

COMMISSION NOTICE

Reporting Guidelines on Disaster Risk Management, Art. 6(1)d of Decision No 1313/2013/EU

(2019/C 428/07)

Note: References to Decision No 1313/2013/EU (OJ L 347, 20.12.2013, p. 924) should be understood as: Decision No 1313/2013/EU as amended by Decision (EU) 2019/420 (OJ L 77 I, 20.3.2019, p. 1)

In light of Article 28(1)a of Decision No 1313/2013/EU, where reference is made to Member States, it shall be understood as including Participating States as defined in Article 4(12) of Decision No 1313/2013/EU.

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Reporting Guidelines on Disaster Risk Management, Art. 6(1)d of Decision No 1313/2013/EU**Introduction**

Decision No 1313/2013/EU of the European Parliament and of the Council of 17 December 2013 on a Union Civil Protection Mechanism ⁽¹⁾ on a Union Civil Protection Mechanism (UCPM), as amended on 21 March 2019 ⁽²⁾, requires Member States to provide the Commission with summaries of the relevant aspects of their risk assessment and the assessment of their risk management capability, focusing on key risks. It also requires Member States to provide information on the priority prevention and preparedness measures needed to address key risks with cross-border impacts, and, where appropriate, low probability risks with a high impact ⁽³⁾.

The Commission has been tasked, together with Member States, to develop guidelines on the submission of the summary by 22 December 2019 ⁽⁴⁾.

These guidelines take the form of a Template, listing all main questions to be addressed in the national summaries, and accompanying guidance for completing the Template appropriately. These guidelines are non-binding and are designed to help with summarising the relevant aspects of:

1. risk assessment, focusing on key risks,
2. risk management capability assessment, focusing on key risks,
3. and a description of priority prevention and preparedness measures addressing key risks with cross-border impacts and, where appropriate, low probability risks with a high impact.

The summary of relevant elements of the risk assessment and the assessment of risk management capability should focus on key risks. It is the prerogative of the Member States to define key risks. Member States are asked to send their summaries to the Commission for the first time by 31 December 2020. After that, Member States should send them at three-yearly intervals, and whenever a significant change occurs.

In line with Article 6(1), Member States are not required to share sensitive information which, if disclosed, could harm their essential security interests.

These guidelines replace the Commission notice on Risk Management Capability Assessment Guidelines ⁽⁵⁾.

Objective and scope

The guidelines are designed to facilitate reporting by Member States, to help meet the objectives of Decision No 1313/2013/EU, in particular to:

- ‘achieve a high level of protection against disaster by preventing or reducing their potential effects, by fostering a culture of prevention and by improving cooperation between the civil protection and other relevant services’ ⁽⁶⁾;
- provide the Commission with the information needed for it to fulfil its obligations under Article 5, in particular:
 - (a) take action to improve the knowledge base on disaster risks, and to better facilitate and promote cooperation and the sharing of knowledge, the results of scientific research and innovation, best practices and information, including among Member States facing common risks;
 - (b) support and promote Member States’ risk assessment and mapping activity through the sharing of good practices, and facilitate access to specific knowledge and expertise on issues of common interest;

⁽¹⁾ OJ L 347, 20.12.2013, p. 924.

⁽²⁾ Decision (EU) 2019/420 of the European Parliament and of the Council of 13 March 2019 (OJ L 77, 20.3.2019, p. 1).

⁽³⁾ Article 6(1) of Decision No 1313/2013/EU.

⁽⁴⁾ Article 6(3) of Decision No 1313/2013/EU.

⁽⁵⁾ Commission notice, *Risk Management Capability Assessment Guidelines*, (2015/C 261/03) (OJ C 261, 8.8.2015, p. 5).

⁽⁶⁾ Article 3.1 (a) of Decision No 1313/2013/EU.

