



INTERNATIONAL CONFERENCE ON

Ensuring Industrial Safety

*The role of government, regulations,
standards and new technologies*

Industrial safety and the 2030 Agenda for Sustainable Development

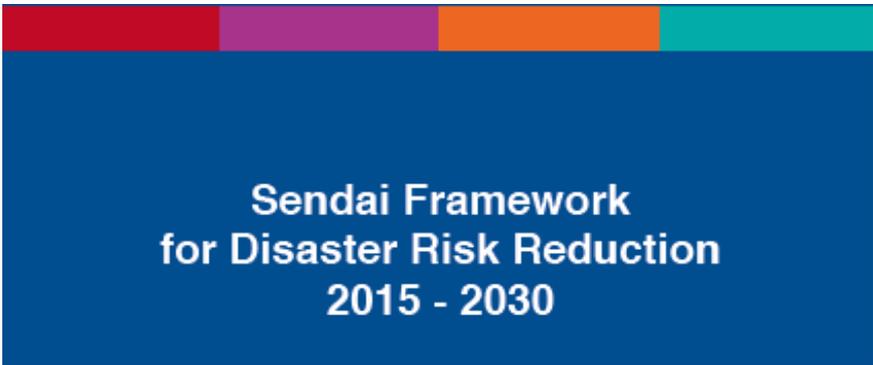
Marc Gordon
UN Office for Disaster Risk Reduction

30
31 May 2019

Vienna International Centre
Conference Room 1

Vienna, Austria



The logo for the Sendai Framework for Disaster Risk Reduction 2015-2030. It features a dark blue rectangular background with the text "Sendai Framework for Disaster Risk Reduction 2015 - 2030" in white. Above the blue background is a horizontal bar divided into four colored segments: red, purple, orange, and teal.

Sendai Framework
for Disaster Risk Reduction
2015 - 2030

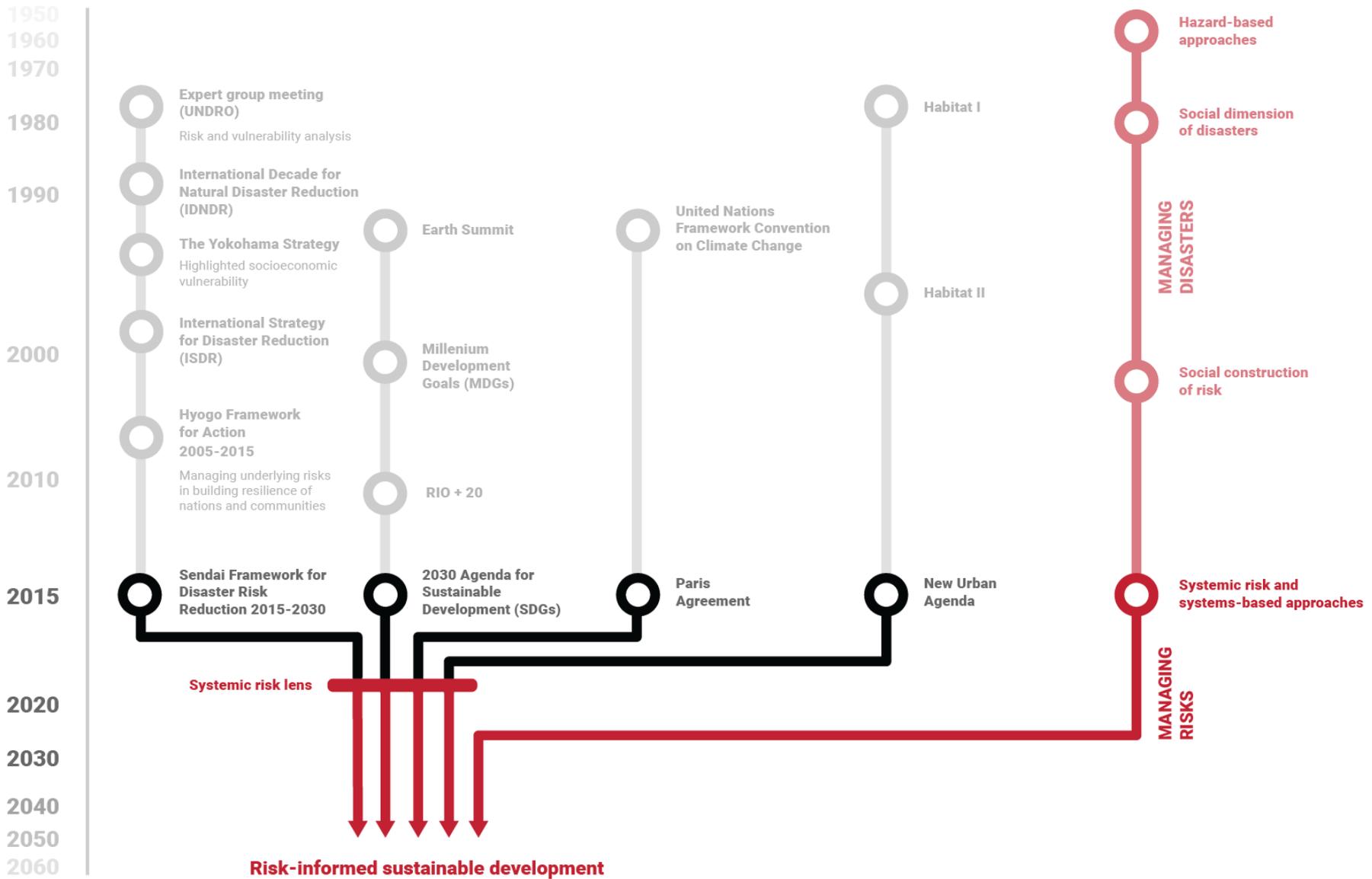
The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries.

