RISK ASSESSMENT QUESTIONNAIRE

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Partner information:

Country: ....

Pilot Area:....

Partners involved:....

1)....

2)....

3)....

4)....

5)....

Name of contact person and contact details:

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Contents:

1. Introduction:

In the following pages you will find a detailed quetionnaire which will be used in order to develop a risk assessment methodology that will be feasible and easy to imlement by the partners at the pilot areas. The purpose of the questionnaire is to:

a. Create a better understanding on the expectations and objectives of the individual partners regarding the methodology;
b. collect information concerning the existing situation in each individual institution regarding the legal requirements and the methods they have been using for assessing and mapping risk;
c. examine the availability and accessibility of data that are essential to implement the risk assessment and to produce risk maps and;
d. provide a basis for developing the new risk assessment methodology.

The questionnaire only takes into account hazard types that are related to climate variability and change (e.g. floods, landslides, heatwaves etc.) thus inforamtion regarding other hazard types such as earthquakes and/or industrial hazards are not required.
Please complete carefully the following sections and do not hesitate to contact the Lead partner (NDGDM) or UNIVIE in case you have any questions. The last section of the questionaire is a glossary where you can find the definitions of the most common terms in risk assessment that are also used throughout the questionnaire.
At this stage of the survey it is requested to provide informaton regarding the ***availability and accessibility*** of the different data. The data themselves shall be provided at a later period of the process.

2. Questionnaire

2.1. SECTION I: Risk Assessment Methodology and Data

2.1.1. Expectations and objectives of the new methodology

This qualitative part of the questionnaire aims to assess the expectations and needs of the partners towards the new SEErisk risk assessment methodology. It is essential to go through these questions as the usability, relevancy and the applicability of new methodology will be mainly based on the answers provided by the project partners.

1. For which purpose would you like to apply the new risk assessment methodology in your institution/country (e.g. emergency planning, funds allocation, loss estimation of future events, civil protection, prevention)?

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2. What are the main objectives in risk management in your institute?

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3. What are the criteria to determine acceptable/tolerable risk in the process of risk assessment in your country? (risk criteria may include lowest probability of occurrence, maximum monetary loss, maximum number of individuals affected, maximum lives lost, maximum days of business interruption, affected critical infrastructure/lifelines etc.)

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4. Which types of hazards are you going to consider in your pilot study? Are you going to work with single or multi-hazards?

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5. Which types of climate variability and change related hazards have significantly changed in terms of statistics

(e.g. frequency, intensity, duration) in the pilot area/area your are responsible for in the last 3 decades?
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6. What type of risk assessment are you planning to carry out? If there are no plans yet, which one is the most attractive type for you and your organisation? Qualitative (with textual description) semi quantitative (with figures, matrices, graphs, tables and their explanations), or quantitative (without any textual parts related to the risk assessment)? *Please, explain your choice in 1-2 sentences.*
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7. Which elements at risk would you like to consider in the new risk assesment methodology? (e.g. buildings, infrastructure, humans) and which type of losses will you consider as consequence of hazardous events? (direct losses, e.g. lives lost, buildings, infrastrucutre or indirect losses, e.g. business interruption, impact on tourism, etc.)
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8. What is the expected outcome or product of an improved risk assessment methodology in your country? (e.g. risk maps showing high risk areas, risk values for comparisons etc.)
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9. Who will be the end user of this methodology? (e.g. emergency services, spatial planners, local authorities, etc.)
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10. At what scale(s) would you like to conduct/integrate the newly developed Risk Assessment Methodology within the SEERrisk project? (national, regional, local, catchment, site specific)
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11. In what way would you like to consider climate change in the future risk assessment methodolog(ies)y? Are you planning to use climate change models? Or do you purely apply climate change scenarios calculated by other institutions? Do you already use any of the climate models in your country and/or in your institution? If yes, in what way?

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12. As a consequence of the altered hazards are you planning to take into account land-use change in the development of risk scenarios?

YES
NO

13. Are you aware of any other issues to be considered which could be important in developing the new risk assessment methodology?

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2.1.2. Current Methodology in Use

This qualitative part of the questionnaire looks at whether there are legal and technical requirements in place for risk assessment and risk mapping at partner countries and whether they are in line with European Commission's *Risk Assessment and Mapping Guidelines for Disaster Management* material released in 2010. (see complementary material)

1. Legal requirements:

a. Does the disaster management regulation in your country require you to implement some sort of *risk assessment* method at national/regional/local level?

YES

NO

If yes, at which scale?.....

b. if not, how do you evaluate risks from natural disasters in your country?

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c. If yes, does it contain the following *(and please proceed to question 2. and 3.)*?:

- definition of risk; Y/N.

If yes, please provide definition:

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- definition of human, economic and environmental, political/social impacts; Y/N

If yes, please provide definition:

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d. Do you use risk matrices; YES / NO

e. Are the phenomena and the effects of climate change taken into account during risk assessment process. YES / NO

If yes, in what way?

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f. Does your national legislation on urban and land-use planning is in line with the risk assessment requirements? If yes, in what way? Please provide information…

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2. Risk assessment stages:

Does the risk assessment methodology prescribed by the legislation in your country (if there is) contain any of the stages below? *(Please provide the source of the legal requirement)*:

a.. Risk Identification *(finding, recognizing and describing risks)* with the following parts:

- risk scenarios *(description of how future may develop based on experiences from the past)*;
  YES / NO
- single risk rating *(determination of one specific risk from one particular hazard [e.g. risk of injury by flash flood] in a particular area.)*;
  YES / NO
- multi-risk rating *(determination of the cumulative risk from several hazards)*;
- YES / NO
- risk identification in national risk assessments *(1. scenario building, 2. quantitative analysis, 3. number of risks and risk scenarios considered, 4. temporal horizon [risks may appear in the immediate future])*
  YES / NO
- any other step *(please specify)*
- ……

b. Risk Analysis *(comprehending the nature of risk and determining the level of risk)* with the following parts:

- specific risk analysis of natural hazards *(estimates the risk of a singular hazard in isolation from other hazards)*;
  YES / NO
- multi-risk ratings *(entails a multi-hazard [territory, domino effect or cascading hazards, simultaneous hazard events without any cause-effect relationship] and a multi-vulnerability perspective [variety of exposed, sensitive targets])*; Y/N
- risk analysis in national risk assessments *(1. quantification, 2. number of risks and risk scenarios analysed)*;
  YES / NO
- any other step *(please specify)*
- ……..
- The risk analysis includes the processes of hazard and vulnerability analysis.
  Which methods are you using for hazard/vulnerability analysis *(please fill in the below table)*?

Table 1.

