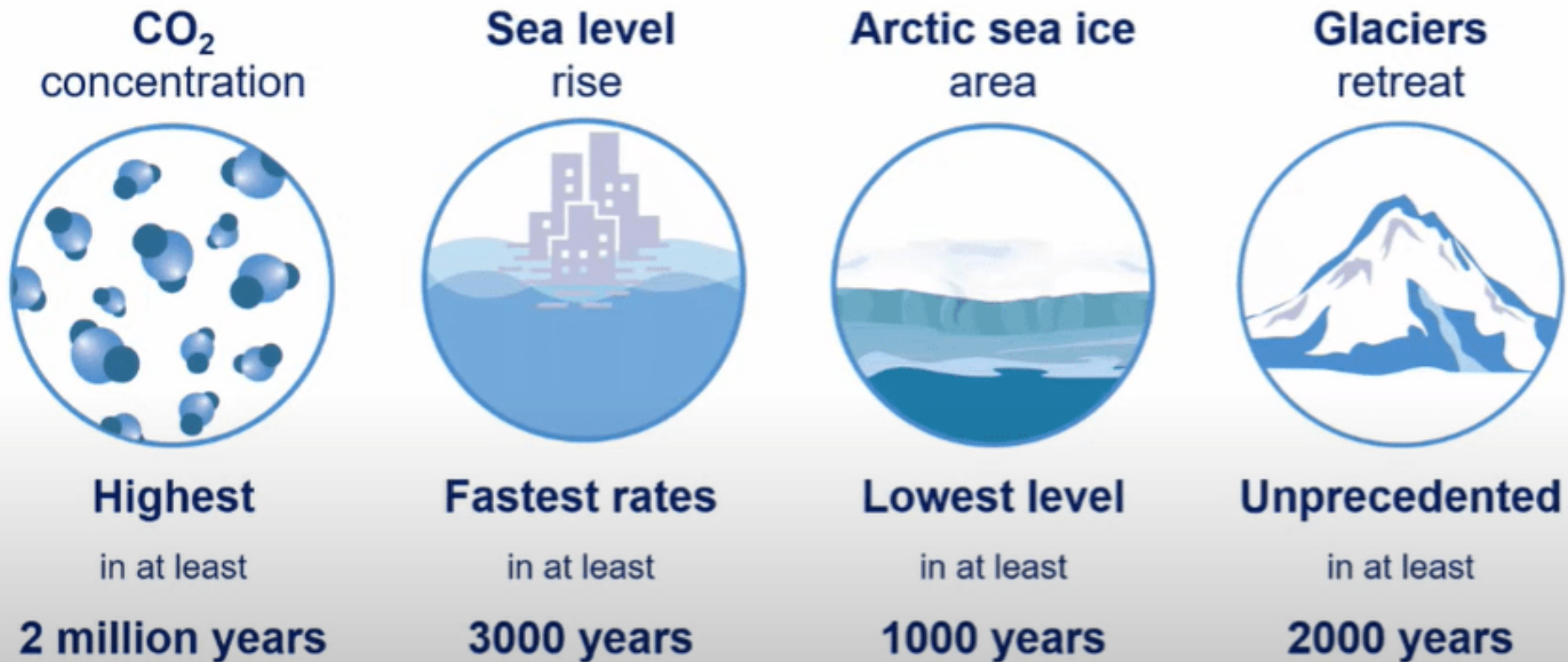


# The Growing Human Cost of Disasters: Disaster Loss

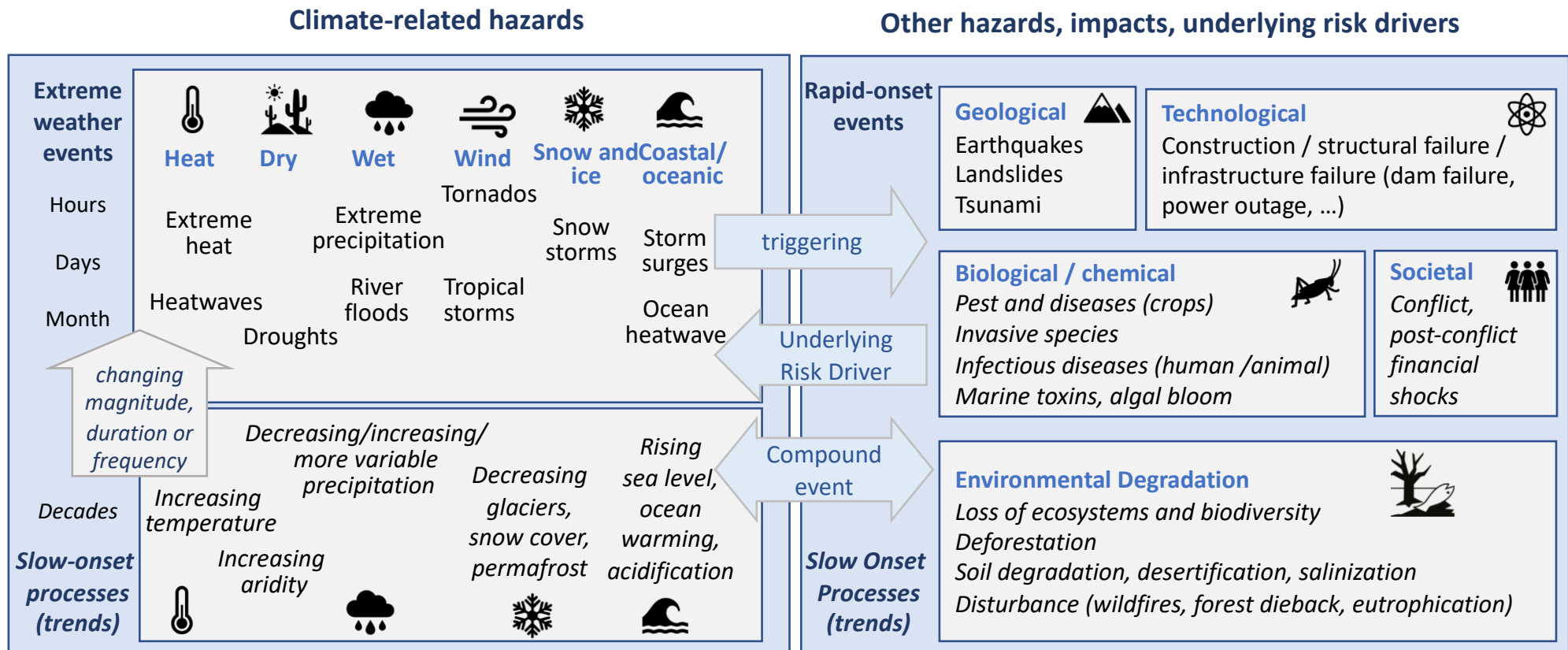




# IPCC AR6 Climate Change 2021: The Physical Science Basis



# Climate change is an underlying risk driver



Climate change as underlying risk driver



# WEF Global Risk Report

## Perceptions of Risk: Top 5 Global Risks in Terms of Likelihood

	1st	2nd	3rd	4th	5th	6th	7th
2021	Extreme weather	Climate action failure	Human environmental damage	Infectious diseases	Biodiversity loss	Digital power concentration	Digital inequality
2020	Extreme weather	Climate action failure	Natural disasters	Biodiversity loss	Human-made environmental disasters		
2019	Extreme weather	Climate action failure	Natural disasters	Data fraud or theft	Cyberattacks		
2018	Extreme weather	Natural disasters	Cyberattacks	Data fraud or theft	Climate action failure		
2017	Extreme weather	Involuntary migration	Natural disasters	Terrorist attacks	Data fraud or theft		
2016	Involuntary migration	Extreme weather	Climate action failure	Interstate conflict	Natural catastrophes		
2015	Interstate conflict	Extreme weather	Failure of national governance	State collapse or crisis	Unemployment		

# WEF Global Risk Report

## Perceptions of Risk: Top 5 Global Risks in Terms of Impact

	1st	2nd	3rd	4th	5th	6th	7th
2021	Infectious diseases	Climate action failure	Weapons of mass destruction	Biodiversity loss	Natural resource crises	Human environmental damage	Livelihood crises
2020	Climate action failure	Weapons of mass destruction	Biodiversity loss	Extreme weather	Water crises		
2019	Weapons of mass destruction	Climate action failure	Extreme weather	Water crises	Natural disasters		
2018	Weapons of mass destruction	Extreme weather	Natural disasters	Climate action failure	Water crises		
2017	Weapons of mass destruction	Extreme weather	Water crises	Natural disasters	Climate action failure		
2016	Climate action failure	Weapons of mass destruction	Water crises	Involuntary migration	Energy price shock		
2015	Water crises	Infectious diseases	Weapons of mass destruction	Interstate conflict	Climate action failure		



