

Recording and Sharing Disaster Loss Data

March 2015

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*Serving society
Stimulating innovation
Supporting legislation*



Policy Background: EU added value

Jan. 2014: Adoption of the Union Civil Protection Mechanism

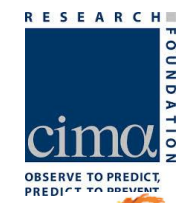
Art. 5 : MS are required to complete risk assessments at national or appropriate subnational level and make available a summary of the relevant elements by 22 Dec. 2015 and every three years thereafter.

Risk assessment and mapping guidelines for disaster management (Dec. 2010)

Risk Management Capability Guidelines (XX, 2015)

Guidelines For Sharing Disaster Loss Data (April, 2015)

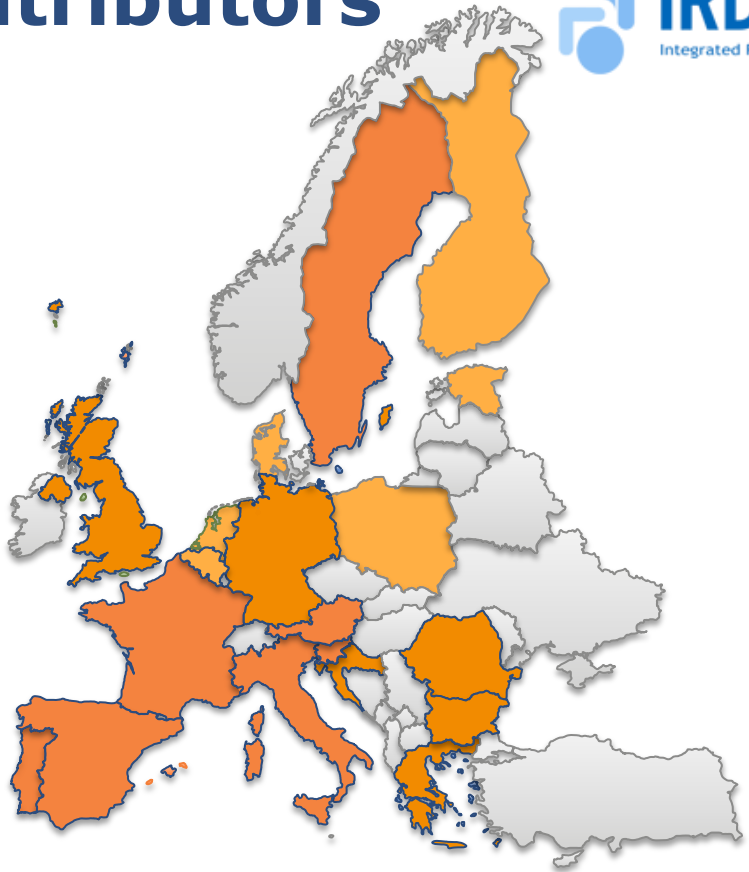
Contributors



European Environment Agency



	Country
1	Austria
2	Belgium
3	Bulgaria
4	Croatia
5	France
6	Germany
7	Greece
8	Italy
9	Netherlands
10	Portugal
11	Romania
12	Slovenia
13	Spain
14	Sweden
15	United Kingdom



Application areas

Compensation

- Fair and efficient
 - Solidarity mechanism
 - Insurance market

Accounting

- Avoiding sovereign insolvency
- Balance prevention budget and loss compensation

Disaster Loss Data

Forensics

- Evaluate and improve
 - prevention measures
 - prevention policy

Risk modeling

- Accurate risk assessment based on locally relevant loss exceedance curves

Loss data serving several purposes

**International
level**

**Post-2015 Framework for
Disaster Risk Reduction**

European Level

**Strong legal basis: UCPM,
EUSF, Green paper on
Insurance, Floods & INSPIRE
Directives...**

National level

**National process involving a
number of stakeholders:
decision makers, scientists,
practitioners...**

EU added value of a loss data-sharing standard

Loss data sharing at EU level will support several policy areas:

- Union Civil Protection Mechanism
- Flood Directive, Solidarity Fund, State Aid

Creating guidance at EU level allows to be coherent with other frameworks: INSPIRE, EUROSTAT nomenclature.