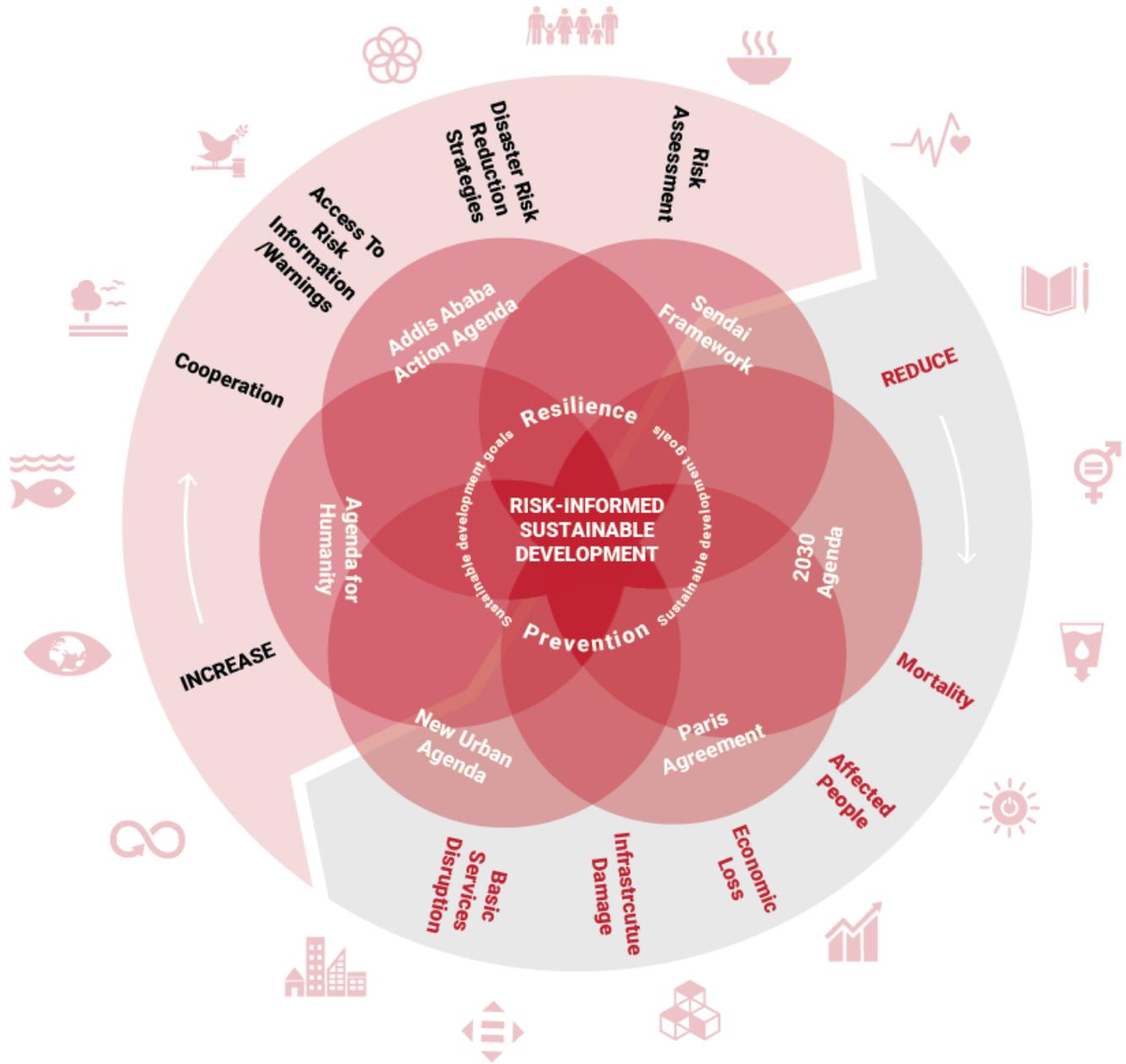
Paragraph 15.