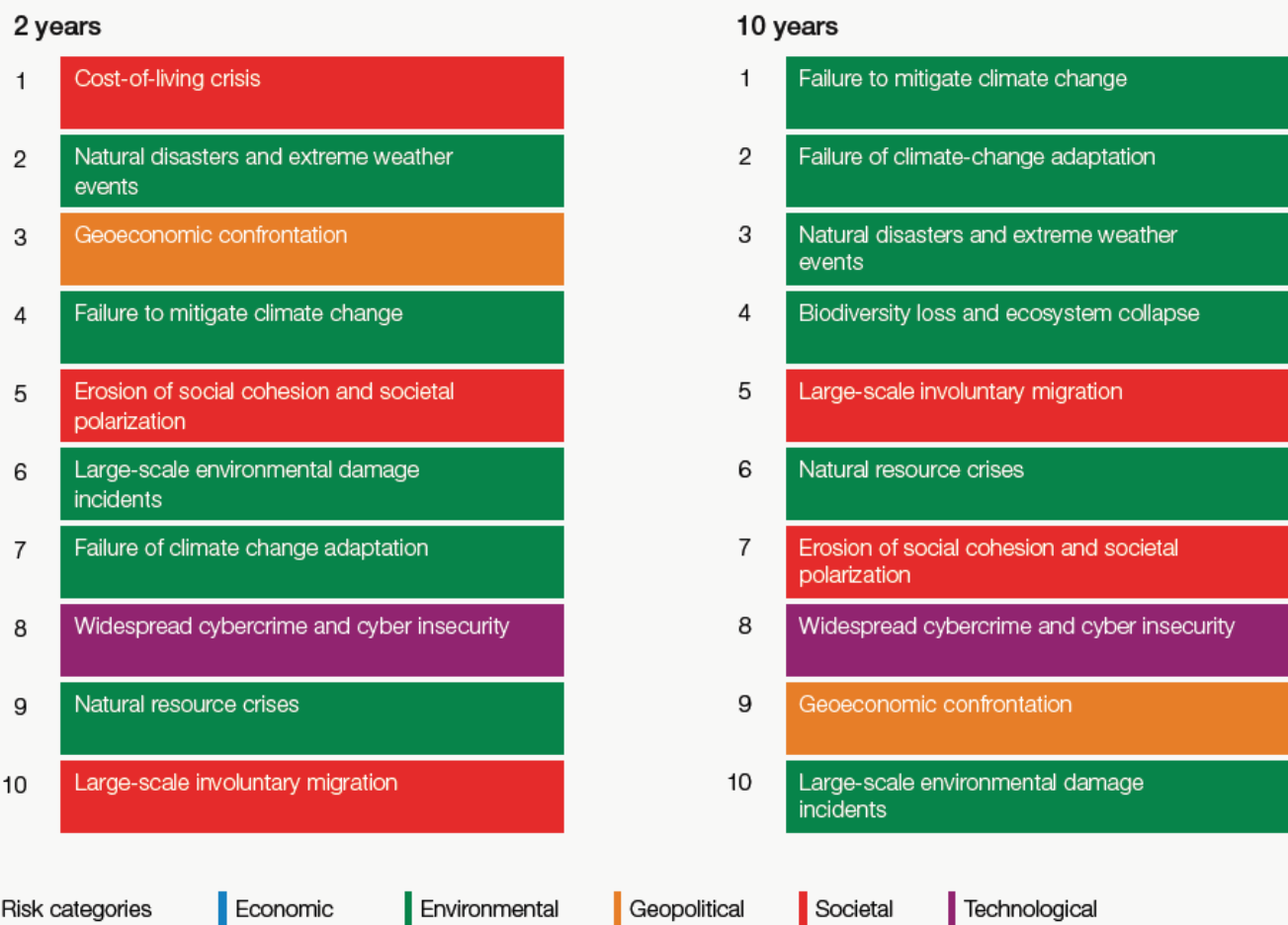
# WEF Global Risk Report

## 2023 – Top 10 Risks

FIGURE A

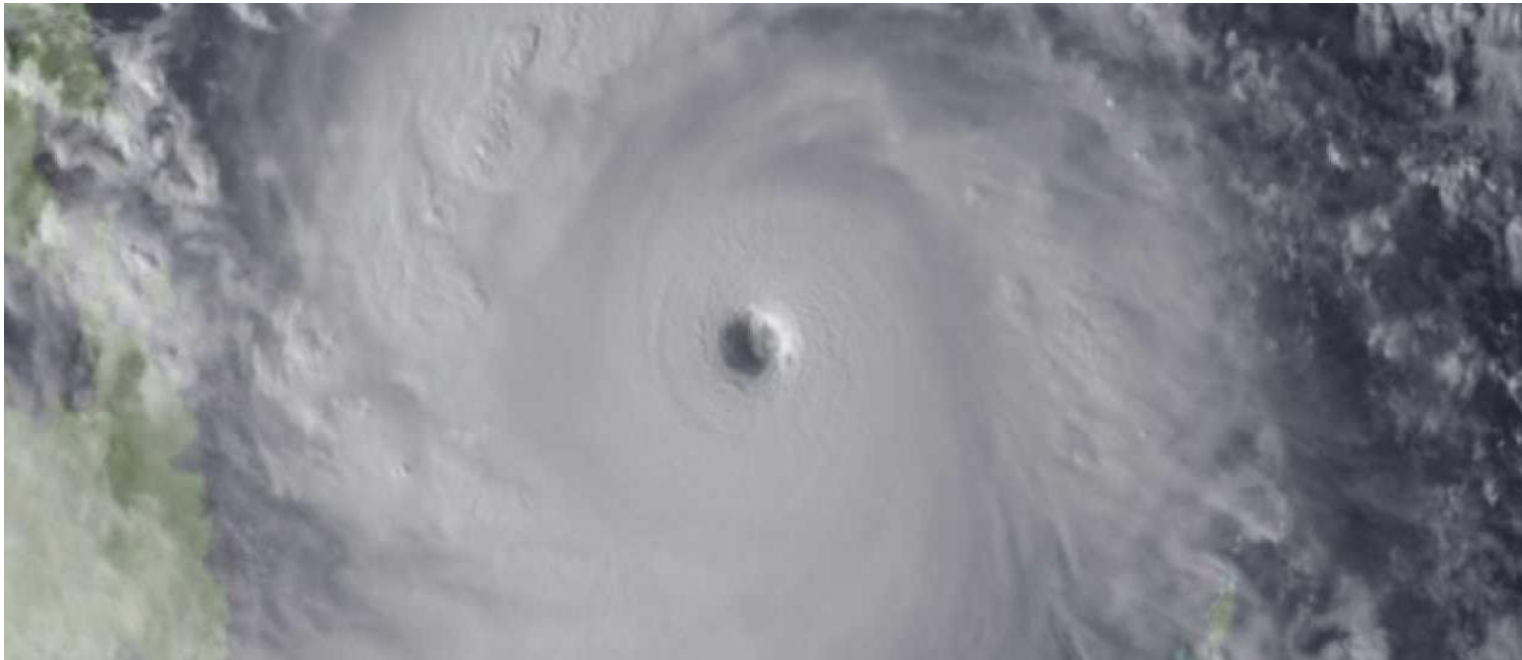
### Global risks ranked by severity over the short and long term

"Please estimate the likely impact (severity) of the following risks over a 2-year and 10-year period"



# Put your answer in the chat

How does climate change affect your community?







**Development  
disrupted**

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# A Changing Environment – Growing Complexity

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- **Intensifying** disaster **trends** & more **frequent** events
- **Resource scarcity** and degradation (land, water, food, energy, biodiversity)
- Increasing risk of “unchecked” **urbanization** coupled with **high exposure** of population and assets in high-risk areas.
- Increasing **governance challenges**, coordination, accountability, legislations, institutional mechanisms, migration, conflict, all affecting human security
- **Equity, poverty, inclusion** – all being fundamental development challenges contributing to vulnerability
- **Climate change** [extreme events, slow onset disasters (drought)]
- **COVID-19**
- Inter-dependency and **complexity of risk drivers**