For the methods in use:	Type of analysis	Type of hazard	Outcomes/Products	Advantages	Disadvantages
HAZARD ANALYSIS PROCESS	*E.g. Hazard modelling, use of historic data, expert judgement, etc.*		*E.g. maps; hazards zones; municipal hazard classification*	*e.g. can be easily updated, suitable for multiple users*	*e.g. time consuming, data restricitons, scale, not available in electronic form etc.*
VULNERABILITY ANALYSIS PROCESS	*E.g. use of past damage data for developing curves, mapping of buildings and/or infrastructure, mapping of socioeconomic data (e.g. income, age, etc.), use of vulnerability indices*		*E.g. vulnerability curves; vulnerability maps*		

c. Risk evaluation *(process of comparing the results of risk analysis with risk criteria to determine whether the risk and/or its magnitude is acceptable or tolerable.)*Y/N

3. Risk mapping:

a. Does the disaster management regulation in your country require you to use risk maps to support the risk assessment? Y/N

b. if not, how do you visualize risks at national/regional/local level?

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c. if yes, what are the technical requirements for mapping? *(e.g. GIS tools; field investigations;)*

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d. What kind of technology/software is available in the pilot area/area you are responsible for? Software for processing GIS/Remote sensing data *(e.g. ArcGIS, Mapinfo, IDRISI, ERDAS etc.)*

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e. Are there any harmonized standards regarding the development and the visualization of risk maps in your country? *(geographic reference, symbols etc.)*?

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f. What is the current use of hazard/risk/vulnerability maps in your country?

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Table 2.

USE						
	Map type (e.g.flood risk map)	Map type	Map type	Map type	Map Type ….	Map Type …
Information/communication for the general public						
Information/Communication for declsion makers						
Land use/spatial planning						
Regional management						
Emergency response plans for disaster management agency						
Allocation of resources						
Scientific research						
Military purposes						
Visualization of information only						

2.1.3 Data Availability

The data collection chapter's objective is to monitor the availability of different types of data which will serve as a basis of the common risk assessment methodology and of the risk maps as a part of the methodology.

Spatial data shall be provided at a later stage of the methodology task. *During GIS processing most of the submitted data will be used for risk maps in GIS environment! Where spatial data shall be provided at a later stage the data will be marked with a "**GIS"** logo.*

Requirements regarding the spatial data:

- It is essential that all objects for the risk maps are provided with spatial coordinates
- Coordinates of the different objects shall be in UTM or WGS84 projection
- Acceptable file formats:

- *Excel 2003/2007 – xls, xlxs*
- *MS Access 2003 – mdb*
- *ESRI shape – shp*
- *ESRI geodatabase 9.3.1 or earlier version– feature dataset/feature class*

For analogue data, please provide either this information in analogue form or transfer it to a digital version such as pdf/jpg/word etc. (scanned documents/maps).

BASIC DATA

TABLE 3. Please insert information regarding the existence of basic data. These data can be used to develop hazard maps in areas that no hahard maps are available or they can be used in order to add information in the new developed risk maps.

Type of Data	**Scale/resolution (e.g. 1:10.000 or 10x10m resolution)**	**Form analogue, elecotronic (indicate: GIS, excel, database, pdf, etc.)**	**Coverage (size of the area being covered in km2)**	**Accessibility** a. Online availablity b. Publicly available c. Internally available d. Restricted access e. Available to buy Not available *(please choose the applicable letter; more options are possible)*	**Short Descritpion**
Topographic map					
Surface geology map					
Lithology map					
Structural geology map					
Soil map					
Geomorphology map					
Hydrology map					
Orthophotos/Other remote sensing data					
DEMs (Digital Elevation Model)					
Other:					

EXISTING HAZARD, VULNERABILITY AND RISK MAPS

Table 4a. Please provide a list of all existing hazard maps for your pilot area

Hazard Maps for the respective hazard types*	**Scale/resolution (e.g. 1:10.000 or 10x10m resolution)**	**Format analogue, electronic (indicate:GIS, database, pdf)**	**Coverage (size of the area being covered in km²)**	**Accessibility** a. Online availablity b. Publicly available c. Internally available d. Restricted access e. Available to buy f. Not available *(please choose the applicable letter; more options are possible)*	**Short Description**
Heat waves					
Droughts					
Wildfires					
Cold waves					
Snowstorms					
Thunderstorms					
Flash floods					
Floods					
Inland excess water (inland inundation)					
Shallow landslides					
Mudflows					
Debris flows					
Rock falls					

*See Terminology chapter for hazard types definitions

Table 4b. Please provide a list of all vulnerability maps of your pilot area

Vulnerability Maps	**Scale/resolution(e.g. 1:10.000 or 10x10m resolution)**	**Electronic form (Y/N) Indicate: GIS, database, pdf**	**Coverage (size of the area being covered in km$^{2)}$**	**Accessibility** a. Online availablity b. Publicly available c. Internally available d. Restricted access e. Available to buy f. Not available *(please choose the applicable letter; more options are possible)*	**Short description**
Social vulnerability (age, income, etc.)					
Human vulnerability (injury, infections, death)					
Physical vulnerability (property, infrastructure damage)					
Maps showing other vulnerability dimensions (environmental, economic, etc.)					

Table 4c. Please provide a list of all available risk maps in your pilot area

Risk Maps for for the respective hazard types	**Scale/resolution (e.g. 1:10.000 or 10x10m resolution)**	**Form (Indicate: analogue, electronic: GIS, database, pdf)**	**Coverage (size of the area being covered in km²)**	**Accessibility** a. Online availablity b. Publicly available c. Internally available d. Restricted access e. Available to buy f. Not available *(please choose the applicable letter; more options are possible)*	**Short descritpion**
Heat waves					
Droughts					
Wildfires					
Cold waves					
Snowstorms					
Thunderstorms					
Flash floods					
Floods					
Inland excess water (inland inundation)					
Shallow landslides					
Mudflows					
Debris flows					
Rock falls					

DATA REGARDING THE ELEMENTS AT RISK /VULNERABILITY DATA

Table 5. Please provide information regarding data on the elements at risk

Type of Data	**Availability (YES/NO)**	**Description**	**Data acquired (year)**	**Past data available since.../indicate intervals** *e.g. data available since 1990, new data collection every 5 years*	**File format**	**Availability** a. Online availablity b. Publicly available c. Internally available d. Restricted access e. Available to buy f. Not available *(please choose the applicable letter; more options are possible)*
Inhabitant data: • Birth rate, migration rate • Health condition of the population (average life expectancy at birth, mortality rate, main causes of death)						
Population density and social data, GIS Local inhabitants • Number of inhabitants (total population) • Gender composition • Number of inhabitants under 14 years and over 60 years • Education level: number of inhabitants over 14 without general education (elementary school						

qualification) • Number of persons on regular social welfare benefits Number of inhabitants based on the last census *(GIS, please provide spatial coordinates for data)* • by address (household) – *if number of inhabitant data is not available by address then please provide data:* • by blocks or • by streets or • by districts						
Seasonal change of the population Number of seasonal population due to: • Tourism – number of guest nights • Other variable(s)						
Administrative boundaries (NUTS 2–5, GIS)						
Street network, GIS						
CORINE land use data *(indicate the level -1,2,3),* GIS						
Other land use data *(number of classes),* GIS						
Residential building inventory, GIS • Condition • Age						