It also ensures compatibility with international frameworks:

- Post-2015 Framework for Disaster Risk Reduction,
- OECD framework for accounting national expenditures and loss information,
- IRDR Guidelines on Human and Economic Impact Indicators

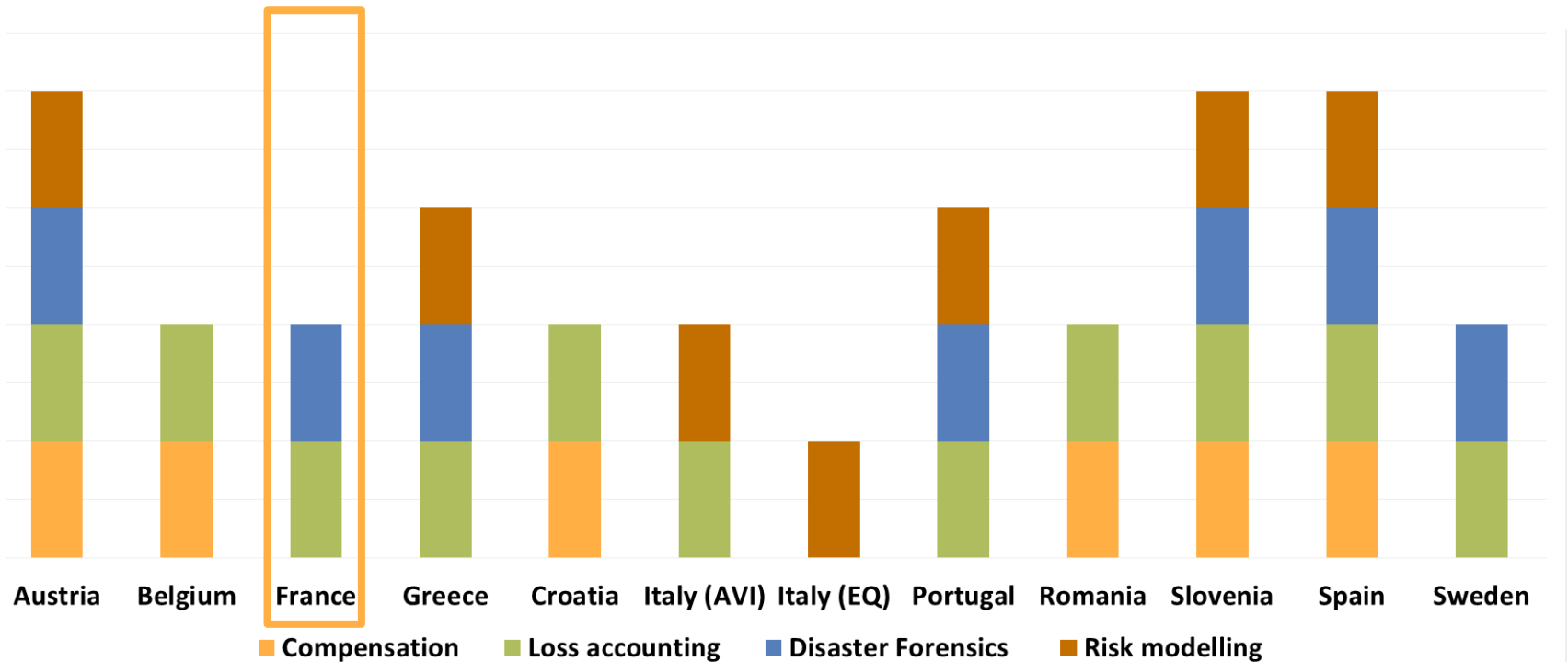
Situation in EU: Comparative analysis

Purpose of loss databases

		Austria	Belgium	Bulgaria	France	Germany	Greece	Croatia	Italy	Portugal	Romania	Slovenia	Spain	Sweden
Sclae/scope	Asset/Nat	●		●	●	●	●	●				●		
	Asset/Region		●											
	Municip/Nat								●	●	●		●	●
	Regular updates	●			●		●	●	●	●	●	●	●	
	Multi-hazard				●		●			●		●		
	Public access				●	●			●					●
	Legal basis	●	●	●				●			●	●	●	