# Systemic Risk - Multiple Breadbasket Failure

## CURRENT CONTEXT

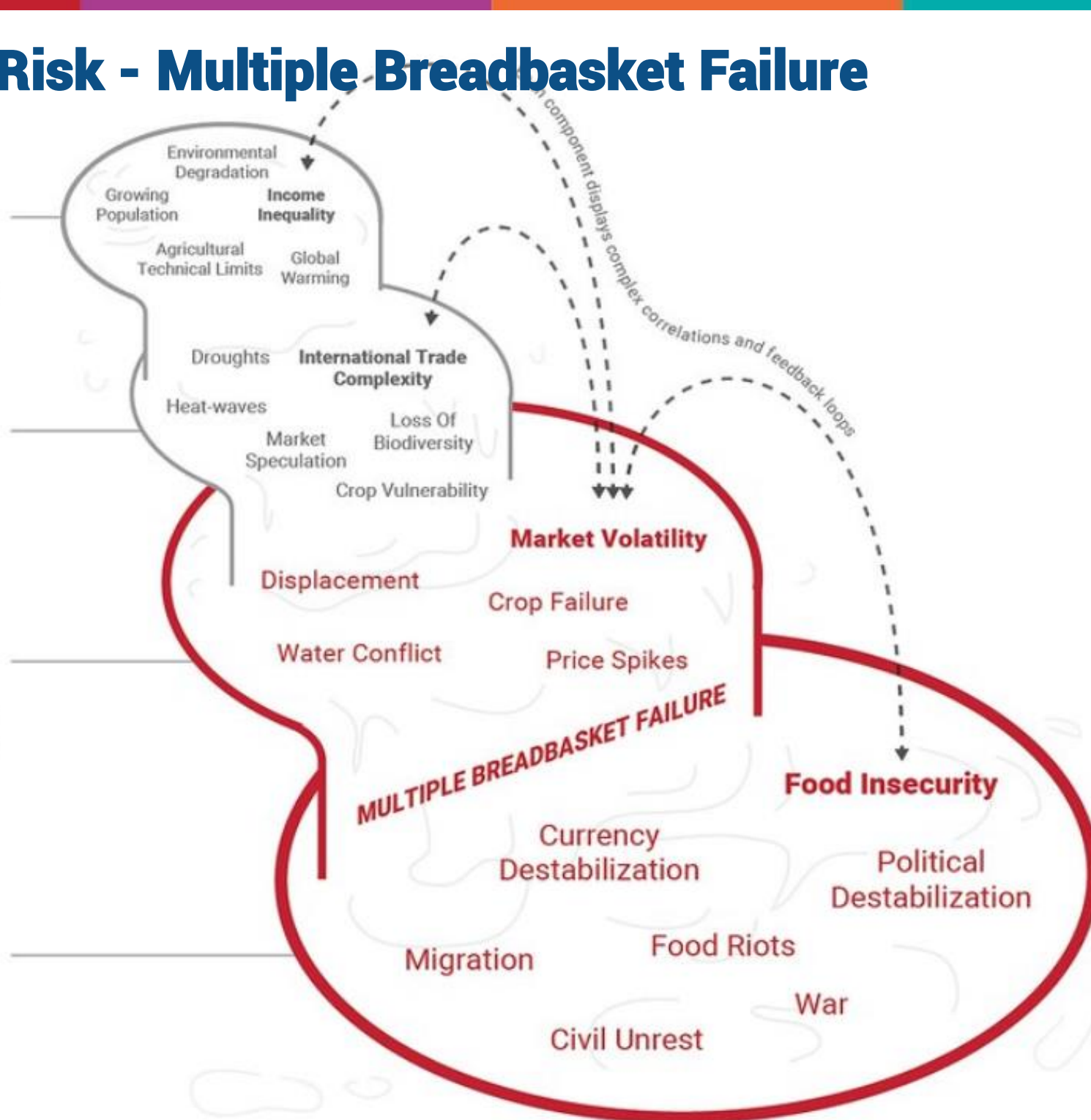
Capacity to absorb negative events is being reduced slowly (e.g. population growth pushing the limits of agricultural technology)

## BUILDING STRESSORS

## SUDDEN AND GRADUAL TIPPING POINTS

An event of great magnitude or multiple failures at the same time could suddenly exceed all remaining capacity

