

# Manual on the Basic Set of Environment Statistics

## Sub-component 4.1: Natural Extreme Events and Disasters

UNECE and ECLAC



STATISTICS

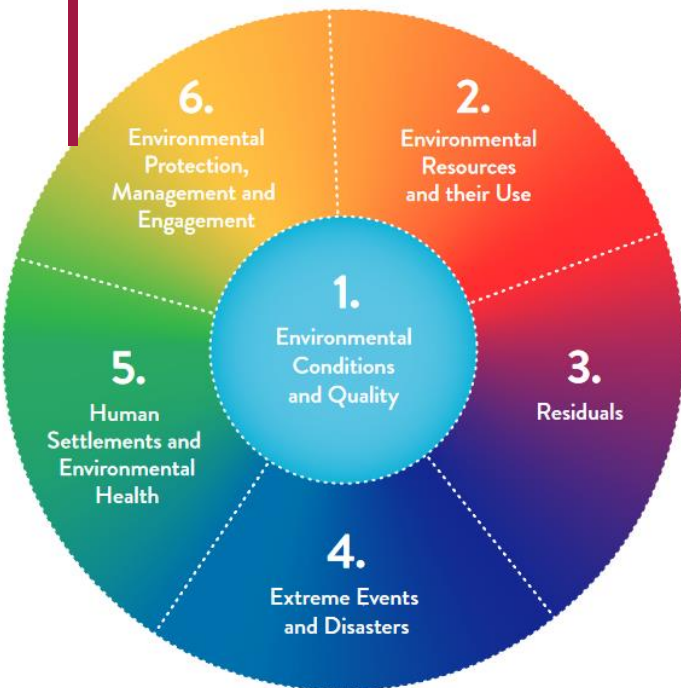


# What can be found in FDES component 4, what is covered by the methodological sheet?

Occurrence and impact of extreme events and disasters



## STATISTICS



### Content of the methodological sheet

Subcomponent 4.1	Natural Extreme Events and Disasters
Topic 4.1.1	Occurrence of natural extreme events and disasters
Topic 4.1.2	Impact of natural extreme events and disasters

Subcomponent 4.2	Technological Disasters
Topic 4.2.1	Occurrence of technological disasters
Topic 4.2.2	Impact of technological disasters

Questions to EGES:

1. Should the methodological sheet also include subcomponent 4.2
2. Should the methodological sheet also include subcomponent 6.3 (Extreme Event Preparedness and Disaster Management)?

# Statistics in Sub-component 4.1: Natural Extreme Events and Disasters



## STATISTICS

	Statistics and Related Information	Category of Measurement
a.	Occurrence of natural extreme events and disasters	
	1. <b>Type of natural extreme event and disaster</b> (geophysical, meteorological, hydrological, climatological, biological)	Description
	2. <b>Location</b>	Location
	3. Magnitude (where applicable)	Intensity
	4. Date of occurrence	Date
	5. Duration	Time period
a.	People affected by natural extreme events and disasters	
	1. <b>Number of people killed</b>	Number
	2. Number of people injured	Number
	3. Number of people homeless	Number
	4. Number of people affected	Number
b.	<b>Economic losses due to natural extreme events and disasters</b> (e.g., damage to buildings, transportation networks, loss of revenue for businesses, utility disruption)	Currency
c.	Physical losses/damages due to natural extreme events and disasters (e.g., area and amount of crops, livestock, aquaculture, biomass)	Area, Description, Number
d.	Effects of natural extreme events and disasters on integrity of ecosystems	
	1. <i>Area affected by natural disasters</i>	Area
	2. <i>Loss of vegetation cover</i>	Area
	3. <i>Area of watershed affected</i>	Area
	4. <i>Other</i>	Description
e.	<i>External assistance received</i>	Currency

# Contents of the Manual (sub-component 4.1)



## STATISTICS

1. Statistics in Sub-component 4.1: Natural Extreme Events and Disasters
2. Introduction/Relevance
3. Definitions and description of the statistics
  - 3A. Concepts used in the Sendai Framework for Disaster Risk Reduction
  - 3B. Concepts used in the FDES
  - 3C. Occurrence of natural extreme events and disasters (Topic 4.1.1)
  - 3D. Impact of natural extreme events and disasters (Topic 4.1.2)
    - 3D1. Timeframes of hazards
4. International sources and recommendations
  - 4A. Classifications and groupings
    - 4A1. Classification of hazards
  - 4B. Reference to international statistical recommendations, frameworks and standards
  - 4C. Sources of global and regional environment statistics and indicators series
5. Data collection and sources of data
6. Uses and dissemination
  - 6A. Potential presentation/dissemination formats
  - 6B. SEEA accounts/tables that use these statistics
  - 6C. Commonly used indicators that incorporate these statistics
  - 6D. SDG indicators that incorporate these statistics

## Chapter 2: Introduction / Relevance

What can you find there, what are the issues for discussion?



