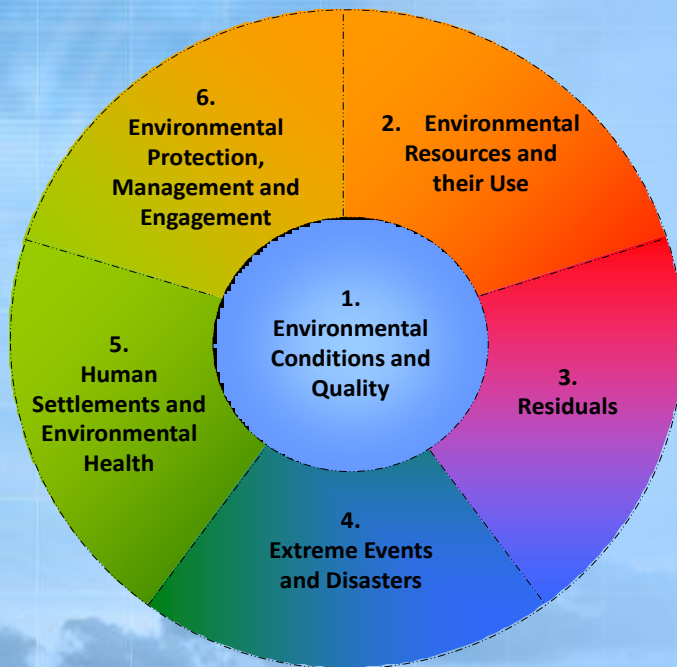
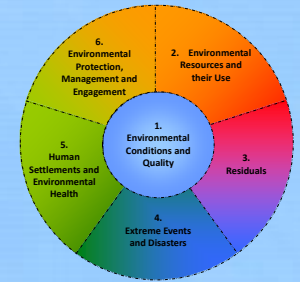


Components, sub-components and statistical topics of the FDES 2013

Component 4: Extreme Events and Disasters



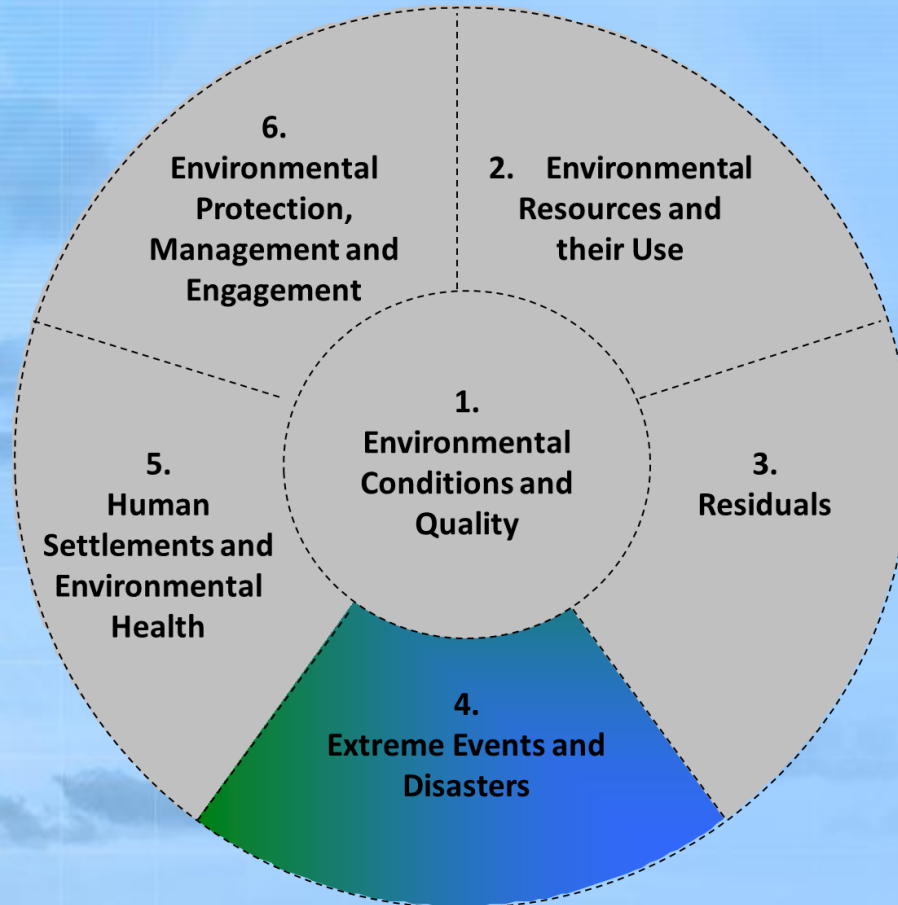
Workshop on Environment Statistics in support of the implementation of the Framework for the Development of Environment Statistics (FDES 2013) (Lomé, Togo, 19-23 October 2015)



- This presentation has been elaborated by the Environment Statistics Section of the United Nations Statistics Division.
- It is based on Chapter 3 of the Framework for the Development of Environment Statistics (FDES 2013).