- (c) establish and regularly update a cross-sectoral overview and map of natural and man-made disaster risks the Union may face, by taking a coherent approach across different policy areas that may address or affect disaster prevention and taking due account of the likely impacts of climate change;
 - (d) encourage an exchange of good practices in preparing national civil protection systems to cope with the impact of climate change;
 - (e) promote and support the development and implementation of Member States' risk management activity through the sharing of good practices, and facilitate access to specific knowledge and expertise on issues of common interest;
 - (f) compile and disseminate the information made available by Member States; organise an exchange of experiences about the assessment of risk management capability; and facilitate the sharing of good practices in prevention and preparedness planning, including through voluntary peer reviews;
 - (g) report periodically, in accordance with the deadlines set out in point (c) of Article 6, to the European Parliament and to the Council on the progress made in the implementation of Article 6;
 - (h) promote the use of various Union funds which may support sustainable disaster prevention and encourage the Member States and regions to exploit those funding opportunities;
 - (i) highlight the importance of risk prevention, support the Member States in awareness-raising, public information and education, and support the Member States' efforts in the provision of public information on alert systems, by providing guidance on such systems, including at a cross-border level;
 - (j) promote prevention measures in the Member States and third countries referred to in Article 28 through the sharing of good practices, and facilitate access to specific knowledge of and expertise in issues of common interest; and
 - (k) in close consultation with Member States, take additional necessary supporting and complementary prevention action in order to achieve the objective specified in point (a) of Article 3(1);
- provide the Commission with the necessary information to establish and support disaster risk management priorities and measures under various EU funds and instruments;
- help to formulate better-informed decisions on how to prioritise and allocate investments in prevention, preparedness and response measures.

As required by the applicable UCPM legislation (Article 6 of Decision No 1313/2013/EU), Member States provided the Commission with summaries of their national risk assessment (December 2015 and 2018) and risk management capability assessments (August 2018). The contributions received revealed that these assessments were compiled on the basis of a variety of processes and methodologies.

These guidelines significantly simplify and streamline the reporting process under Article 6. They build on experience with practical implementation of national risk assessments and mapping of major natural and man-made disaster risks in Member States and on the national risk management capability assessment reports sent to the Commission. They also take account of the previous Commission staff working paper on the 'Risk Assessment and Mapping Guidelines for Disaster Management' ⁽⁷⁾ and the Risk Management Capability Assessment Guidelines ⁽⁸⁾. They take into account requirements under existing EU legislation, and do not affect obligations thereunder ⁽⁹⁾.

⁽⁷⁾ Commission Staff Working Paper (SEC(2010)1626 final), Risk Assessment and Mapping Guidelines for Disaster Management.

⁽⁸⁾ See footnote 5.

⁽⁹⁾ See Annex on *Non-exhaustive list of risks relevant under EU legislation and/or policies* and *Non-exhaustive list of cross-cutting areas of common interest in EU legislation and/or policies*.

TEMPLATE FOR DISASTER RISK MANAGEMENT SUMMARY REPORT

Part I. Risk assessment

1. Risk assessment process

Describe how the risk assessment process fits into the overall disaster risk management framework. Detail legislative, procedural and institutional aspects. Please, explain whether responsibility for the risk assessment lies at national level or at an appropriate sub-national level.

2. Consultation with relevant authorities and stakeholders

Describe the range of relevant authorities and stakeholders involved in the risk assessment process.
If appropriate: Describe the nature of their involvement, specifying their roles and responsibilities.

3. Identifying the key risks at national or sub-national level

Identify the key risks that could have significant adverse human, economic, environmental and political/social impacts (including security).

From the above key risks, identify:

3.1 Any key risks which could have significant adverse cross-border impacts, coming from or affecting the neighbouring country or countries.

3.2 Any key risks with a low probability and high impact.

Where appropriate:

3.3 Identify any key risks expected in future. These may include any emerging risks ⁽¹⁰⁾ that could have significant adverse human, economic, environmental and political/social impacts (including impacts on security).

4. Identifying climate change impacts

Determine which of the above-mentioned key risks are directly linked to climate change impacts. Please take into consideration the existing national and sub-national climate change adaptation strategy and/or action plans ⁽¹¹⁾ or any relevant climate risk and vulnerability assessments, where appropriate.

5. Risk analysis

Describe the scale of levels of probability and impact of the key risks identified (in Q3) including the key cross-border and key risks with a low probability and a high impact and, where appropriate, future and/or emerging risks.

Display the results in a single risk matrix or other visualised graph/model as well, if applicable.

If appropriate: Outline the methods, models and techniques used to assess the probability and impacts of the different risks or risk scenarios.

6. Risk mapping

State whether any risk maps have been produced showing the expected spatial distribution of the key risks as identified at the identification and analysis stages (Q3, Q4 and Q5). If so, include them as appropriate.