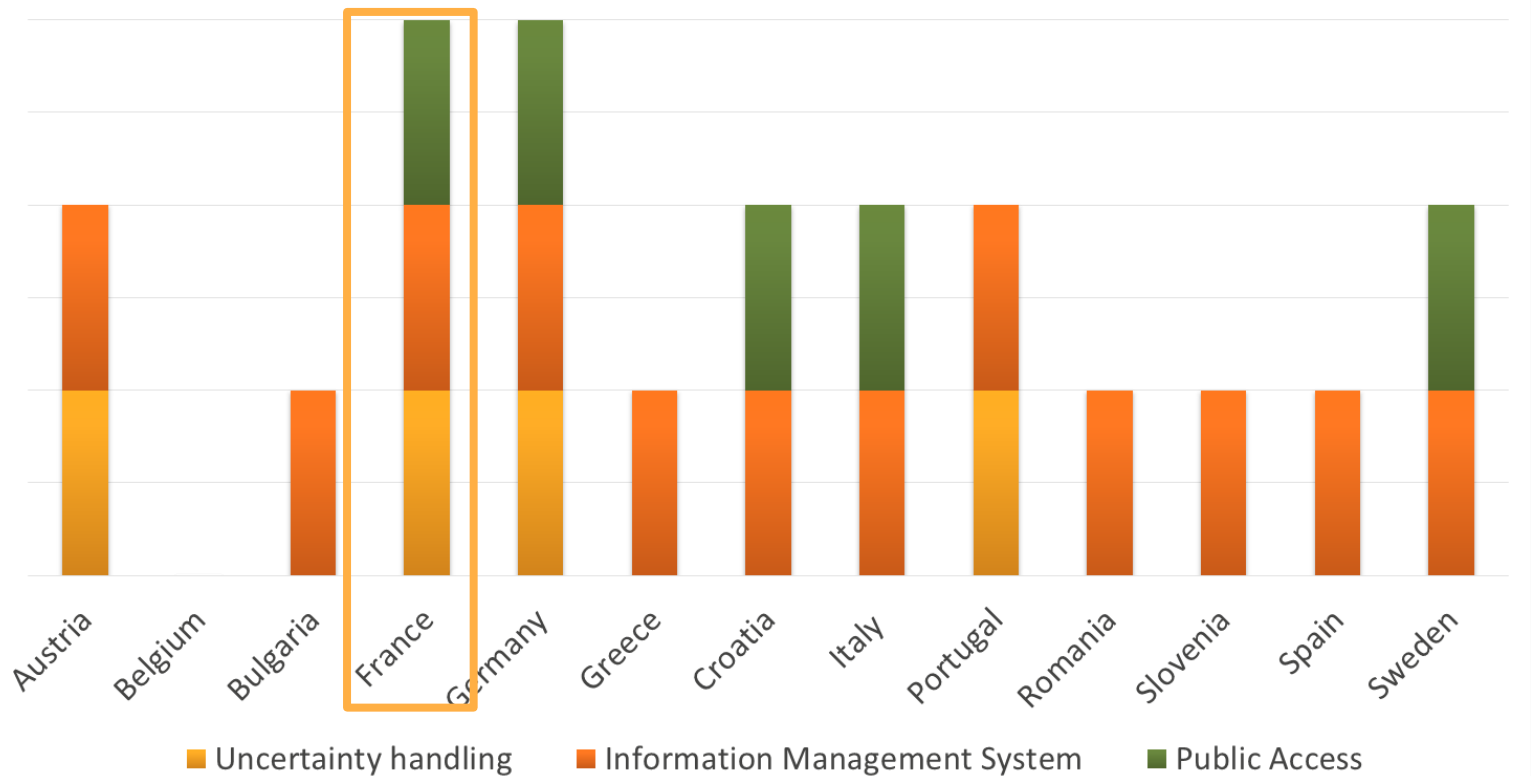
Comparative analysis

Application areas



Comparative analysis

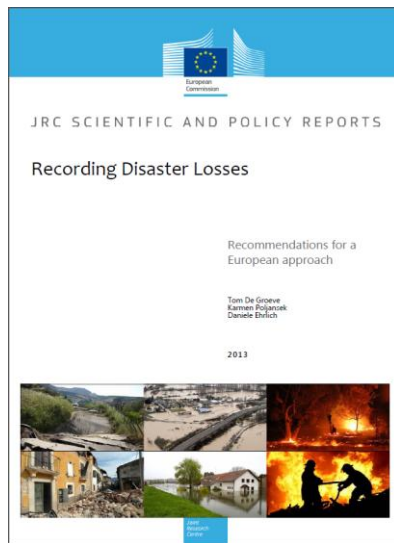
Methodology of recording



Main findings: loss data in EU

- **12 out of 15** participating Member States have established and maintained a loss database,
- Large **differences** in the processes of loss data collection and recording,
 - Differences in IT systems,
 - Differences in terminologies for peril classification,
- Lack of **standards** (e.g. for human and economic losses) that prevent aggregation at EU or global levels,
- **Drivers** for loss data recording mainly linked to:
 - i) (semi) public national compensation schemes,
 - ii) existing national and EU legislations
 - iii) for improving prevention and response mechanisms.