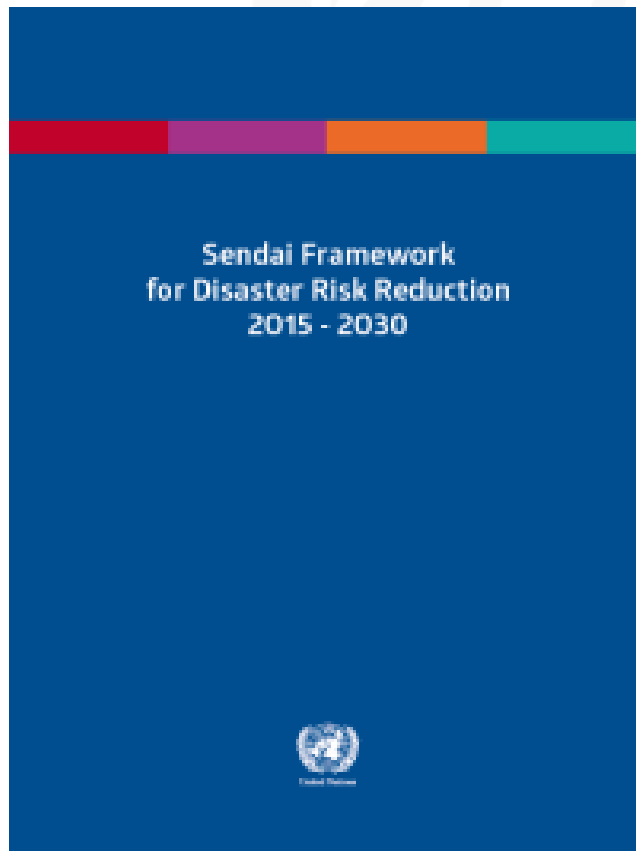
## SYSTEMIC FAILURE



# The Sendai Framework for Disaster Risk Reduction 2015-2030

## Intended outcome:

*The substantial **reduction of disaster risk and losses** in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries.*



- **Adopted at the Third UN World Conference on Disaster Risk Reduction** on March 18, 2015
- **Endorsed by the UN General Assembly** on May 15, 2015.
- **15-year**, voluntary, non-binding agreement with **4 Priorities for Action** and **7 Global Targets**
- Recognizes that the **State has the primary role** to reduce disaster risk but that responsibilities are to be **shared with other stakeholders including local government and the private sector.**



# 7 GLOBAL TARGETS

## Reduce



**Mortality/  
global population**

2020-2030 Average << 2005-2015 Average



**Affected people/  
global population**

2020-2030 Average << 2005-2015 Average



**Economic loss/  
global GDP**

2030 Ratio << 2015 Ratio



**Damage to critical infrastructure  
& disruption of basic services**

2030 Values << 2015 Values

## Increase



**Countries with national  
& local DRR strategies**

2020 Value >> 2015 Value



**International  
cooperation  
to developing countries**

2030 Value >> 2015 Value



**Availability and access  
to multi-hazard early warning  
systems & disaster risk  
information and assessments**

2030 Values >> 2015 Values



**Priority 1 Understanding disaster risk**

*Policies and practices for DRR should be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment.*

**Priority 2 Strengthening disaster risk governance to manage disaster risk**

*Disaster risk governance at the national, regional and global levels is of great importance for an effective and efficient management of disaster risk.*

**Priority 3 Investing in disaster risk reduction for resilience**

*Public and private investment in DRR are essential to enhance the economic, social, health & cultural resilience of persons, communities, countries, their assets, as well as environment*

**Priority 4 Enhancing disaster preparedness for effective response, and to “Build Back Better” in recovery, rehabilitation and reconstruction**

*Strengthened disaster preparedness for response, recovery, rehabilitation and reconstruction are critical to build back better*