⁽¹⁰⁾ See Template (Q3).

⁽¹¹⁾ Links to national adaptation strategies and action plans are also available on Climate Adapt website: <https://climate-adapt.eea.europa.eu/countries-regions/countries>

7. Monitoring and reviewing risk assessment

Outline the system in place for monitoring and reviewing risk assessment so as to factor in new developments.

8. Communicating risk assessment results

Describe the process of communicating and disseminating the results of the national risk assessment. Outline how the risk assessment results are shared among policymakers, various public authorities with different types of responsibility, different levels of administration, and other relevant stakeholders. State whether and how the general public is informed about the results of risk assessment, to make them aware of risks in their country or region and/or enable them to take informed decisions to protect themselves.

Optional: Good practices

Outline recent good practices relevant to Questions 1-8.

Part II. Risk management capability assessment**9. Legislative, procedural and/or institutional framework**

Describe the framework in place for the risk management capability assessment process(es). State whether it is based on a legal act, a strategic plan, an implementation plan or other procedural frameworks.

If appropriate: State how often risk management capability is assessed.

State whether the risk management capability assessment(s) is used for decision-making purposes.

10. Roles and responsibilities of the competent authorities

Describe the roles and responsibilities of the competent authorities at national or sub-national level (as appropriate), distinguishing between risk assessment, prevention, preparedness, and response, and focusing on the management of the key risks identified.

Describe how horizontal coordination (the cross-sectoral approach) is ensured among these competent authorities, focusing on the management of the key risks identified.

11. Roles of relevant stakeholders

State whether relevant stakeholders are informed about and involved in the disaster risk management process(es) for the key risks identified. If they are, describe how.

12. Procedures and measures at national, sub-national and local level

Describe the established procedures to ensure vertical cooperation between the national, sub-national and local level authorities involved in disaster risk management process(es) for the identified key risks.

13. Procedures and measures at cross-border, inter-regional and international level

Describe the procedures established to ensure cooperation at the cross-border, inter-regional and international levels for the disaster risk management of identified key risks. Describe measures in place to ensure disaster risk management for the key risks identified.

If appropriate: State whether disaster risk management policies are developed in a way that takes account of international commitments, such as the 2015-2030 Sendai Framework for Disaster Risk Reduction and the Sustainable Development Goals of the 2030 Agenda for Sustainable Development.

14. Focus on climate change adaptation measures

State whether synergies between disaster risk reduction and climate change adaptation measures are established at national or sub-national level (as appropriate) for the key risks identified that are linked to climate change (Q4). If so, describe how.

15. Focus on critical infrastructure protection measures

State whether there are measures in place to protect critical infrastructure regarded as relevant for the continuation of vital societal functions.

16. Source(s) of funding

*State whether the budget allows for resources to be allocated flexibly in case of urgent need and to what extent disaster funds promote preventive action.
Describe the funding sources used (e.g. national, sub-national, public, private, including insurance, EU and other international funding) to take priority measures in the field of disaster risk management when assessing, preventing, preparing for and responding to the key risks identified.*

17. Infrastructure, assets and equipment

Describe what is done to ensure that enough assets are available to mitigate the impact of disasters and respond promptly to disasters associated with the key risks identified.

18. Focus on disaster loss data collection and procedures

State whether a system is in place to collect disaster loss data. Describe how data is collected on the key risks identified.

19. Focus on early warning systems equipment and procedures

Describe the systems in place for early hazard detection and monitoring of the key risks identified. State whether forecasting methodologies are integrated into the system.

20. Risk information and communication to raise public awareness

Describe how the public is informed of what action to take when facing risks. For example, state whether a strategy is in place to educate the public and raise awareness. State whether and how target groups are involved in the definition of prevention and preparedness measures and in the implementation of the risk information and communication activities.

Optional: Good practices

Outline recent good practices relevant to Questions 9-20.

Part III. Priority prevention and preparedness measures addressing key risks with cross-border impacts and, where appropriate, low probability risks with a high impact

21. Key risks with cross-border impacts

List the key risks with cross-border impacts.

For each key risk with cross-border impacts, please complete the following box:

22. Priority prevention and preparedness measures

22.1 Describe existing priority prevention measures and any that are planned.

22.2 Describe existing priority preparedness measures and any that are planned.

If EU legislation or policies already require reporting on priority prevention and preparedness measures addressing this risk, please simply refer to any reports already sent to the Commission.