### STATISTICS

What you can find there:

- Policy relevance (SDG, Sendai, Paris Agreement, national DRM etc.)
- (recent) international indicator lists, guidelines, methodological documents, e.g.
  - Report of the Open-ended intergovernmental expert working group on indicators and terminology relating to disaster risk reduction (UNDRR, 2016)
  - Technical guidance for monitoring and reporting on progress in achieving the global targets of the Sendai Framework (UNDRR, 2018)
  - Disaster-related Statistics Framework (DRSF) (ESCAP, 2018)
  - CES Recommendations on the Role of Official Statistics in Measuring Hazardous Events and Disasters (UNECE, 2019)
  - Work of the Statistical Conference of the Americas on disaster-related statistics (ECLAC, ongoing)

What are the issues for discussion?

- “Old” references, such as CRED-EMDAT, should these be kept?

# Chapter 3: Definitions and description of the statistics

What can you find there, what are the issues for discussion?



## STATISTICS

### What you can find there:

- Discussion of terms and concepts used in Sendai Framework and in the FDES and how they could be aligned with each other, e.g.:
  - “Natural extreme events” (FDES term) are a subset of “natural hazards” (Sendai Framework term)
  - Replacing the term “natural disaster” with “disasters associated to natural hazards”
- Explanation of the statistics of FDES topic 4.1.1 (occurrence of natural events and disasters) and FDES topic 4.1.2 (impact of natural extreme events and disasters), with references to Sendai Framework (where applicable), e.g.:
  - Use of IRDR peril classification of hazards
  - Reference given to related Sendai FW indicators
  - Additional statistics that might be useful (e.g. “number of missing persons attributed to disasters”, “number of people evacuated”)
  - Sendai FW definitions applied where useful (e.g. “number of people affected” the Sendai FW definition for “directly affected people” is used)
- Discussion of timeframes of hazards (based on guidelines for Sendai FW)

### What are the issues for discussion?

- Definition for “loss of vegetation cover” needed
- Is the alignment with the Sendai FW useful

Hazard	Cause of death	Time-span or recommended cut-off period	Source of data
Drought	Infectious diseases, malnutrition	6 months after emergency state ceases, and Yearly cut-offs for multi-year events	Ministry of Health, Disaster management offices, Relief organizations,
Flood	Drowning, trauma	4 weeks after event	Ministry of Health, Disaster management offices, Relief organizations
Earthquake	Trauma, fire	4 weeks after event	Ministry of Health, Disaster management offices, Relief organizations
Epidemic	Infectious disease	Period when no new cases are recorded (disease specific e.g. Ebola 42 days based on incubation period)	Ministry of Health or health authority
...	...	...	...

# Chapter 4: International sources and recommendations

## What can you find there, what are the issues for discussion?



### STATISTICS

What you can find there:

- Classification of hazards according to IRDR (recommended by SF technical guidelines)
- Explanation of recent most relevant international reference documents:
  - [Technical Guidance for Monitoring and Reporting on Progress in Achieving the Global Targets of the Sendai Framework for Disaster Risk Reduction \(UNDRR, 2017\)](#): Supports countries in the operationalization of the global Sendai Framework Indicators.
  - [Disaster-related Statistics Framework \(ESCAP, 2018\)](#): Provides recommendations on methodologies for how to apply internationally agreed concepts and terminologies to production of official statistics.
  - **Recommendations on the role of official statistics in measuring hazardous events and disasters** (draft, UNECE 2019): Clarification of role of official statistics in measuring HED
- References to older guidelines which are still widely used:
  - [CRED Emergency Events Database \(CRED EM-DAT\)](#)
  - [United Nations Internationally Agreed Glossary of Basic Terms Related to Disaster Management \(UN, 1992\)](#)
  - [UNISDR Terminology on Disaster Risk Reduction \(UNDRR, 2009\)](#)
  - [Handbook for Disaster Assessment \(ECLAC, 2014\)](#)
- Sources of global and regional environment statistics and indicators series: CRED EMD-DAT and Sendai Framework Monitor

What are the issues for discussion?