Three key documents prepared in consultation with Member States



Recording Disaster losses (2013)

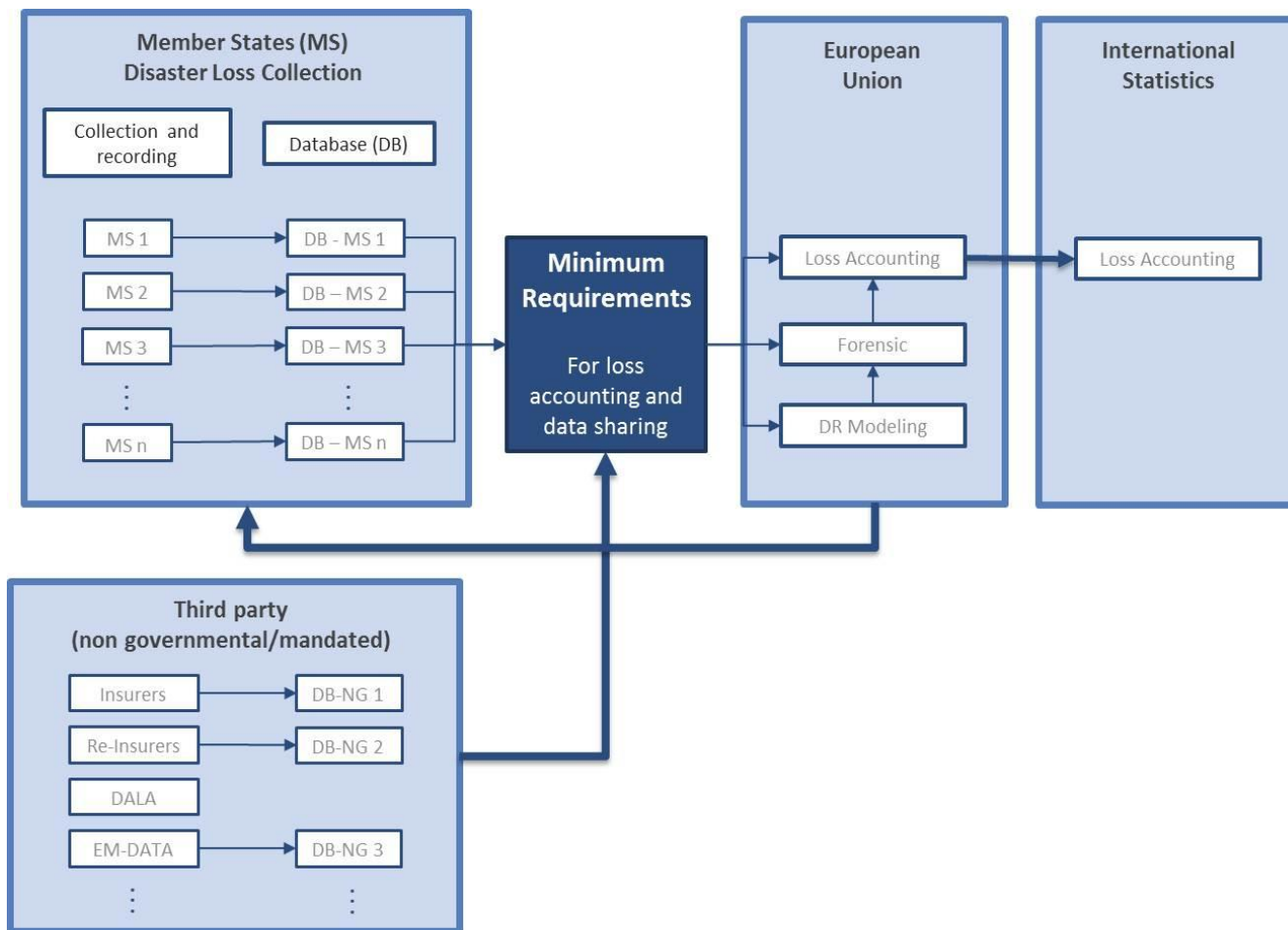


Current status and best practices (November 2014)