Where appropriate:

23. Low probability risks with a high impact

List any low probability risks with a high impact.

For each low probability risk with a high impact, please complete the following box:

24. Priority prevention and preparedness measures

24.1 Describe the existing priority prevention measures and any that are planned.

24.2 Describe the existing priority preparedness measures and any that are planned.

If EU legislation or policies already require reporting on priority prevention and preparedness measures addressing this risk, please simply refer to any reports already sent to the Commission.

ACCOMPANYING GUIDANCE TO THE TEMPLATE

Part I. Risk assessment

1.1. Introduction

The purpose of the risk assessment is to provide inputs into the decision-making process and disaster risk management and capability planning for policy-makers and relevant stakeholders, including those from the private sector; to inform the public about risks; and to monitor and review risks and vulnerabilities. The assessment thus provides a basis for planning disaster risk management and implementing related measures. To this end, the European Commission has already established "Risk Assessment and Mapping Guidelines for Disaster Management" ⁽¹²⁾ in 2010 and periodically provides an "Overview of natural and man-made disaster risks the European Union may face" ⁽¹³⁾.

⁽¹²⁾ Commission Staff Working Paper, Risk Assessment and Mapping Guidelines for Disaster Management (SEC(2010)1626 final).

⁽¹³⁾ Commission Staff Working Document Overview of natural and man-made disaster risks the European Union may face (SWD (2017) 176).

Disaster risk policies at European level deal with a variety of topics, including natural and man-made disaster risks such as: forest fires, health threats, pandemics, industrial risks, chemical, biological, radiological and nuclear (CBRN) threats, security (cyber, terrorism), and others. In addition, other policies are also relevant for disaster risk management, including climate change and environmental policies.

According to Article 4(7) of Decision No 1313/2013/EU, 'risk assessment' means the overall cross-sectoral process of risk identification, risk analysis, and risk evaluation undertaken at national or appropriate sub-national level. The risk evaluation ⁽¹⁴⁾ is an important part of the risk assessment to support decisions and ascertain where additional action is required. However, reporting on the outcomes of the risk evaluation is not required for the purpose of these guidelines, given the political nature of this stage. If the risk assessment already includes an evaluation of risks, this can be provided to the Commission.

1.2. Guidance for responding to questions 1–8 of the Template (Part I)

Q1 Risk assessment process

Describe how the risk assessment process fits into the overall disaster risk management framework. Detail legislative, procedural and institutional aspects. Please, explain whether responsibility for the risk assessment lies at national level and/or at an appropriate sub-national level.

State whether conducting a national or appropriate sub-national risk assessment is required by legislation or by other procedural or institutional requirements (e.g. a particular policy document). Name the coordinating authority responsible for leading the national risk assessment process.

The legislative/policy framework can support countries' policy-makers to establish effective multi-agency mechanisms to coordinate cooperation domestically on addressing identified risks. It also improves cooperation between domestic agencies/authorities, to improve a country's ability to respond to evolving risks.

Based on the EU analysis of the national risk management capability reports sent to the Commission in 2018, most Member States have recognised the importance of basing the risk assessment process on a legislative or procedural framework. However, some countries have separate legislative frameworks for different risks, stemming, for example, from different EU legislative requirements ⁽¹⁵⁾.

Q2 Consultation with relevant authorities and stakeholders

Describe the range of relevant authorities and stakeholders involved in the risk assessment process.

If appropriate: *Describe the nature of their involvement, specifying their roles and responsibilities.*

When producing a risk assessment, it is important to involve a range of relevant stakeholders in the process. This encourages them to contribute to the disaster risk management process. Relevant authorities and stakeholders can include national and regional authorities including those which do not contribute directly to the assessment process, such as academia, research organisations and the private sector.

Q3 Identifying the key risks at national or sub-national level

Identify the key risks ⁽¹⁶⁾ that could have significant adverse human, economic, environmental and political/social impacts (including security).

Please identify the key risks at national or sub-national level.

If appropriate: Describe which methods/sources of data were used to identify the key risks at national and/or appropriate sub-national level. Where applicable, please state whether the identification of a risk was based on one or more different scenarios related to the main event, or on an overall probabilistic analysis at national level. Where applicable, state whether a multi-hazard approach was taken in the scenario/risk model building and risk identification of existing key risks (i.e. which cascading effects of disasters were considered).