- IRDR classification?
- Should references to older guidelines be maintained?

# Chapter 5: Data collection and sources of data

What can you find there, what are the issues for discussion?



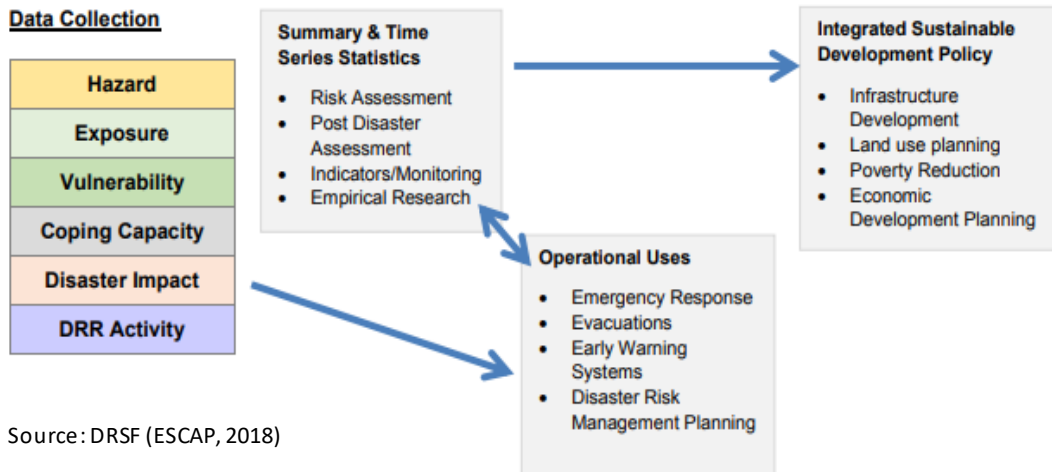
## STATISTICS

What you can find there:

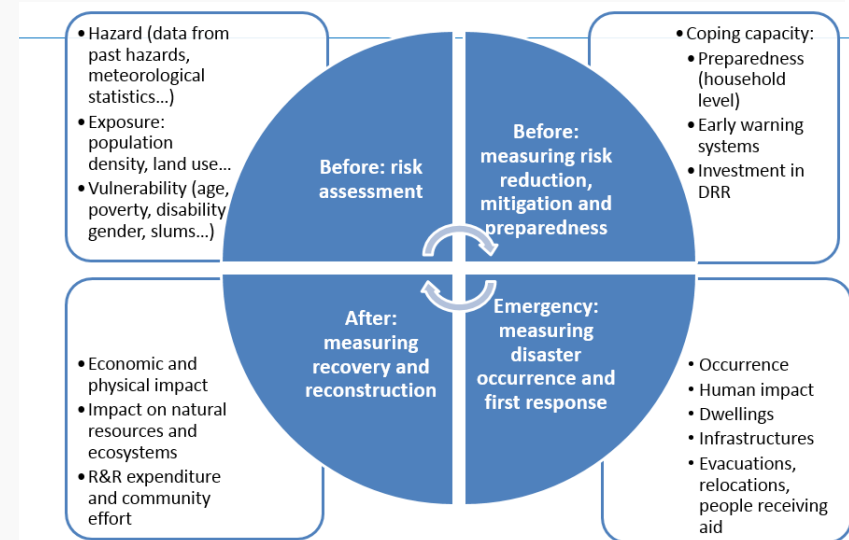
- Scope of statistics (based on ESCAP DRSF)
- Statistical unit
- Measurement units
- Data sources
- Examples for use of remote-sensing data
- Data aggregation (temporal and spatial aspects)

What are the issues for discussion?

- How to present the scope of statistics? Options:



Source: DRSF (ESCAP, 2018)



Source: ECLAC based on *Disaster-related Statistics Framework*, Asia-Pacific Expert Group on Disaster-related Statistics, UNESCAP, May 2018.



# Chapter 6: Uses and dissemination

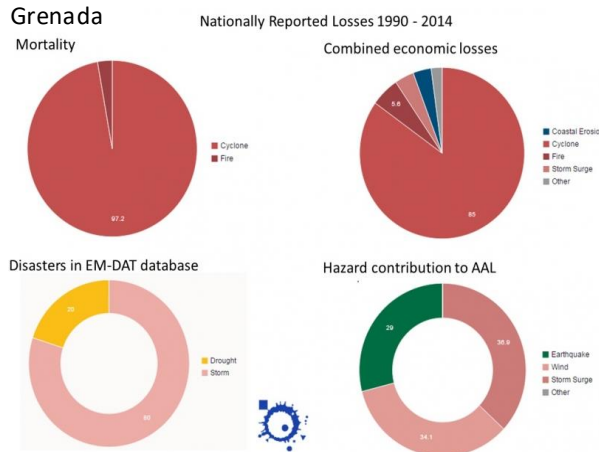
## What can you find there, what are the issues for discussion?