• Building material						
Public building inventory, GIS • Condition • Age • Number of floors • Building material						
Critical Infrastructure Facilities (ECI) inventory (energy sector - electricity, oil and gas pipelines; transport infrastructure – roads, railways, airports etc.), GIS						
Protected areas (under nature conservation), GIS						
Natural resources (e.g. mines), GIS						
Cultural heritage, GIS						
Location of fresh water resources, wells and drinking water networks, GIS						
Drainige channel network, GIS						
List of waste and waste water management stations (e.g. landfills, sewers etc.), GIS						
Municipal green spaces, tree inventories (dangerous trees), GIS						
Estimated total value of elements at risk (e.g. standard value expressed in EUR/m^2 multiplied by the total area of the municipality)						

DATA REGARDING EXISTING DOCUMENTATION AND INFORMATION ON HISTORIC EVENTS

Table 6a. Summary Table regarding the relevance of the hazards in your pilot area and the existence of historic data and documnetaion

HAZARD DATA (all available historic disaster data)				
Type of hazard Applicable (Y/N)	Relevance (High/Medium/Low)	Data available (Y/N)	Number of occurence with dates and duration	Availability a. Online availablity b. Publicly available c. Internally available d. Restricted access e. Available to buy f. Not available *(please choose the applicable letter; more options are possible)*
Heat waves	High Medium Low			
Droughts	High Medium Low			
Wildfires	High Medium Low			
Cold waves	High Medium Low			

Snowstorms	High Medium Low			
Thunderstorms	High Medium Low			
Flash floods	High Medium Low			
Floods	High Medium Low			
Inland excess water (inland inundation)	High Medium Low			
Shallow landslides	High Medium Low			
Mudflows	High Medium Low			
Debris flows	High Medium Low			
Rock falls	High Medium Low			

Table 6b. Historic data regarding heat waves

HISTORIC HEAT WAVES, DETAILED DATA	***Availability*** *(YES/NO)*	***Accessiblity*** a. Online availablity b. Publicly available c. Internally available d. Restricted access e. Available to buy f. Not available *(please choose the applicable letter; more options are possible)*
Time span:	*Please indicate the period for which data are available (e.g. from 1960)*	
Number of events:		
Characteristics of the natural process		
Date of event		
Duration		
Maximum temperature during the heatwave (°C)		
Disaster documentation (Consequences)		
Number of days with electricity shortage (due to air-conditioning electricity consumption)		
Human casualties: • Number of deaths (human victims) • Number of humans with health problems (number of ambulance calls/hospital admissions)		
Newspaper archives		
Photographic documentation of events (ground/aerial/satellite)		
Estimated total damage *(EUR)*		
Material loss of local infrastructure and utilities *(EUR)*:		

• Critical infrastructures *(see above, e.g. rails)* • Drinking water supply/network • Waste and waste water management stations • Utility (electricity, water) bills increase compared to the previous month(s) in EUR		
• Material loss of agriculture (loss of yield in EUR)		
• Additional information *(Please specify)*		

Table 6c. Historic data regarding droughts

HISTORIC DROUGHTS, DETAILED DATA	***Availability*** *(YES/NO)*	***Accessiblity*** a. Online availablity b. Publicly available c. Internally available d. Restricted access e. Available to buy f. Not available *(please choose the applicable letter; more options are possible)*
Time span:	*Please indicate the period for which data are available (e.g. from 1960)*	
Number of events:		
Characteristics of the natural process		
Date of event		
Duration (number of days without precipitation)		
Affected area/extent, GIS		
Maximum temperature		
Secondary effects (wildfires)		
Damage documentation (Consequences)		

Water scarcity (number of days with water consumption restriction)		
Infections (due to poor water supply)		
Human casualties: • Number of deaths (human victims) • Number of humans infected with diseases (e.g. due to poor water quality) • Number of local inhabitants affected by the disaster (having at least material loss)		
Newspaper archives		
Photographic documentation of events (ground/aerial/satellite)		
Estimated total damage *(EUR)*		
Material loss of local infrastructure and utilities *(EUR)*: • Drinking water supply/network • Waste and waste water management stations		
• Material loss of agriculture (loss of yield in EUR)		
• Additional information *(Please specify)*		

Table 6d. Historic data regarding wildfires

HISTORIC WILDFIRES, DETAILED DATA	***Availability*** *(YES/NO)*	***Accessiblity*** a. Online availablity b. Publicly available c. Internally available d. Restricted access e. Available to buy f. Not available *(please choose the applicable letter; more options are possible)*
Time span:	*Please indicate the period for which*	

	data are available (e.g. from 1960)	
Number of events:		
Characteristics of the natural process		
Date of event		
Duration		
Affected area/extent, GIS		
Size of the affected area (hectares)		
Maximum air temperature in time of ignition		
Number of days without precipitation (duration)		
Size of the affected vegatation type (hectares): • forest - softwood - hardwood • bush • meadow • agricultural area (e.g. crop field)		
Size of the affected populated area (hectares)		
Size of the affected area under nature conservation (hectares)		
Damager documentation (Consequences)		
Cause of ignition		
Duration of extinguishing the fire (hours, days)		
Secondary effects (smoke pollution)		
Human casualties: • Number of deaths (human victims) • Number of humans injured • Number of humans suffered/got ill from smoke inhalation		

• Number of local inhabitants got homeless/lost their homes • Number of local inhabitants evacuated • Number of local inhabitants affected by the disaster (having at least material loss)		
Newspaper archives		
Photographic documentation of events (ground/aerial/satellite)		
Estimated total damage *(EUR)*		
Material loss of residential buildings • Number of affected houses - entirely destroyed - partially damaged • Total material loss *(EUR)*		
Material loss of local infrastructure and utilities *(EUR)*: • Public institutions (buildings) • Critical infrastructures *(see above)* • Drinking water supply/network • Waste and waste water management stations		
• Material loss of industrial facilities *(EUR, please indicate facilities subject to IPPC and SEVESO II Directive)*		
• Material loss of agriculture (loss of yield in EUR)		
• Material loss of natural conservation		
• Additional informaiton *(Please specify)*		

