WMO initiative to standardize data collection of weather, water, climate and space weather extreme events

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WEATHER CLIMATE WATER
TEMPS CLIMAT EAU

WMO OMM
World Meteorological Organization
Organisation météorologique mondiale

WMO Resolution 9 (Cg-17)

Decides to standardize weather, water, climate, space weather and other related environmental hazard and risk information and develop identifiers for cataloguing weather, water and climate extreme events- WMO Resolution 9 (Cg-17), 2015

- A typology of the events that would be catalogued and receive unique identifiers (such as droughts, different kinds of floods, heat/cold waves, various types of storms and severe weather, space weather, etc. An initial list of hazard event types has been identified);
- Indices and parameters used/recommended for characterizing and recording each type of event (i.e. its magnitude, location, timing and duration);
- A coding scheme and governance mechanism for assigning a unique identifier to each event,
- Database management systems for recording/cataloguing the events (how the data about the events are stored so that they can be accessed using the unique identifier once it has been assigned).

There is a growing importance within global agenda to track losses and damages associated with extreme events:

- **The United Nations Sustainable Development Goals,**
- **The United Nations Framework Convention on Climate Change Paris Agreement, The Sendai Framework for Disaster Risk Reduction, and**
- **The Warsaw International Mechanism on Loss and Damage.**

The United Nations Sustainable Development Goals SDG No.11 and No.13:

Significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations

Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries

Example of applications

- Tracking policy outcomes by governments
- Risk management (public and private sector)
  - Risk identification (hazard component)
  - Risk reduction (e.g. codes and standards)
  - Risk transfer (insurance, risk facilities, cat bonds)
- Research
  - Tracking trends in event frequency, severity and distribution
  - On causal contributions of hazards, exposure and vulnerability to losses

The proposed approach

- Centres on identifying events uniquely, while at the same time being able to group together events which are hydro-meteorologically related,
- Involves assigning a universally unique identifier (UUID) number to each event including key attributes of the event into a data record, (other attributes are to be included that provide context such as description, local identifier (e.g. local or regional names of storms), and links to other events which would enable clustering of events (e.g. events linked to other events) to mirror larger scale (synoptic) phenomena)
- A standard living list defining typology of high impact events

- WMO Resolution 9 (CG-17): Identifiers for Cataloguing Extreme Weather, Water and Climate Events
- Paris Agreement
- Sendai Framework for Disaster Risk Reduction
- Intergovernmental Panel on Climate Change

APPROACH

International Workshop on Calatoguing and Managing Information on Extreme Weather, Water and Climate Events, Geneva, November 2017

Standard Typology of Hazards

- Drought
- Flood
- Heat wave
- Cold wave
- Storm

EVENT

UUID: f3ja-9ub3-ks92-mvyp-791a-frfg-25n8-6

Event Record

- Record creation
- Event start
- Event end
- Event type
- Spatial area
- Description of event
- Local identifier
- Link to other identifiers