....disasters caused by natural or man-made hazards, as well as related environmental, technological and biological hazards and risks.

...aims to guide the multi-hazard management of disaster risk in development at all levels as well as within and across all sectors







Multi-Purpose Data, Integrated Monitoring & Reporting



Target

Goal / Target



Global Target (a) - Substantially reduce global disaster *mortality* by 2030, aiming to lower average per 100,000 global mortality between 2020-2030 compared to 2005-2015.

| | |
|---------------------------|--|
| A-1 (A-2 + A-3) | Number of deaths and missing persons attributed to disasters per 100,000 population. |
| A-2 | Number of deaths attributed to disasters, per 100,000 population. |
| A-3 | Number of missing persons attributed to disasters, per 100,000 population. |

Global Target (b) - Substantially reduce the number of *affected people* globally by 2030, aiming to lower the average global figure per 100,000 between 2020-2030 compared to 2005-2015.

| | |
|---------------------------------------|--|
| B-1 (B-2, B-3, B-4, B-5) | Number of directly affected people attributed to disasters, per 100,000 population |
| B-2 | Number of injured or ill people attributed to disasters, per 100,000 population |
| B-3 | Number of people whose damaged dwellings were attributed to disasters. |
| B-4 | Number of people whose destroyed dwellings were attributed to disasters. |
| B-5 | Number of people whose livelihoods were disrupted or destroyed, attributed to disasters. |

Global Target (c) - Reduce *direct disaster economic loss* in relation to global gross domestic product (GDP) by 2030.

| | |
|-----------------------------|--|
| C-1 (C-2 to C-6) | Direct economic loss attributed to disasters in relation to global gross domestic product |
| C-2 | Direct agricultural loss attributed to disasters |
| C-3 | Direct economic loss due to all other damaged or destroyed productive assets attributed to disasters . |
| C-4 | Direct economic loss in the housing sector attributed to disasters. |
| C-5 | Direct economic loss resulting from damaged or destroyed critical infrastructure attributed to disasters . |
| C-6 | Direct economic loss due to cultural heritage damaged or destroyed attributed to disasters . |

Global Target (d) - Substantially reduce *disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030.*

| | |
|----------------------------|--|
| D-1 (D-2 to D-4) | Damage to critical infrastructure attributed to disasters. |
| D-2 | Number of destroyed or damaged health facilities attributed to disasters. |
| D-3 | Number of destroyed or damaged educational facilities attributed to disasters. |
| D-4 | Number of other destroyed or damaged critical infrastructure units and facilities attributed to disasters. |
| D-5 (D-6 to D-8) | Number of disruptions to basic services attributed to disasters. |
| D-6 | Number of disruptions to educational services attributed to disasters. |
| D-7 | Number of disruptions to health services attributed to disasters. |
| D-8 | Number of disruptions to other basic services attributed to disasters. |