Table 6e. Historic data regarding cold waves

HISTORIC COLD WAVES, DETAILED DATA	***Availability*** *(YES/NO)*	***Accessiblity*** a. Online availablity

		b. Publicly available c. Internally available d. Restricted access e. Available to buy f. Not available *(please choose the applicable letter; more options are possible)*
Time span:	*Please indicate the period for which data are available (e.g. from 1960)*	
Number of events:		
Characteristics of the natural process		
Date of event		
Duration		
Minimum temperature		
Heavy icing, ice blockage		
Damage documentation (Consequences)		
Human casualties: • Number of deaths (human victims due to hypothermia) • Number of humans injured • Number of local inhabitants evacuated • Number of local inhabitants affected by the disaster (having at least material loss)		
Newspaper archives		
Photographic documentation of events (ground/aerial/satellite)		
Estimated total damage *(EUR)*		
Material loss of reisidential buildings • Number of affected houses (lack of heating) • Total material loss *(EUR)*		

Material loss of local infrastructure and utilities *(EUR)*: • Public institutions (buildings) • Critical infrastructures *(see above)* • Drinking water supply/network (pipeline freeze) • Waste and waste water management stations • Utility (electricity, fuel) bills increase compared to the previous month(s) in EUR		
• Material loss of industrial facilities *(EUR, please indicate facilities subject to IPPC and SEVESO II Directive)*		
• Material loss of agriculture (loss of yield in EUR)		
• Additional information *(Please specify)*		

Table 6f. Historic data regarding snowstorms

HISTORIC SNOWSTORMS, DETAILED DATA	***Availability*** *(YES/NO)*	***Accessiblity*** a. Online availablity b. Publicly available c. Internally available d. Restricted access e. Available to buy f. Not available *(please choose the applicable letter; more options are possible)*
Time span:	*Please indicate the period for which data are available (e.g. from 1960)*	
Number of events:		
Characteristics of the natural process		
Date of event		
Duration		
Affected area/extent, GIS		

Maximum depth of snow (cm)		
Damage documentation (Consequences)		
Snowdrifts: • Number of people being blocked • Public institutions being blocked (e.g. hospitals) • Duration *and* number of people affected by - Lack of medical care - Food supply disruptions - Power blackouts		
Human casualties: • Number of deaths (human victims) • Number of humans injured • Number of local inhabitants evacuated • Number of local inhabitants affected by the disaster (having at least material loss)		
Newspaper archives		
Photographic documentation of events (ground/aerial/satellite)		
Material loss of residential buildings • Number of affected houses • Total material loss *(EUR)*		
Material loss of local infrastructure and utilities *(EUR)*: • Public institutions (buildings) • Critical infrastructures *(see above)* • Drinking water supply/network • Waste and waste water management stations		
• Material loss of industrial facilities *(EUR, please indicate facilities subject to IPPC and SEVESO II Directive)*		
• Material loss of agriculture (loss of yield in EUR)		

• Additional information *(Please specify)*		
HISTORIC THUNDERSTORMS, DETAILED DATA	***Availability*** *(YES/NO)*	***Accessiblity*** a. Online availablity b. Publicly available c. Internally available d. Restricted access e. Available to buy f. Not available *(please choose the applicable letter; more options are possible)*
Time span:	*Please indicate the period for which data are available (e.g. from 1960)*	
Number of events:		
Characteristics of the natural process		
Date of event		
Duration		
Affected area/extent, GIS		
Formation of tornadoes/tornado sightings		
Lightning strucks		
Hailstorms		
Type of precipitation (e.g. rain, sleet etc.)		
Total amount of precipitation during the event (mm)		
Maximum precipiation intensity during the event (mm/hour)		
Maximum wind speed during the event (km/h, Beaufort number)		
Damage documentation (Consequences)		
Human casualties: • Number of deaths (human victims) • Number of humans injured		

• Number of local inhabitants got homeless/lost their homes • Number of local inhabitants evacuated • Number of local inhabitants affected by the disaster (having at least material loss)		
Newspaper archives		
Photographic documentation of events (ground/aerial/satellite)		
Estimated total damage *(EUR)*		
Material loss of residential buildings • Number of affected houses (e.g. struck by lightning) - entirely destroyed • - partially damaged • Total material loss *(EUR)*		
Material loss of local infrastructure and utilities *(EUR)*: • Public institutions (buildings) • Critical infrastructures *(*Drinking water supply/network • Waste and waste water management stations		
• Material loss of industrial facilities *(EUR, please indicate facilities subject to IPPC and SEVESO II Directive)*		
• Material loss of agriculture (loss of yield in EUR)		
• Additional information *(Please specify)*		

Table 6h. Historic data regarding flash floods

HISTORIC FLASH FLOODS, DETAILED DATA	***Availability*** *(YES/NO)*	***Accessiblity*** a. Online availablity b. Publicly available c. Internally available d. Restricted access e. Available to buy f. Not available *(please choose the applicable letter; more options are possible)*
Time span:	*Please indicate the period for which data are available (e.g. from 1960)*	
Number of events:		
Characteristics of the natural process		
Date of event		
Name of the watercourse(s) flooded		
Duration of rainfall cuased the flashflood		
Maximum precipitation intensity within the rainfall event (mm/h)		
Total precipitation (mm)		
Affected area/extent, GIS		
Maximum discharge (volume rate of water flow)		
Maximum water level (cm)		
Secondary effects (natural processes, e.g. landslide, mudflow, rock fall)		
Damage documentation (Consequences)		
Human casualties: • Number of deaths (human victims) • Number of humans injured		

• Number of local inhabitants got homeless/lost their homes • Number of local inhabitants evacuated • Number of local inhabitants affectedby the disaster (having at least material loss)		
Drinking water contamination due to wastewater leaching		
Newspaper archives		
Photographic documentation of events (ground/aerial/satellite)		
Estimated total damage *(EUR)*		
Material loss of residential buildings • Number of affected houses - entirely destroyed • - partially damaged • Total material loss *(EUR)*		
Material loss of local infrastructure and utilities *(EUR)*: • Public institutions (buildings) • Critical infrastructures *(see above)* • Drinking water supply/network • Waste and waste water management stations • Drainage channel network • Flood protection structures		
• Material loss of industrial facilities *(EUR, please indicate facilities subject to IPPC and SEVESO II Directive)*		
• Material loss of agriculture (loss of yield in EUR)		
• Additional information *(Please specify)*		