Draft Guidelines for disaster loss data recording (April 2015)

MINIMUM REQUIREMENTS FOR LOSS DATA SHARING



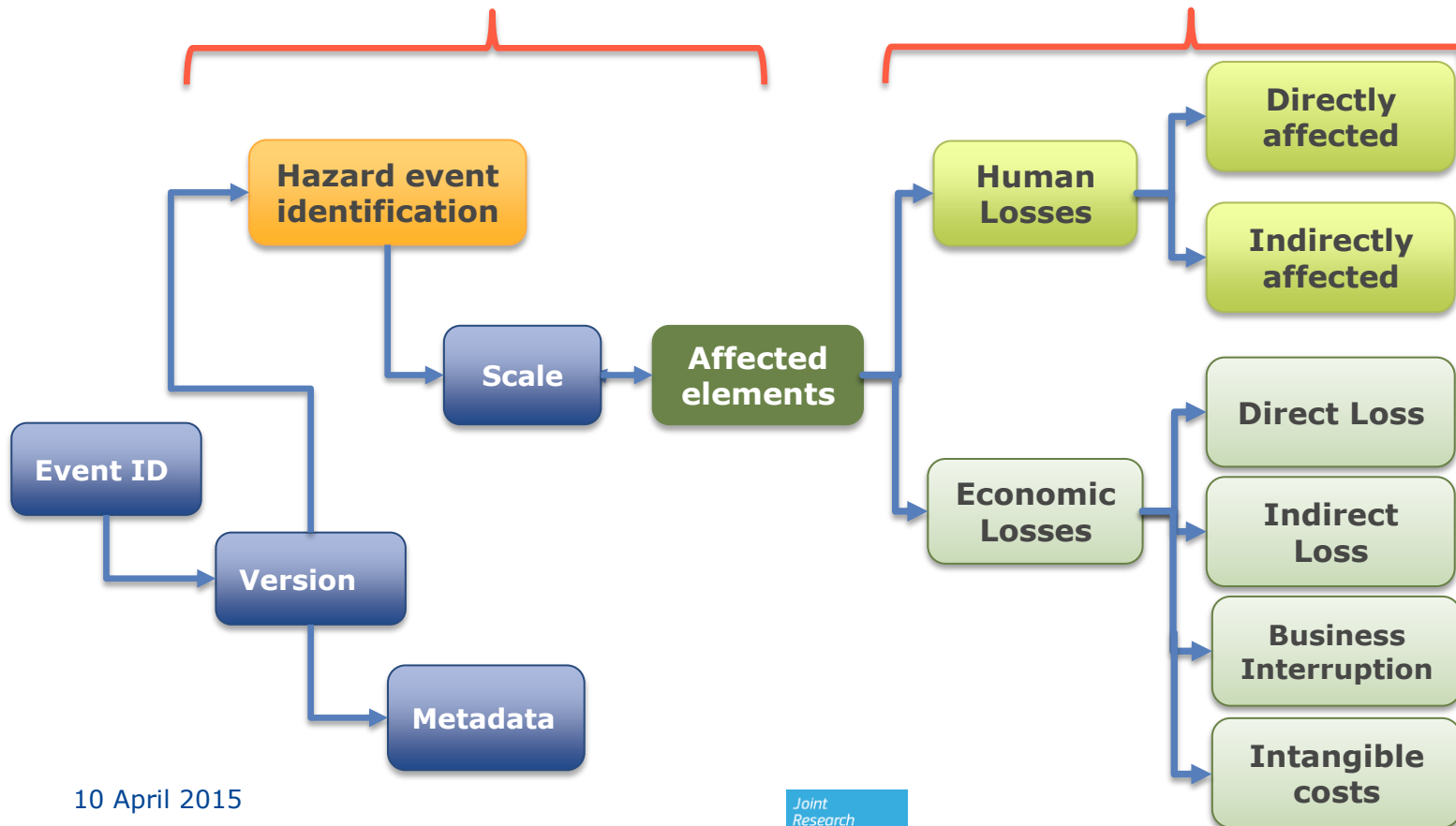
Answers to which questions?