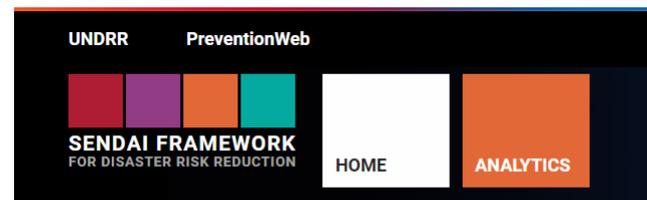
Global Assessment Report
on Disaster Risk Reduction

2019

United Nations Office for Disaster Risk Reduction

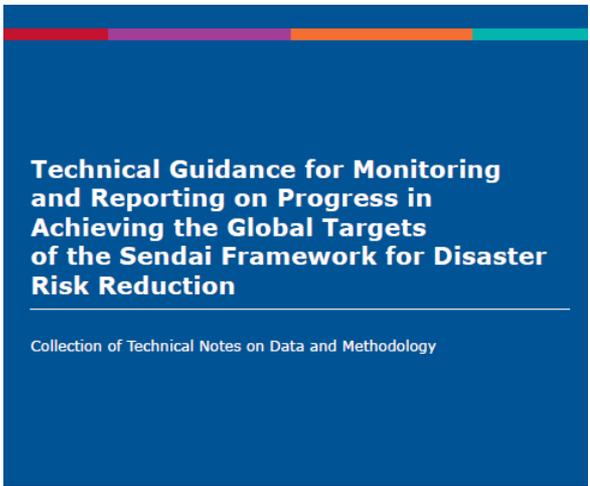


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GLOBAL TARGETS*

| TARGET A - D | BASELINE 2005 - 2014 | ≡ | DECADE 2009 - 2018 | PREVIOUS YEAR 2017 | ≡ | SELECTED YEAR 2018 |
|--|----------------------------|-----------------|--------------------------|--------------------------|--------------|--------------------------|
| A MORTALITY A-1: Number of deaths and missing persons attributed to disasters, per 100,000 population | 0.57 | ↓ -2.21% | 0.55 | 0.42 | ↑ 34.21% | 0.57 |
| B PEOPLE AFFECTED B-1: Number of directly affected people attributed to disasters, per 100,000 population | 472.05 | ↑ 209.98% | 1,463.28 | 1,414.29 | ↑ 113.11% | 3,014.01 |
| C ECONOMIC LOSS C-1: Direct economic loss attributed to disasters in relation to global gross domestic product | 1.07e-3 | ↓ -18.35% | 8.72e-4 | 7.31e-4 | ↑ 319.11% | 3.06e-3 |
| D CRITICAL INFRASTRUCTURE & SERVICES D-1: Damage to critical infrastructure attributed to disasters | 61.22 | ↓ -49.96% | 30.63 | 10.26 | ↑ 126.85% | 23.28 |
| D-5: Number of disruptions to basic services attributed to disasters (compound indicator) | 0.24 | ↑ 10,021.29% | 23.9 | 124.39 | ↓ -97.7% | 2.86 |



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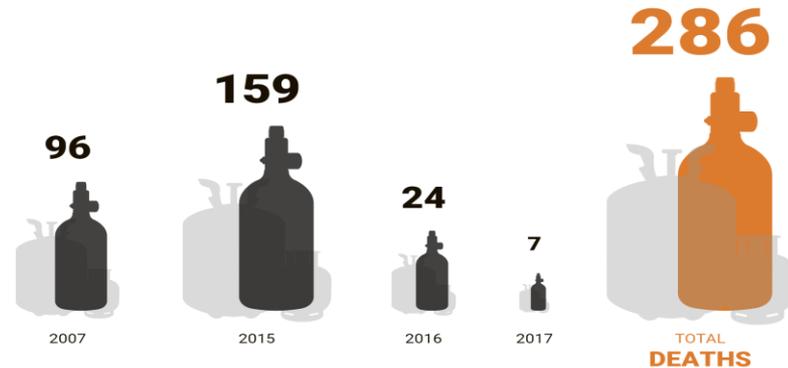
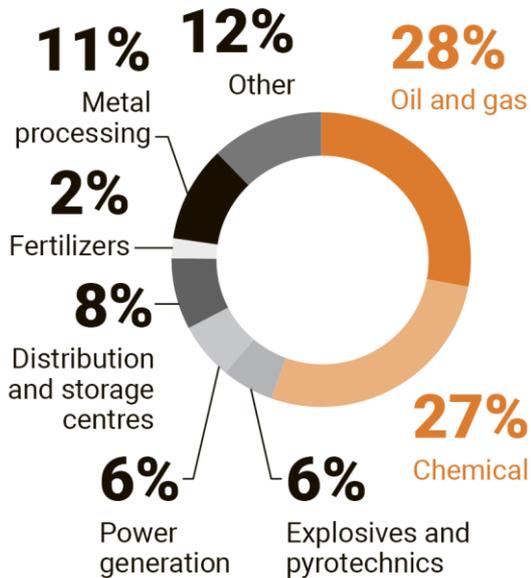