Table 6i. Historic data regarding floods

HISTORIC FLOODS, DETAILED DATA	***Availability*** *(YES/NO)*	***Accessiblity*** a. Online availablity b. Publicly available c. Internally available d. Restricted access e. Available to buy f. Not available *(please choose the applicable letter; more options are possible)*
Time span:	*Please indicate the period for which data are available (e.g. from 1960)*	
Number of events:		
Characteristics of the natural process		
Date of event		
Name of the watercourse(s) flooded		
Duration		
Affected area/extent (inundated area), GIS		
Maximum discharge (volume rate of water flow)		
Maximum water level (cm)		
Type of flood: • spring flood • summer flood • icy flood • other		
Secondary effects (natural processes, e.g. landslides)		
Damage documentation (Consequences)		
Dam breach		

Human casualties: • Number of deaths (human victims) • Number of humans injured • Number of local inhabitants got homeless/lost their homes • Number of local inhabitants evacuated • Number of local inhabitants affected by the disaster (having at least material loss)		
Newspaper archives		
Photographic documentation of events (ground/aerial/satellite)		
Estimated total damage *(EUR)*		
Material loss of residential buildings • Number of affected houses - entirely destroyed - partially damaged • Total material loss *(EUR)*		
Material loss of local infrastructure and utilities *(EUR)*: • Public institutions (buildings) • Critical infrastructures *(see above)* • Drinking water supply/network • Waste and waste water management stations • Flood protection structures		
• Material loss of industrial facilities *(EUR, please indicate facilities subject to IPPC and SEVESO II Directive)*		
• Material loss of agriculture (loss of yield in EUR)		
• Additional Information *(Please specify)*		

Table 6j. Historic data regarding inland excess water (inland inundation)

HISTORIC INLAND EXCESS WATER (INLAND INUNDATION), DETAILED DATA	***Availability*** *(YES/NO)*	***Accessiblity*** a. Online availablity b. Publicly available c. Internally available d. Restricted access e. Available to buy f. Not available *(please choose the applicable letter; more options are possible)*
Time span	*Please indicate the period for which data are available (e.g. from 1960)*	
Number of events		
Characteristics of the natural process		
Date of event		
Duration		
Affected area/extent, GIS		
Maximum water level (cm)		
Damage documentation (Consequences)		
Water supply problems (drinking water contamination)		
Human casualties: • Number of deaths (human victims) • Number of humans injured • Number of local inhabitants evacuated • Number of local inhabitants affected by the disaster (having at least material loss)		
Newspaper archives		
Photographic documentation of events (ground/aerial/satellite)		

Estimated total damage *(EUR)*		
Material loss of residential building • Number of affected houses (basement flooding) • Total material loss *(EUR)*		
Material loss of local infrastructure and utilities *(EUR)*: • Public institutions (buildings) • Critical infrastructures *(see above)* • Drinking water supply/network • Waste and waste water management stations		
• Material loss of industrial facilities *(EUR, please indicate facilities subject to IPPC and SEVESO II Directive)*		
• Material loss of agriculture (loss of yield in EUR)		
• Additional information *(Please specify)*		

Table 6k. Historic data regarding shallow landslides

HISTORIC SHALLOW LANDSLIDES, DETAILED DATA	***Availability*** *(YES/NO)*	***Accessiblity*** a. Online availablity b. Publicly available c. Internally available d. Restricted access e. Available to buy f. Not available *(please choose the applicable letter; more options are possible)*
Time span:	*Please indicate the period for which data are available (e.g. from 1960)*	
Number of events:		
Characteristics of the natural process		
Date of event		

Duration		
Affected area/extent, GIS		
Total volume of landslide (m^3)		
Secondary effects (e.g. geomorphological alteration)		
Damage documentation (Consequences)		
Human casualties: • Number of deaths (human victims) • Number of humans injured • Number of local inhabitants got homeless/lost their homes • Number of local inhabitants evacuated • Number of local inhabitants affected by the disaster (having at least material loss)		
Newspaper archives		
Photographic documentation of events (ground/aerial/satellite)		
Estimated total damage *(EUR)*		
Material loss of residential buildings • Number of affected houses - entirely destroyed - partially damaged • Total material loss *(EUR)*		
Material loss of local infrastructure and utilities *(EUR)*: • Public institutions (buildings) • Critical infrastructures *(especially roads)* • Drinking water supply/network • Waste and waste water management stations		
• Material loss of industrial facilities *(EUR, please indicate facilities subject to IPPC and SEVESO II Directive)*		

• Material loss of agriculture (loss of yield in EUR)		
• Additional information *(Please specify)*		

Table 6l. Historic data regarding mudflows

HISTORIC MUDFLOWS, DETAILED DATA	***Availability*** *(YES/NO)*	***Accessiblity*** a. Online availablity b. Publicly available c. Internally available d. Restricted access e. Available to buy f. Not available *(please choose the applicable letter; more options are possible)*
Time span:	*Please indicate the period for which data are available (e.g. from 1960)*	
Number of events:		
Characteristics of the natural process		
Date of event		
Duration		
Affected area/extent, GIS		
Maximum depth/level of mud (cm)		
Maximum flow rate of mud (km/h)		
Damage documentation (Consequences)		
Human casualties: • Number of deaths (human victims) • Number of humans injured • Number of local inhabitants got homeless/lost their homes • Number of local inhabitants evacuated		

• Number of local inhabitants affected by the disaster (having at least material loss)		
Newspaper archives		
Photographic documentation of events (ground/aerial/satellite)		
Estimated total damage *(EUR)*		
Material loss of residential buildings • Number of affected houses - entirely destroyed - partially damaged • Total material loss *(EUR)*		
Material loss of local infrastructure and utilities *(EUR)*: • Public institutions (buildings) • Critical infrastructures *(see above)* • Drinking water supply/network • Waste and waste water management stations		
• Material loss of industrial facilities *(EUR, please indicate facilities subject to IPPC and SEVESO II Directive)*		
• Material loss of agriculture (loss of yield in EUR)		
• Additional information *(Please specify)*		

Table 6m. Historic data regarding debris flows

HISTORIC DEBRIS FLOWS, DETAILED DATA	***Availability*** *(YES/NO)*	***Accessiblity*** a. Online availablity b. Publicly available c. Internally available d. Restricted access e. Available to buy f. Not available