Component 4: Extreme Events and Disasters





Contents of Component 4: Extreme Events and Disasters

- ❖ This component organizes statistics on the occurrence of extreme events and disasters and their impacts on human wellbeing and the infrastructure of the human sub-system.
- ❖ The most common data sources are national and sub-national authorities responsible for:
 - disaster management and assistance;
 - emergency management and response agencies;
 - insurance companies;
 - optical and radar satellite operators for satellite information;
 - seismic monitoring and research centres.





Component 4: Overview

Component 4 Extreme Events and Disasters	Sub-Component 4.1 Natural Extreme Events and Disasters (2 topics, 16 statistics)	Topic 4.1.1: Occurrence of natural extreme events and disasters Topic 4.1.2: Impact of natural extreme events and disasters
	Sub-Component 4.2 Technological Disasters (2 topics, 15 statistics)	Topic 4.2.1: Occurrence of technological disasters Topic 4.2.2: Impact of technological disasters



Sub-Component 4.1: Natural Extreme Events and Disasters

Sub-Component 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





Sub-Component 4.1: Natural Extreme Events and Disasters

- ❖ This sub-component organizes statistics on the frequency and intensity of extreme events and disasters deriving from natural phenomena, as well as their impact on human lives and habitats and the environment as a whole.
- ❖ Statistics on natural extreme events and disasters are important to policy makers, analysts and civil society not only to assess the impact of an ongoing disaster, but also to monitor the frequency, intensity and impact of disasters over time.
- ❖ Extreme Event: An extreme event is one that is rare within its statistical reference distribution at a particular location. It is normally as rare as or rarer than the 10th or 90th percentile.
- ❖ Disaster: A disaster is often described as a result of exposure to an extreme event. For inclusion in this sub-component, a disaster should be categorized using the same criteria as the CRED Emergency Events Database (EMDAT). It must thus meet at least one of the following criteria:
 - Ten (10) or more people reported killed;
 - One hundred (100) or more people reported affected;
 - Declaration of a state of emergency; or
 - Call for international assistance.



Sub-Component 4.1: Natural Extreme Events and Disasters

Topic 4.1.1: Occurrence of natural extreme events and disasters

- ❖ The types of statistics included in this topic may be, but are not limited to, the type of natural disaster, location, magnitude, date of occurrence and duration.





Sub-Component 4.1: Natural Extreme Events and Disasters

Topic 4.1.2: Impact of natural extreme events and disasters

- ❖ This topic should include information on the impact of a natural extreme event or disaster.
- ❖ Impact can be measured in a number of ways. Common dimensions include the number of people killed, injured, homeless and affected, as well as economic loss.
 - Economic loss may refer to damage to buildings and other economic assets, number of transportation networks affected, economic disruption or loss of revenue to commercial services, and utility disruption.
 - Physical loss or damage refers to the magnitude of the impact of the event or disaster on the quantity and quality of land, crops, livestock, aquaculture and biomass.
- ❖ The specific impact of each natural disaster on the integrity of the local ecosystem may also be reported on, where statistics exist.
- ❖ External assistance received for disaster relief may also be measured.



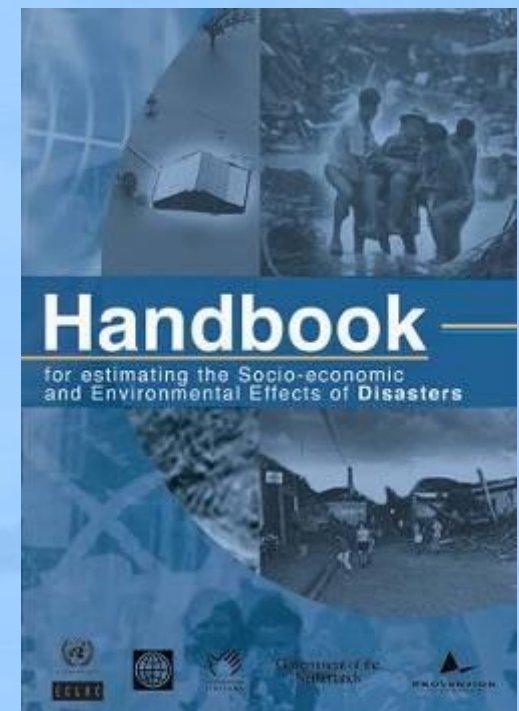


Sub-Component 4.1: Natural Extreme Events and Disasters

Topic 4.1.2: Impact of natural extreme events and disasters

Handbook for Estimating the Socio-economic and Environmental Effects of Disasters