- **Post-2015 Framework for Disaster Risk Reduction: Targets**
 - Reduce mortality, affected (per capita) and direct economic losses (per GDP)
 - Reduce damage to critical infrastructure
- **Disaster Risk Reduction at National and EU level**
 - *Graph of total loss for the whole country by hazard type from 2000 to 2014*
 - *Map of average annual flood (or another hazard type) loss per NUTS2 level (province) by loss owner. Loss owner categories are: government, business, individual, insurer*
 - *Table of trends in total loss for the whole country by sector and by year*
 - *List of top 10 municipalities by total loss in 2010*

Model of Disaster loss database

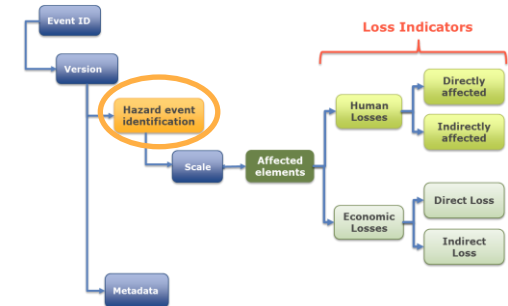
Event Indicators

Loss Indicators



Indicators of the loss database

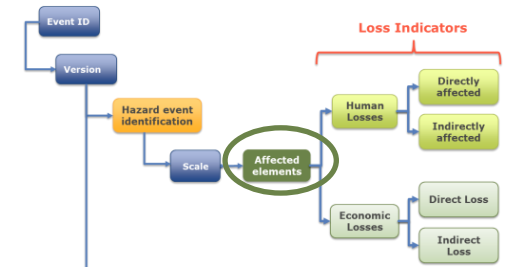
HAZARD EVENT IDENTIFICATION



Hazard event identification	Fields	Standards or best practices to be considered	Minimum Requirement
	Geographical information	Country code (ISO 3166-1 alpha-3 specification) Minimal spatial unit (NUTS classification - LAU2 level) Coordinates (latitude, longitude) of point or polygon	NUTS1 NUTS2
	Temporal information	Event date and time: UTC time (h) Period: start date (dd/mm/yyyy) - end date (dd/mm/yyyy)	X
	Hazard event classification	IRDR peril classification (Annex 1: Peril classification) INSPIRE - HazardCategoryValue	X
	Event type specific attributes	Small set of severity indicators for search purposes	
	Hazard event identification number	Hazard event code-yyyy-ID number-Country ISO code	X

Indicators of the loss database

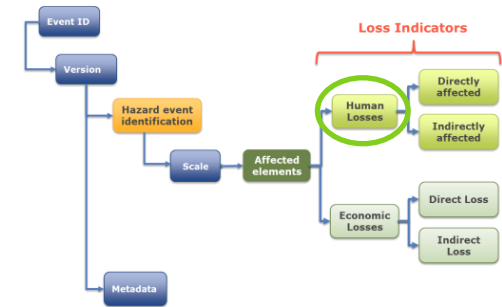
AFFECTED ELEMENTS



Affected elements	Fields		Standards or best practices to be considered	Min. Req.
Geographical			Country code (ISO 3166-1 alpha-3 specification) Minimal spatial unit (LAU2), Coordinates (latitude, longitude), Footprints	
People		Age/gender/marital status, etc.	ECLAC based	
Property	Buildings	occupancy classification /height/construction material/etc.	Eurostat (Classification of types of construction, CC)	
		hazard dependent classification	Syner-G or HAZUS (earthquake), HAZUS (flood), HAZUS (wind)	
		owner who bears the loss		
	Civil work	type classification	HAZUS	
		size/length hazard dependent classification source of pollutants	Natech classification	
	Content/ Equipment	depends on the occupancy classification		
	Vehicles	type classification		
	Products/ Stock/ Crop	type classification	Eurostat	
	Owner	Individuals/ business/ government/ etc.	(National Research Council (NRC), 1999)	
	Who bears the loss	Individuals/ business/ government/ etc.	(National Research Council (NRC), 1999)	
Environment	Human-made landscape environment	Land Cover/Land Use classification area	CORINE Land Cover European database/Land Use classes, LUCAS	
	Natural environment	type of ecosystem/habitats	Habitats Directive" (92/43/EEC)	