⁽¹⁴⁾ Risk evaluation is the process of comparing the results of risk analysis with risk criteria to ascertain whether the risk and/or its magnitude are/is acceptable. Risk criteria are the terms of reference against which the significance of a risk is evaluated. They may include associated costs and benefits, legal requirements, socioeconomic and environmental factors, concerns and stakeholders.

⁽¹⁵⁾ EU sets out specific legislative requirements in certain fields, e. g. EU Floods Directive (Directive 2007/60/EC), EU Water Framework Directive (Directive 2000/60/EC), EU Seveso III Directive (Directive 2012/18/EU), EU Critical Infrastructure Directive (Directive 2008/114/EC).

⁽¹⁶⁾ Member States are asked to define their own existing key risks at national or sub-national level.

Risk identification is the process of finding, recognising and describing risks, possibly in probabilistic terms. It is a screening exercise and serves as a preliminary step leading on to the subsequent risk analysis stage. Risk identification should be based as much as possible on quantitative (historical and recent statistical) data. However, it would be advisable to make use of scenario-building processes and model projections to identify also future risks. Alternative solutions should ideally be found for addressing risks which are difficult to measure or where information linked to the risk may be classified. Sometimes, only risks will be identified at this stage. This means identifying types of events that may happen in a given territory in a given timeframe. Usually, however, the risk identification stage already looks at the consequences (potential impacts) of the hazards or risk occurrences. Data on the impacts can be collected in a qualitative way (e.g. through expert opinions, intelligence information, inductive reasoning techniques and others).

Different risks require different analyses. The **probability** is generally easier to estimate for natural hazards, given their historical precedents. Probability can be assessed qualitatively (very high, high, medium, low, very low probability) or quantitatively (the return period, probability of occurrence in 1 year, 5 years, 100 years, etc.). For some risks, it is not possible to establish how likely an event is to occur, and alternative estimates should be sought where appropriate. The probability of an event or risk occurrence should, where possible, be assessed according to the historical frequency of events on a similar scale and on the basis of available statistical data relevant to an analysis of the main drivers, which can help identify accelerating trends, such as those associated with climate change. For example, geological data could help in extending the investigation time window for some risks (e.g. volcanoes, earthquakes, tsunamis).

The level of **impact** should also be assessed qualitatively and quantitatively ⁽¹⁷⁾. Impact analysis should rely as much as possible on empirical evidence and experience from past disaster data or established quantitative models of impact. Where possible, the impacts of each risk occurrence or hazard should be assessed in terms of significant adverse impacts on four categories: human impacts, economic impacts, environmental impacts, political/social impacts (including security impacts). The categories and criteria of the different impacts can be summarised as follows:

- *human impacts*, taking into account fatalities, missing people, injured and sick people, and people who need to be evacuated or who lose access to basic services. The criteria are usually quantified;
- *economic impacts*, taking into account financial and material losses, as well as economical losses from various sectors of the economy. The criteria are usually quantified. When possible, indirect economic losses should be estimated;
- *environmental impacts*, taking into account impact on natural resources, protected areas and habitats (forests, terrestrial biodiversity, aquatic, marine ecosystems, etc.), natural and urban environments. Impacts on cultural heritage can be included in this category ⁽¹⁸⁾. The criteria are usually qualitative, but they may also be quantitative, based on the cost of losses or recovery, or assessed qualitatively, based on the extent of the damage or the time taken to revert to the original state;
- *political/social impacts (including security)*, taking into account the disruption of daily life/use of critical facilities (energy, health, education, etc.), water and food security, social unrest, threats to social security, and the capacity to govern and control the country. Sometimes this category includes psychological effects. The criteria are usually qualitative.

Within each category of impact (human, economic, environmental, and political/social), the relative importance of individual impacts should be graded using a single set of criteria to score the relative impact applicable to different risks or risk scenarios. The human impact should be measured in terms of the number of people affected, while the economic impact should be measured in the national currency. The environmental impacts should, whenever possible, be quantified in economic terms, but they may also be classed in non-quantitative terms, e.g. (1) limited / insignificant, (2) minor / substantial, (3) moderate / serious, (4) significant / very serious, (5) catastrophic / disastrous. The political / social impact (including security impacts) can also be measured on a similar qualitative scale. Quantitative analysis can define the scale of the impact level (very low, low, moderate, high, or very high) in numerical terms.