- ❖ The United Nations Economic Commission for Latin America and the Caribbean (UNECLAC) has developed a handbook, “UNECLAC: Handbook for Estimating the Socio-economic and Environmental Effects of Disasters”, which may be useful to other countries and regions.
- ❖ It evaluates the overall impact of disasters associated with natural events and includes a methodology for evaluating it. This analysis of disaster impact in terms of damage and losses makes it possible to estimate the impact of disasters on economic growth, the population’s living conditions and environmental conditions in the region.





Sub-Component 4.2: Technological Disasters

Sub-Component 4.2
Technological
Disasters



Topic 4.2.1
Occurrence of
technological
disasters

Topic 4.2.2
Impact of
technological
disasters





Sub-component 4.2: Technological Disasters

- ❖ This sub-component:
 - structures statistics on technological disasters. Technological disasters may arise from human intent, negligence or error, or from faulty or failed technological applications.
 - groups information on the occurrence and impact of such disasters on human lives, habitats, the environment, and on disaster preparedness for such types of disasters.
- ❖ Policy makers, analysts and civil society require statistics on technological disasters to understand who is ultimately responsible and what the immediate and potential impact may be, and to assess and mitigate future risks.
- ❖ CRED recognizes three types of technological disasters, which are:
 - i. industrial accidents which cover accidents associated with chemical spill, collapse, explosion, fire, gas leak, poisoning, radiation and other;
 - ii. transport accidents which cover accidents associated with air, road, rail, and water; and
 - iii. miscellaneous accidents which cover accidents associated with collapse, explosion, fire, and other disasters of varied origin.
- ❖ All these types of disasters can impact large areas and affect both human safety and the environment in both the short and long term.



Sub-Component 4.2: Technological Disasters

Topic 4.2.1: Occurrence of technological disasters

- ❖ This topic structures information on the frequency and nature of disasters that arise as a result of human intent, negligence, or error or from faulty or failed technological applications.
 - Nuclear meltdowns and pipeline or tanker leaks that result in significant harm to the environment, including potentially significant consequent impacts on humans, are prime examples.
- ❖ Technological disasters impact human lives, habitats and ecosystems in different ways, depending on the nature and intensity of the disaster.
 - Their effects may be short term or may be of significant or unknown duration. In the case of technological disasters, there is sometimes no precedent for a given disaster.
 - The full impact of such disasters cannot always be fully anticipated or measured.





Sub-Component 4.2: Technological Disasters

Topic 4.2.1: Occurrence of technological disasters (cont.)

- ❖ This topic should include information on the identification and characterization of different types of events, including information on type of disaster, location, date of occurrence and duration.
- ❖ Additionally, where relevant because of repeated episodes, the frequency of technological disasters can also be critical in guiding policy-making and the development of deterrents.
- ❖ For inclusion in this sub-component, a technological disaster should be categorized using the same criteria as the CRED EMDAT.





Sub-Component 4.2: Technological Disasters

Topic 4.2.2: Impact of technological disasters

- ❖ This topic includes specific impacts on humans and damage to the economy and ecosystems arising from technological disasters.
- ❖ These impacts may include radiation-related conditions and diseases or other health impacts, property damage, loss of livelihood, services and housing, social and economic disruption, and environmental damage.
- ❖ The statistics in this topic include:
 - the number of people killed, injured, rendered homeless or affected, and economic loss.
 - estimates of the loss of work days and economic cost in monetary terms (e.g., loss of wages or costs of treatment), when available.
 - Economic loss may refer to damage to buildings and other economic assets, number of transportation networks affected, economic disruption or loss of revenue to commercial services, and utility disruption.
 - Physical loss or damage refers to the magnitude of the impact of the event or disaster on the quantity and quality of land, crops, livestock, aquaculture and biomass.





Questions, comments for Component 4?





Thank you for your attention!

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