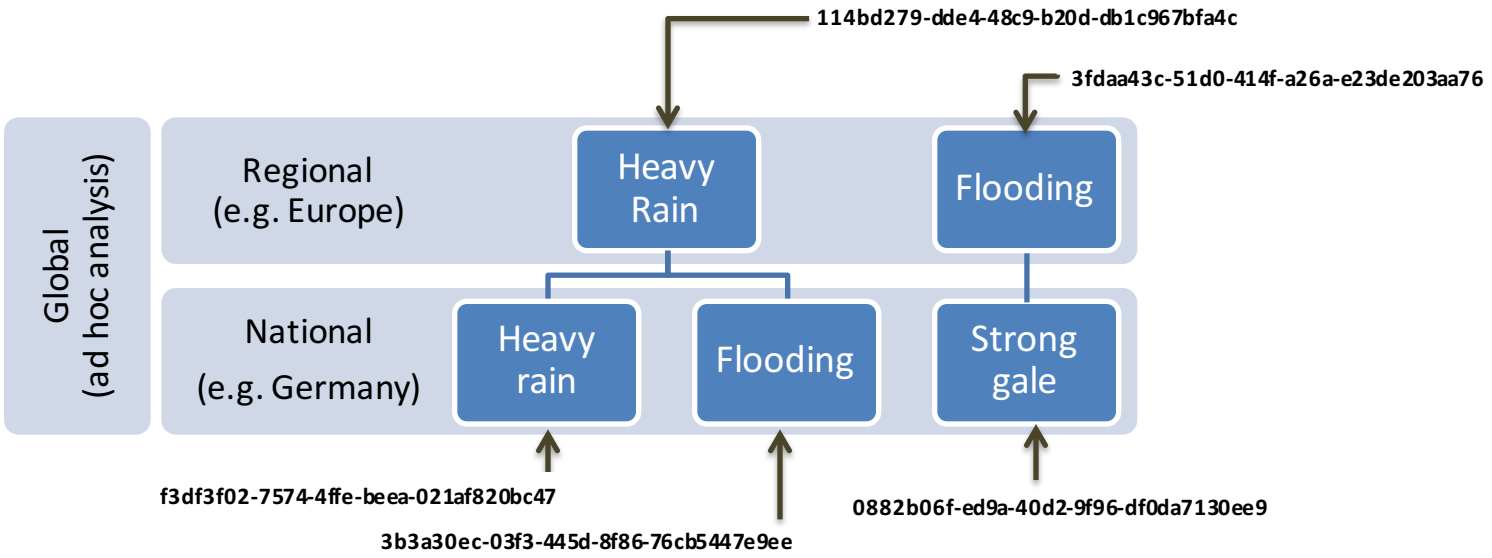
Event Database

Loss & Damage Community Database

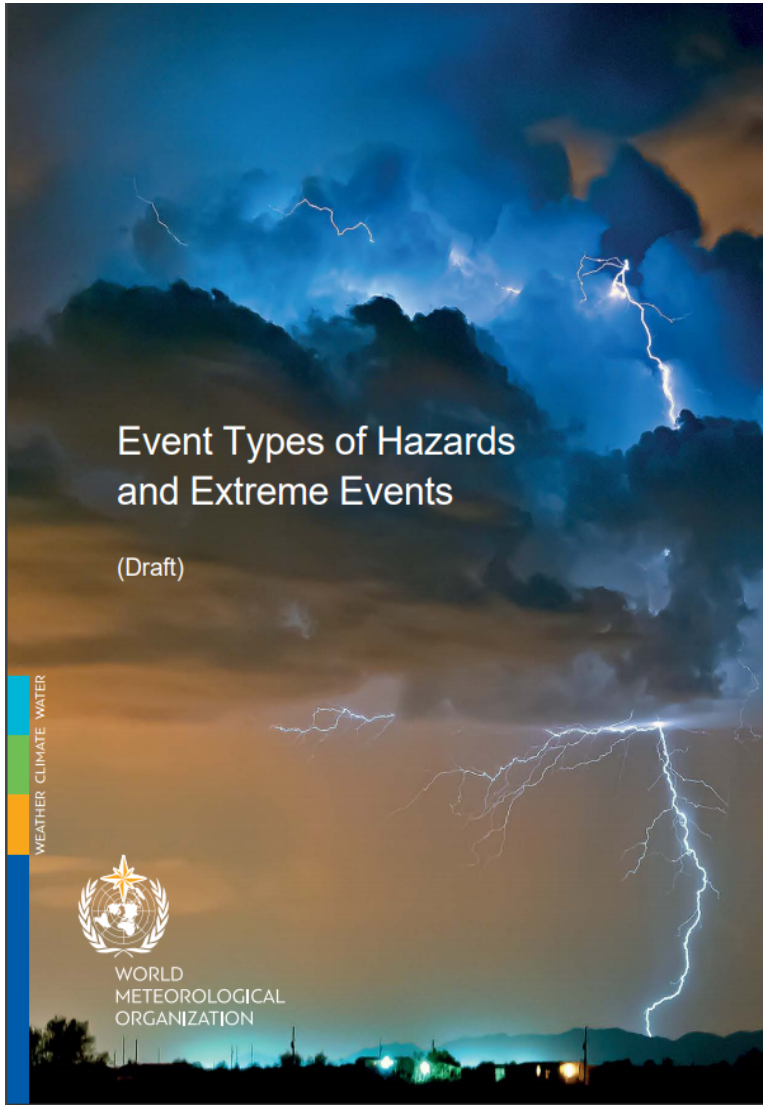
Table.1 Event Parameters , *Field with * is mandatory for recording*

Parameter	Format	Description	Comments
UUID*	Alphanumeric number	UUID (32 character random sequence)	(e.g. 00112233-4455-6677-8899-aabbccddeeff)
Record Creation*	Date/Timestamp		
Identifier*	Text	Originator (Name of institution that is recording the event)	Institution that is recording the event
Start Time*	Date/Timestamp		
End Time*	Date/Timestamp		
Event Type*	List (Controlled list – see table below)	System or primary	Source of event (e.g. tropical cyclone) or primary (list of primary events)
Area*	Recognized spatial datatype	Area of event	
Headline	List (Controlled list – see table below)	Text (e.g. hurricane, heatwave coastal flooding, hurricane)	Highly recommended to enter
Description	Text (Up to 240 characters)	Open description text	Description of event such as max temp, highest wind speed, Category
Linkage	Alphanumeric number strings	UUID reference link to source events	UUID of other events considered as source events (e.g. Tropical cyclone)
Status		Indicate status of record	In progress / Complete
Post processing		Quality control, verification	Not started / Ongoing / Validated

Identifying cascading events and their association



Standard list of Hazards



- Weather, Climate and Water
- Geophysical
- Space Weather

60 Events were defined using WMO Technical Regulations

NEXT STEPS

- Test Phase
- WMO Congress 18 Adoption

Endorsement by WMO Regional Association of Europe, February 2018

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Thank you
Merci

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