Where possible, assessing the impacts should be aligned to the goals, targets and reporting guidelines of the Sendai Framework for Disaster Risk Reduction (Sendai Framework) ⁽¹⁹⁾.

⁽¹⁷⁾ Commission Staff Working Paper, Risk Assessment and Mapping Guidelines for Disaster Management (SEC(2010)1626 final).

⁽¹⁸⁾ Given that there are different methodological approaches, it is acknowledged that impacts on cultural heritage may be classed either as economic impacts (if quantitative) or as environmental impacts (if qualitative). Member States should, where applicable, state how impacts on cultural heritage have been classified.

⁽¹⁹⁾ UNDRR, *Technical guidance for monitoring and reporting on progress in achieving the global targets of the Sendai Framework for Disaster Risk Reduction*. <https://www.preventionweb.net/publications/view/54970>

These four categories of impact can be considered in the short and the medium term, additionally there may be strong interdependencies under certain circumstances, such as the number of people killed and injured by buildings collapsing as a result of earthquakes. These four categories of impact, could, where applicable, be considered when assessing the impact of any analysed event, or risk, including the key risks identified in Q3, which also include key risks with cross-border impacts, those with a low probability and high impact, and where appropriate, key future and emerging risks. The four categories can also be used in developing risk scenarios and multi-risk assessments (described below) at the risk identification and risk analysis stages.

Several methods and techniques can be used to identify key risks ⁽²⁰⁾. These may include risk criteria, evidence-based methods, reviews of geological, historical, and statistical data, checklists, intelligence information, systematic team approaches (where a team of experts follow a systematic process to identify risks by means of a structured set of prompts or questions), and inductive reasoning techniques. Techniques to make the risk identification process more comprehensive exist ⁽²¹⁾.

Risk scenario analysis can be useful to identify potential key risks, where appropriate, including future and/or emerging key risks, key risks with a cross-border impact and key risks with low probability and high impact. It also offers a way to communicate about how to obtain a picture of future uncertainties and factors influencing decisions that have to be taken today.

National risk analyses may strive to consider not only analysis of single-risk models/scenarios (if those have been built in the risk identification phase), but also some multi-risk scenarios or models.

A multi-risk approach entails a multi-hazard and multi-vulnerability perspective. A multi-risk assessment incorporates possible amplifications and cascading effects arising from interaction with other risks. In other words, one risk may be increased through another risk, or because another kind of event has significantly altered the system's vulnerability or exposure. The multi-vulnerability perspective refers to the variety of sensitive targets exposed to risk, such as population, transport systems and infrastructure, buildings and cultural heritage. These potential targets exhibit different types of vulnerability to the various hazards and require different types of capacities to prevent and cope with hazards.

A multi-risk scenario analysis usually takes into consideration the following elements:

- identification of possible multi-risk scenarios, starting with a given event and evaluating the possibility that other risks or events may be triggered.
- exposure and vulnerability analysis for each individual risk within the different branches of the scenarios, as well as the interdependencies of hazards and vulnerabilities.
- risk estimate for each adverse event and for multi-risk scenarios. Software tools such as Decision Support System (DSS) for mapping multiple risk scenarios can be used to help visualise, provide information on and run scenarios.

These guidelines are not intended to promote a particular way of dealing with multi-risk scenarios or models; rather, they highlight some good practices described in the literature, such as NaTech accidents involving earthquakes, lightning and floods.

Q3.1 Identifying key risks with a cross-border impact

Any key risks which could have significant adverse cross-border impacts, coming from or affecting the neighbouring country or countries.

Where applicable, state whether a multi-hazard approach was applied when building the scenario and identifying key risks with cross-border impacts. For instance, indicate if cascading effects of disasters were considered.

The identification of key risks with a potential cross-border impact and the estimation of their respective impacts might consider: i) impacts resulting from risks generated in a neighbouring country or countries ii) impacts that spill over into a neighbouring country or countries iii) impacts affecting two or more countries simultaneously. When we consider impacts on a neighbouring country or countries, it is not to assess potential impacts qualitatively or quantitatively, but rather in order to imagine whether any adverse impacts might ensue (e.g. an ash cloud from a volcano interfering with neighbouring countries' airspace).