Indicators of the loss database

HUMAN LOSSES

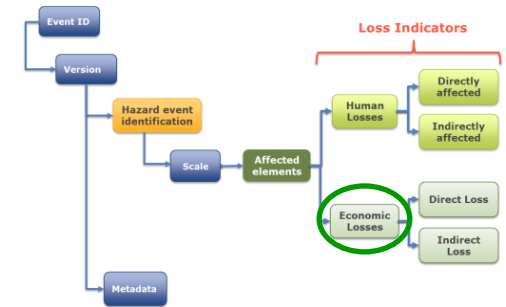


Human Loss indicators	Fields	Standards or best practices to be considered	Minimum Requirement
	Directly affected*	<ul style="list-style-type: none"> - Human loss framework proposed in De Groeve et al., (2014) - IRDR Guidelines on Measuring Losses from Disasters (2015) - ECLAC (2010) 	X
	Indirectly affected*		
	Killed	<ul style="list-style-type: none"> - Human loss framework proposed in De Groeve et al., (2014) - IRDR Guidelines on Measuring Losses from Disasters (2015) 	X
	Missing		X

* A similar approach has been used in ECLAC (2010) for dividing the affected people.

Indicators of the loss database

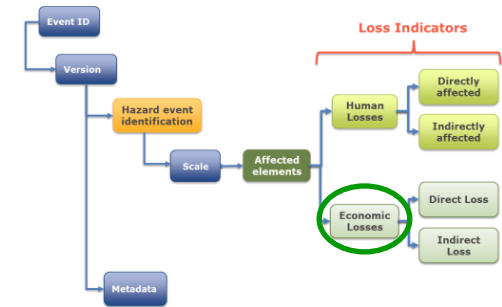
ECONOMIC LOSSES



Economic Loss indicators	Fields	Standards or best practices to be considered	Minimum Requirement
Direct loss	Economic Sector: Agriculture/Education/manufacturing/infrastructure, etc.	Industrial Classification of all Economic Activities (ISIC)- version 4 (2008)	X (Total of all sectors)
	Owner: Individuals/ business/ government/ non-governmental organizations and insurance companies	(National Research Council (NRC), 1999)	X
	Who bears the loss: Individuals/ business/ etc.	(National Research Council (NRC), 1999)	X
Indirect loss	<ul style="list-style-type: none"> Price increases Increase in unemployment Decline of GDP Increase in government debt Negative impacts on stock market prices Cost of reconstruction and recovery* Cost of planning and implementation of risk prevention measures Cost of emergency relief services 	<ul style="list-style-type: none"> -DALA methodology (ECLAC, 2010), - OECD Framework For Accounting National Risk Management Expenditures And Losses of Disasters (December 2014), - IRDR Guidelines on Measuring Losses from Disasters (2015). 	

Indicators of the loss database

ECONOMIC LOSSES



Economic Loss indicators	Fields	Standards or best practices to be considered	Minimum Requirement	
	Losses due to business interruption	<ul style="list-style-type: none"> Loss of revenue Losses due to the absence of public services <ul style="list-style-type: none"> - Loss due to lack of telecommunication - Loss due to lack of transportation - Loss due to lack of gas, water and electricity 	-DALA methodology (ECLAC, 2010), - OECD Framework For Accounting National Risk Management Expenditures And Losses of Disasters (December 2014), - IRDR Guidelines on Measuring Losses from Disasters (2015). - (Meyer et al., 2013)	
	Intangible costs	<ul style="list-style-type: none"> Environmental losses Health impacts Cultural heritage losses Loss of reputation Psychological stress 	OECD Framework For Accounting National Risk Management Expenditures And Losses of Disasters (December 2014)	

Summary of main requirements for loss-data sharing standard

- Loss data at asset level is not necessary; **aggregation of data geographically at regional (NUTS2) or national levels (NUTS1) can be sufficient,**
- **Only direct losses in national currency** need to be reported ;
- **Summary or aggregate statistics** should be shared using an open data policy in a common data standard to support trans-boundary and international processes (including the post-2015 Framework).

Conclusions

- Sharing disaster loss data is important at **local, national, EU and global level**
- **EU Loss Data technical working group**: technical guidance for recording and sharing. France is an active partner, and has a lot to contribute
- The **Public Private Partnership** is a good model for sustainable loss databases
- The **active national multi-stakeholder process** is a best practice for other EU countries