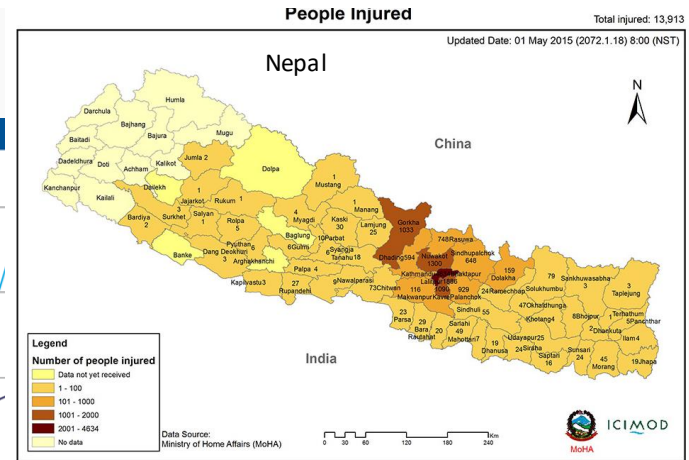
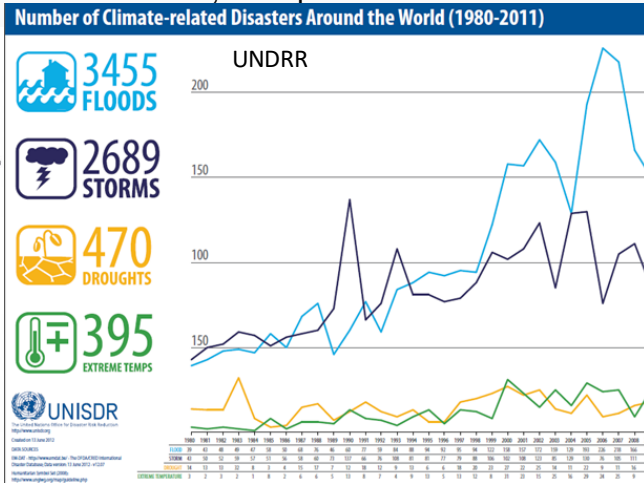
### STATISTICS

What you can find there:

- Potential presentation/dissemination formats, examples from around the world



CRED EM-DAT (Feb. 2015) : The OFDA/CRED - International Disaster Database www.emdat.be Université catholique de Louvain Brussels - Belgium



- SEEA accounts/tables that use these statistics: not directly, but SEEA can provide basis for statistics on direct losses of environmental assets, degradation of ecosystems and related ecosystem services.
- Commonly used indicators that incorporate these statistics: Sendai Framework and SDG Indicators, people killed, missing or affected, economic impacts as proportion of GDP, etc.

What are the issues for discussion?

- Any comments on the selected examples and other contents of the chapter?

### STATISTICS



#### Daniel Clarke (ESCAP, personal comments):

1. Important to refer to terminology developed in the context of the Sendai FW. Mention adoption by UNGA)
2. Many terms (e.g. definition of a disaster) apply to SDGs and Sendai FW, but are useful for broader applicability.
3. Add a clarification regarding the use of the terms “hazard” and “exposure”. They are always linked.
4. Even if the term “hazardous event” is part of the UNGA approved terminology, sometimes its difficult (or impossible) to describe a hazard as a discrete event (in terms of timing or location).
5. time-span or cut-off period recommendations for recording deaths: requires that there is a start date or timing to the disaster. Currently, there are no global recommendations for determining the beginning of a disaster (in terms of timing). In DRSF, we recommended using the moment of initiation of an emergency (which could happen at any, e.g. local, scale).
6. 4.1.2.a.4 (Number of people affected) is technically a count of number of impacts, not number of people. This is because the same person could be affected in more than one way. In some cases, both measures (number of impacts and number of people) might be interesting. Counting number of people would require an adjustment for double-counting.

Suriname: Provided data and examples on natural disasters, people injured/dead, homes damaged

**Thank you very much for your attention!**