National and local dimensions

Regional and global dimensions

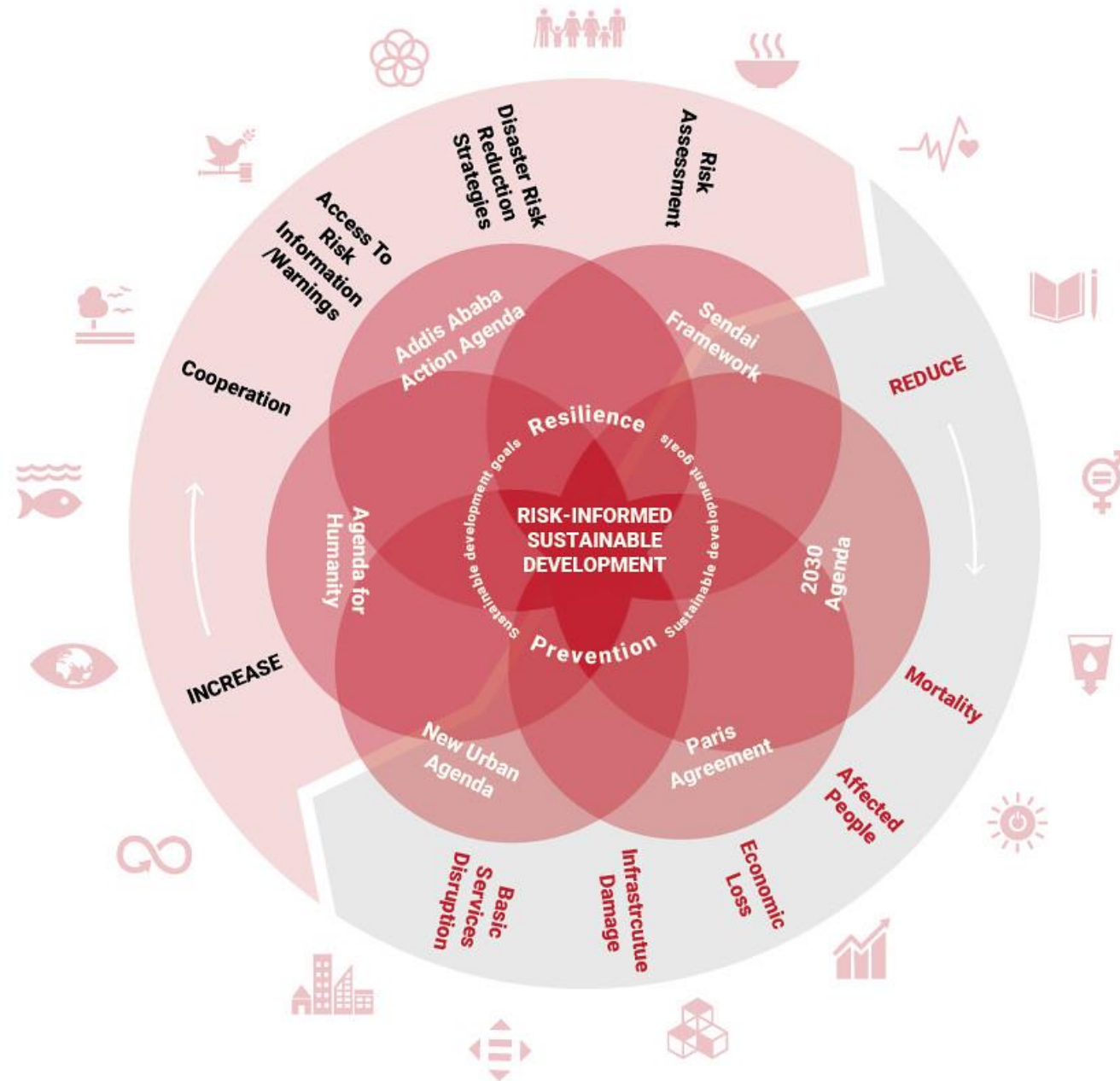


# Towards System Risk Governance

## “Innovation curve” – from destructive to regenerative approaches



# Risk-informed Sustainable Development: Integrated Risk Governance





# Key Resources

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**Disaster Risk Reduction Terminology** <https://www.undrr.org/terminology>

**Sendai Framework for Disaster Risk Reduction 2015-2030, UN**  
<https://www.undrr.org/implementing-sendai-framework/what-sf>

**The Global Assessment Report**  
<https://gar.undrr.org>

**Understanding Disaster Risk** <https://www.preventionweb.net/understanding-disaster-risk>

**The Global Risks Report 2023, 18th Edition, World Economic Forum**  
<https://www.weforum.org/reports/the-global-risks-report-2023>

**Unbreakable, GFDRR, World Bank**  
[https://www.gfdr.org/sites/default/files/publication/Unbreakable\\_FullBook\\_Web-3.pdf](https://www.gfdr.org/sites/default/files/publication/Unbreakable_FullBook_Web-3.pdf)

**Words Into Action, including National and Local DRR Strategies, Disaster Displacement and Nature-based Solutions** <http://www.preventionweb.net/sendai-framework/words-into-action>

**View all UNDRR GETI National Workshop Recommended Reading and Sources on PreventionWeb:**  
<https://www.preventionweb.net/collections/geti-national>

# Thank You

**UNDRR**

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