		(please choose the applicable letter; more options are possible)
Time span:	*Please indicate the period for which data are available (e.g. from 1960)*	
Number of events:		
Characteristics of the natural process		
Date of event		
Duration		
Affected area/extent, GIS		
Total volume of debris flow (m^3)		
Intensity of the event (average height of debris)		
Secondary effects (e.g. geomorphological alteration)		
Damage documentation (Consequences)		
Human casualties: • Number of deaths (human victims) • Number of humans injured • Number of local inhabitants got homeless/lost their homes • Number of local inhabitants evacuated • Number of local inhabitants affected by the disaster (having at least material loss)		
Newspaper archives		
Photographic documentation of events (ground/aerial/satellite)		
Estimated total damage *(EUR)*		
Material loss of residential buildings • Number of affected houses - entirely destroyed - partially damaged • Total material loss *(EUR)*		

Material loss of local infrastructure and utilities *(EUR)*: • Public institutions (buildings) • Critical infrastructures *(especially roads)* • Drinking water supply/network • Waste and waste water management stations		
• Material loss of industrial facilities *(EUR, please indicate facilities subject to IPPC and SEVESO II Directive)*		
• Material loss of agriculture (loss of yield in EUR)		
• Additional information *(Please specify)*		

Table 6n. Historic data regarding rockfalls

HISTORIC ROCKFALLS, DETAILED DATA	***Availability*** *(YES/NO)*	***Accessiblity*** a. Online availablity b. Publicly available c. Internally available d. Restricted access e. Available to buy f. Not available *(please choose the applicable letter; more options are possible)*
Time span:	*Please indicate the period for which data are available (e.g. from 1960)*	
Number of events:		
Characteristics of the natural process		
Date of event		
Duration		
Affected area/extent, GIS		
Total mass of rock (m^3)		
Damage documentation (Consequences)		

Human casualties: • Number of deaths (human victims) • Number of humans injured • Number of local inhabitants got homeless/lost their homes • Number of local inhabitants evacuated • Number of local inhabitants affected by the disaster (having at least material loss)		
Newspaper archives		
Photographic documentation of events (ground/aerial/satellite)		
Estimated total damage *(EUR)*		
Material loss of residential buildings • Number of affected houses • Total material loss *(EUR)*		
Material loss of local infrastructure and utilities *(EUR)*: • Public institutions (buildings) • Critical infrastructures *(especially roads)* • Drinking water supply/network • Waste and waste water management stations		
• Material loss of industrial facilities *(EUR, please indicate facilities subject to IPPC and SEVESO II Directive)*		
• Material loss of agriculture (loss of yield in EUR)		
• Additional information *(Please specify)*		

Table 7. Information on national meteorological extremity thresholds

Official Thresholds to define:	Threshold (in Celcius, mm, etc. and duration where relevant)
Heat waves	
Cold waves	
Extreme rainfall	
Extreme snowfall	
Extreme wind	

Table 8. Data regarding extreme weather events

EXTREME WEATHER EVENTS			
LOCAL METEOROLOGICAL DATA **Data for observing changing trends in local climate patterns**			
Meteorological station(s) *(please provide the station's coordinates)*			
Time span *(please indicate the base year from which data being provided, e.g. since 1960)*			
A. Meteorological data of extreme weather periods *(if aggregated data are not available than proceed to part B.)*	Period	Data	***Accessiblity*** a. Online availablity b. Publicly available c. Internally available d. Restricted access e. Available to buy f. Not available *(please choose the applicable letter; more options are possible)*
Temperature:			
Extreme cold days – days with lower than a T_{min} (minimum temperature, see Table 7.) of official threshold per year - *(where there is no official threshold : less than of - 10°C per year)*			

Extreme hot days – days with higher than a T_{max} (maximum temperature see table 7) of official threshold per year *(where there is no official threshold :* more than 35 °C per year			
Heat waves – periods with a T_{mean}(mean temperature) higher than the official threshold (or 27 °C where no threshold exists) for at least 3 consecutive days			
Precipitation:			
Extreme amount of rain – days with more than the daily official precipitation threshold, see Table 7 (20 mm where no threshold exists)			
Extreme amount of snow – days with more than the daily official precipitation threshold, see Table 7 (20cm where no threshold exists)			
Wind:			
Days over the wind speed threshold- see table 7 (if there is no threshold: dayswith more than 60 km/h wind maximum per year)			
B. Daily meteorological datasets (*only if aggregated data are not available)*			
Air temperature (°C; at a height of 2 m above surface): T_{max} T_{min} T_{mean}			
Precipitation (mm; daily total; *please indicate snow*)			
Wind speed (m/s, daily maximum)			
Other useful data			

Table 9. DATA REGARDING LOCAL CLIMATE CHANGE – SCENARIO MAPS AND PREDICTIONS

Type of Data	**Time span (future)**	**Spatial and temporal Resolution/Scale of the map** (if applicable)	**Coverage/Extent of the map** (if applicable)	**Information**	***Accessiblity*** a. Online availablity b. Publicly available c. Internally available d. Restricted access e. Available to buy f. Not available *(please choose the applicable letter; more options are possible)*
Precipitation data for the future					
Temperature data for the future					
Vegetation change for the future					
Future land use change					
Climate change models					
Modeled hazard data(e.g. future flood modelling)					

2.2 SECTION II: Legal and Institutional Background

2.2.1 National Level

1. Legal background :

1. Does your national legislation deal with disaster management and civil protection in an integrated way? *(or the two fields are separated in the legislation)*

- Yes, it is an integrated system — proceed to question 1/a and go on with 1/b,c!
- No, the two are detached — proceed to question 1/d and go on with 1/e!

1/a **If the system is integrated**, in which year the system became integrated? ……..

What was the main reason of this integration? Please, choose from the options below! (More options are possible!)

- economic reasons/ cost effectiveness
- alignment to the international approach
- integrated planning and implementation approach

other: ……..

1/b If the disaster management system is integrated, what is your view about it. Based on your experiences how do you evealuate the system?

……
……
……
……
……
•

1/c If the disaster management system is integrated by law, what are the relevant law(s)/regulation(s) for the disaster management organisation? *(More options are possible!)* Please also give the year they came into force!

Year:

- act ……
- governmental decree ……
- decree ……
- authorities' decision ……
- other : ……...

1/d**If the system is not integrated**, what separate laws/regulations are relevant for each disaster management and civil protection areas? *(More options are possible)* Please also give the year they

came into force!

Disaster management:

Year:

- act ……
- governmental decree ……
- decree ……
- authorities' decision ……
- other :

Civil protection:

Year:

- act ……
- governmental decree ……
- decision ……
- authorities' decision ……
- other : ……...

1/e 1/e. Based on your experience what are the advanatages and disadvantages of the separated system?

……
……
……
……

2. What types of action plans exist in the field of disaster management and civil protection in your country at national/regional/local level? Please name them in the first column of the table! *(If the system is not integrated please duplicate the table and separate the disaster management and civil protection planning document types.)*

2/a What are the general requirements *(obligatory elements)* of these plans? Who are obliged to prepare, agree, and finally approve them? Please fill in the table following the example given in the manual.