INCIDENTS

DEATHS



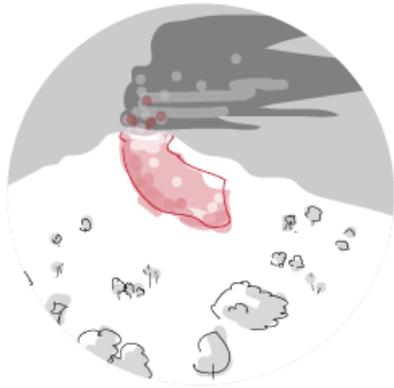
Chemical incidents in the media by continent
(1 Oct. 2016 - 30 Sept. 2017)



Source: UNDRR with data from
Citimfonline 2016

Distribution of high hazard, fixed facility sites in EU and EEA countries - 2014

| Type of impact data | Strengths and limitations |
|--|---|
| Human health | Historically, fatalities are identified and recorded. Injuries are also usually quantified, but the precision about the number and severity increases with the severity of the accident varies. |
| Environmental | Environmental impacts are reported using a variety of denominations to quantify the impact (cubic metres, length of a river, duration of the power outage, etc.) and rarely include secondary effects or costs of clean-up and restoration or economic costs from loss of the resources. |
| Property damage | Data on cost of on-site property damage is often provided, but not as reliably as human health impacts and usually only for insured losses. Off-site property damage, when it has occurred, is frequently excluded from reports, rarely appearing in either accident databases or insurance company statistics. Sometimes, the media will make an estimate for a particularly prominent accident. For large incidents, the data can sometimes be found in annual insurance reports. |
| Evacuation and shelter-in-place | This data is frequently provided as estimates, it is often sufficient for estimating severity of this aspect but cannot be easily summed for aggregating effects of major accidents over a period of time. |
| Social disruption | Disruptions to roads and public utilities are among other impacts that generally are ill-defined in terms of what they include and how they are quantified (hours of disruption, population size disrupted, etc.). |
| Economic | Temporary and permanent shutdown of product lines and sites are a significant economic impact of many accidents. This data is usually provided only in investigation reports and the media. |
| Long-term health and social | These effects may include injuries and/or acute exposures with long-term effects, mental health impacts, as well as long-term effects on the local economy and social life. These effects can be observed only long after an accident and could not easily be captured in an accident investigation or analysis report. |



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



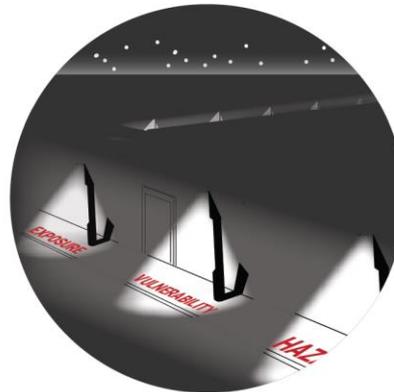
Risk is the combination of **hazard, exposure** and **vulnerability**



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



Understanding risk is more than just understanding hazards



Linking an understanding of multiple hazards, plus exposure and vulnerability gives a clearer picture of risk



Interconnecting all our knowledge is complex, but the better linked the data, the better the interconnected nature of risk is explained