Type of action plan	**Who is obliged to prepare the plan**	**Who prepares the plan?**	**Who is legally adopting the plan?**

2/b. Do you apply a **top-down** or a **bottom-up** approach in the harmonisation of the plans? (Please underline

and explain if necessary.)

- **top-down**
- **bottom-up**

……
……
……
……

3. Hazard categories applied at the level of municipalities indicate the degree of risk exposure. It informs the disaster management agencies about the required rescue actions in case of emergency. What kind of and how many municipal hazard categories exist according to the disaster management or/and civil protection legislation? Please, fill in the table below!

Municipal hazard categories (which determines the level of disaster management measure to be taken)	**Hazard impacts taken into account in ranking**

2. Organisational framework

1/a. Please provide an organigram (organisational chart) of the disaster management organisational framework with special emphasis on the regional levels and their powers/competences in the hierarchy!

1/b Please, provide a map for the regional directorates of the disaster management system in your country indicating their headquarters.

2. **In case the disaster management and civil protection is <u>separated</u>** in your country, are their various regional levels harmonised/synchronised? Do all organisations in question use the same regional levels in their hierarchy?

- Yes proceed to question 2/a!
- No proceed to question 2/b!

2/a If yes, is there a cooperation between these units? Does cooperation regulated by law? What kind of cooperation exists between them*? (local level operational or strategic high level etc.)*

……..
……..
……..
……..
……..

2/b If no, what levels are used in the organisational hierarchy?

……..
……..
……..
……..
……..

2.2.2 Local Level – Pilot Areas

1/a In case of an integrated disaster management and civil protection system, what kind of operational unit is based in your municipality?

a. directorate
b. local operational unit
c. other
d. none

1/b In case there is no such integrated system, what operational units can be found in your municipality?

a. disaster management unit
b. civil protection unit
c. fire brigade
d. others ……...

2. What is the territorial scope of action (intervention area) of these units? (more than one answers are possible)

a. county
b. only within the city limits
c. the town and its agglomeration *(organic unit)*
d. the town and its region *(administrative region)*
e. based on environmental conditions (e.g. a water catchment?
f. other : ……...

3. In case the legislation makes it obligatory for municipalities (local governments) to establish a **disaster management committee** (with a decision making authority), what is the composition and who is the leading it?

…….....
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4. What is the role of the mayor and the local assembly in case of hazard events?

mayor:

…….....
.....
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.....
local assembly:
.....
.....
.....
.....
.....

5. Has there ever been a **survey** on the evaluation of the preparedness of the civil population for disaster situations?
YES / NO

If yes, who has performed the survey? Are the results available to the public? And if yes, what were the main findings?
.....
.....
.....
.....
.....
.....

6. What media are used for preparing the civil population for such situations? *(More options are possible!)*

Type of media	✓
leaflets	
forums	
local newspapers	
loudspeaker	
presentations at schools and workplaces	
others (e.g. social media, Mobile SMS etc.)	
there are no such actions	

8. What is the frequency of these for preparatory actions?

Frequency of preparatory actions	✓
several times a year	
once a year	
in every 2-5 years	
in every 5-10 years	
never	
other	

9. Has there ever been a disaster event simulation in your municipality?
YES / NO

What kind of event(s) was (were) simulated?
……
.....

Was the simulation legally required?
……
.....
……
.....

Which group of local citizens/organizations/companies took part in the simulation?
……
.....
……
.....

How many local people were involved in the simulation?
……
.....
.....
.....

APPENDIX I: Risk Assessment Terminology

Accebtable risk	Degree of human and material loss that is perceived by the community or relevant authorities as tolerable in actions to minimize disaster risk. (UNDHA, 1992),
Adaptation	Adjustment in natural or human systems to a new or changing environment. It refers to adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.(IPCC)
Climate change	A phenomenon which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods. (IPCC)
Climate variabiity	The climatic differences from one year to the next (Smith, 2004)
Cold waves	Marked cooling of the air, or the invasion of very warm air, over a large area. It is an extended period of above normal cold temperatures, a drop of atmospheric average temperature well above the averages of a region, with effects on human populations, crops, properties and services. (GLIDE; WMO)
Consequences	Negative effects of a disaster expressed in terms of human impacts, economic and environmental impacts, and political/social impacts (EC, 2010)
Debris flows	Debris flows are rapid gravity-induced mass movements that consist of sediment saturated with water that owe their destructive power to the interaction of solid and fluid forces (Iverson 1997).
Domino Effects (Cascading failure)	It means that there is a high probability that occurrence of certain natural hazard is likely to trigger secondary hazards. In other words, primary and secondary hazards tend to couple whereas the chain might be longer than just two events – e.g. an earthquake will cause a landslide that will dam the river valley and consequent failure of the dam creates a flash flood, etc. (Delmonaco et al., 2006)
Drought	Drought can be defined as a condition of abnormal dry weather resulting in a serious hydrological imbalance, with consequences such as losses of standing crops and shortage of water needed by people and livestock. (Alexander, 1999)
ECI	European critical infrastructures - This directive sets up a procedure for identifying and designating European critical infrastructures (ECIs). At the same time, it provides a common approach for assessing these infrastructures, with a view to improving them to better protect the needs of citizens. (europe.eu, 2008/114/EC)
Economic and environmental impacts	The sum of the costs of cure or healthcare, cost of immediate or longer-term emergency measures, costs of restoration of buildings, infrastructure, property, cultural heritage, costs of environmental restoration and other environmental costs.(EC, 2010)

Exposure	People, property, systems, or other elements present in hazard zones that are thereby subject to potential losses.(EC, 2010)
Extreme weather event	An event that is rare within its statistical reference distribution at a particular place. (IPCC)
Flash flood	Flash floods are an extreme, though short-lived, form of inundation. They usually occur under stationary or slowly moving clusters of thunderstorms, or result from motionless or slowly progressing storms which have an unabated inflow of air that has a high moisture content. They usually last less than 24 hours but the resulting rainfall intensity greatly exceeds infliltration capacity (Alexander, 1999).
Flood	A flood can be defined as the height or stage, of water above some given point such as the banks of a river channel. (Alexander, 1999)
Hazard	A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.(EC, 2010)
Hazard assessments	To determine the probability of occurrence of a certain hazard of certain intensity. (EC, 2010)
Hazard map	Type of a map that portrays levels of a particular hazard (or hazards).(EC, 2010)
Heat waves	A heat wave is a prolonged period of excessively hot weather, which may be accompanied by high humidity. There is no universal definition of a heat wave the term is relative to the usual weather in the area and relative to normal temperatures for the season.Typically a heat wave lasts two or more days. (NOAA, online glossary)
Human impacts	The quantitative measurement of the following factors: number of deaths, number of severely injured or ill people, and number of permanently displaced people.(EC, 2010)
Infrastructure	The basic equipment, utilities, productive enterprises, installations, institutions, and services essential for the development, operation, and growth of an organization, city, or nation. (IPCC)
Inland excess water	Inland excess water is a temporary water inundation that occurs in flat land areas outside a river flood plain. Its two main sources are precipitation (rain and/or melted snow) and water table rise. This redundant surface water is not flowing down to lower areas due to the topography of the terrain and it can not also infiltrate into the soil due to very high groundwater levels or impermeable soils.
IPPC	Integrated Pollution Prevention and Control - EU's obligations with which industrial and agricultural activities with a high pollution potential must comply. It establishes a procedure for authorising these activities and sets minimum requirements to be included in all permits, particularly in terms of pollutants released. The aim is to prevent or reduce pollution of the atmosphere, water and soil, as well as the

	quantities of waste arising from industrial and agricultural installations, to ensure a high level of environmental protection. (2008/1/EC, europa.eu)
Mudflows	Mudflows are a type of landsldies. They have been variously defined, by must contain between 20 and 80 per cent of fine sediments (which are ussually an admixture of sand, silt and clay) and be saturated with water. (Alexander, 1999)
Multi-risk assessments	To determine the total risk from several hazards either occurring at the same time or shortly following each other, because they are dependent from one another or because they are caused by the same triggering event or hazard; or merely threatening the same elements at risk (vulnerable/ exposed elements) without chronological coincidence. (EC, 2010)
Political/social impacts	Usually rated on a semi-quantitative scale and may include categories such as public outrage and anxiety, encroachment of the territory, infringement of the international position, violation of the democratic system, and social psychological impact, impact on public order and safety, political implications, psychological implications, and damage to cultural assets (EC, 2010)
Resilience	The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions. (IPCC)
Risk	A combination of the consequences of an event (hazard) and the associated likelihood/probability of its occurrence.(EC, 2010)
Risk analysis	The process to comprehend the nature of risk and to determine the level of risk. (EC, 2010)
Risk assessment	The overall process of risk identification, risk analysis, and risk evaluation.(EC, 2010)
Risk assessment	A methodology to determine the nature and extent of risk by analysing potential hazards and evaluating existing conditions of vulnerability that could pose a potential threat or harm to people, property, livelihoods and the environment on which they depend. The process of conducting a risk assessment is based on a review of both the technical features of hazards such as their location, intensity, frequency and probability; and also the analysis of the physical, social, economic and environmental dimensions of vulnerability and exposure, while taking particular account of the coping capabilities pertinent to the risk scenarios. (UNISDR, 2008)
Risk evaluation	The process of comparing the results of risk analysis with risk criteria to determine whether the risk and/or its magnitude is acceptable or tolerable. (EC, 2010)
Risk identification	The process of finding, recognizing and describing risks. (EC, 2010)
Risk map	It portrays levels of risk across a geographical area. Such maps can focus on one

	risk only or include different types of risks. (EC, 2010)
Risk Matrix	A graphical representation of risk relating the relative likelihood of occurrence and the relative impact (human, economic/environmetnal, political/social) of a hazrd or risk scenario. (EC, 2010)
Risk scenario	A representation of one single-risk or multi-risk situation leading to significant impacts, selected for the purpose of assessing in more detail a particular type of risk for which it is representative, or constitutes an informative example or illustration. (EC, 2010)
Rockfalls	Movements of debris (mainly rock transported through the air. They occur on steep faces where bedrock weaknesses, such as joints, bedding and exfoliation surfaces are present (Smith, 2004).
Scenario (generic)	A plausible and often simplified description of how the future may develop, based on a coherent and internally consistent set of assumptions about key driving forces and relationships (IPCC)
SEVESO II	The Seveso Directive obliges Member States to ensure that operators have a policy in place to prevent major accidents. Operators handling dangerous substances above certain thresholds must regularly inform the public likely to be affected by an accident, providing safety reports, a safety management system and an internal emergency plan. Member States must ensure that emergency plans are in place for the surrounding areas and that mitigation actions are planned. Account must also be taken of these objectives in land-use planning. (europe.eu 96/82/EC)
Shallow landslides	Landslides can be defined as the downslope movement of soil, rock, or debris due to gravitational forces that can be triggered by heavy rainfall, rapid snow melting, slope undercutting, etc. (Crozier 1999; Glade and Crozier 2005). Shallow rapid landslides normally occur on slopes covered by thin colluvium and exhibit an initial translational sliding failure and a subsequent disaggregation to form into a debris flow. (Korck et al., 2011)
Single risk assessments	To determine the singular risk (i.e. likelihood and consequences) of one particular hazard (e.g. flood) or one particular type of hazard (e.g. flooding) occurring in a particular geographic area during a given period of time. (EC, 2010)
Snowstorm	A snowstorm or blizzard is a severe snowstorm characterized by strong winds and low temperatures. Snow storms have sustained winds or frequent gusts that are greater than or equal to 56 km/h with blowing or drifting snow which reduces visibility to 400 meters or less and lasts for a prolonged period of time — typically three hours or more. (US National Weather Service, 2009)
Thunderstorm	A local storm produced by a cumulonimbus cloud and accompanied by lightning and thunder (NOAA, online glossary)

Uncertainties	Uncertainty exists where there is a lack of knowledge concerning outcomes. Uncertainty may result e.g. from imprecise knowledge of risk, from model uncertainty which my be related to vague process knowledge, or imprecise data measures, etc. Uncertainty may effect both in a risk approach, the probability and the consequences. (Schmidt-Thome et al., 2006)
Vulnerability	The characteristics and circumstances of a community, system or asset that make it susceptible to, or unable to cope with the adverse effects of climate change (hazard). It expresses the part or percentage of exposure that is likely to be lost due to a hazard. (EC, 2010, UNISDR, 2009) or Degree of loss (from 0% to 100%) resulting from a potentially damaging phenomenon.
Vulnerability map	A map that portrays levels of vulnerability. It may include one or more than one type of vulnerability (e.g., death, injury, property damage). (EC, 2010)
Wildfires	Wildfire is a generic term for uncontroled fires fuelled by natural vegetation. In general, high temeperatures and drought following an active period of vegetation growth provide the most dangerous conditions, (Smith, 2004)

Many thanks for taking the time to complete this questionnaire. The information will be used for the development of the cmmon risk assessment methodology. The final report concerning the answers of all the partners will be presented in the next SEERisk Workshop in Vienna.

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