⁽²⁰⁾ Annex 3 of Commission Staff Working Paper, Risk Assessment and Mapping Guidelines for Disaster Management (SEC(2010)1626 final).

⁽²¹⁾ Joint Research Centre report on *Recommendations for National Risk Assessment* https://publications.jrc.ec.europa.eu/repository/bitstream/JRC114650/jrc114650_nrarecommendations_updatedfinal_online1.pdf

Q3.2 Identifying key risks with low probability and high impact

Any key risks with a low probability but a high impact.

Where applicable, indicate whether a multi-hazard approach was taken into account in the scenario-building and risk identification of key risks with low probability and high impact. For instance, please indicate if cascading effects of disasters were considered.

Member States are asked to set the criteria for defining the key risks with low probability and a high impact in their national or sub-national context. A risk with low probability and a high impact may not necessarily be considered as a key risk if the event concerned is very unlikely to occur. Whether there are any low probability risks with a high impact under key risks is therefore dependent on Member States' definitions of "key risks".

Q3.3 Identifying key future and/or emerging risks

Where appropriate, identify any key risks expected in future. These may include any emerging risks that could have significant adverse human, economic, environmental and political/social impacts (including impacts on security).

Identifying the key future risks, including new emerging risks, could help improve the management of future risks through appropriate prevention and preparedness measures. In the case of climate change-related future and emerging risks, the risk assessment should, where appropriate, take account of climate change projections and scenarios based on the Intergovernmental Panel on Climate Change (IPCC) reports, or on other validated scientific sources. Where existing, national climate risks and vulnerability assessments provide relevant projections of climate hazards and risks. Climate-change related future and emerging risks should be consistent with the risks indicated in the National Adaptation Strategy and/or Plan and climate risk and vulnerability assessments, where those have been performed.

The Commission's publication 'Science for Environmental Policy' considers as emerging risks ⁽²²⁾, risks that may be:

- new risks;
- difficult to assess (with traditional risk assessment and management approaches) likelihood of harm;
- difficult to foresee, i.e. it is difficult to assess the probability that a certain consequence will occur at a specific time / place / condition;
- risks resulting from a newly identified hazard to which a significant exposure may occur, or from an unexpected new or increased significant exposure and/or susceptibility to a known hazard;
- new or familiar risks that become apparent in new or under unfamiliar conditions.

Definitions of emerging risks also include the concept of newly created risks; newly identified/ noticed risks; increasing risk, or risk becoming widely known or established.

If appropriate: Outline the methods, models and techniques used to identify and assess future risks and/or emerging risks and their potential impacts, taking into consideration climate change-related risk scenarios and projections, the national adaptation strategy and/or plan ⁽²³⁾ and climate risk and vulnerability assessments, if such assessments have been made. The future climate scenarios used and their projections could be short-term (2030); medium-term (2050) and long-term (2100), where appropriate.

A multi-risk modelling approach might be considered to capture the dynamic nature and various interactions of the risk-related processes driven by both climate change and social, economic, environmental and demographic parameters. Scenario-building is also a method applied to identifying future and/or emerging risks. It is not limited just to estimating future climate change impacts.

⁽²²⁾ *Science for Environment Policy* (2016) *Identifying emerging risks for environmental policies*. Future Brief 13. European Commission DG Environment, <http://ec.europa.eu/science-environment-policy>

⁽²³⁾ National adaptation strategies and plans are available on Climate Adapt website: <https://climate-adapt.eea.europa.eu/countries-regions/countries>

Where applicable, indicate whether a multi-hazard approach was taken in building scenarios and identifying the risks associated with future and emerging key risks. Please, also indicate if cascading effects of disasters considered.

Q4 Identifying climate change impacts

Determine which of the above-mentioned key risks are directly linked to climate change effects. Please take into consideration the existing national and sub-national climate change adaptation strategy and/or plan ⁽²⁴⁾ or any relevant and climate risk and vulnerability assessments, where appropriate.

This question can be combined with identifying key future and/or emerging risks (Q3.3), if applicable.

If appropriate: Describe which methods and data sources were used to identify the key existing risks that are or can be influenced by climate change.

Q5 Risk analysis

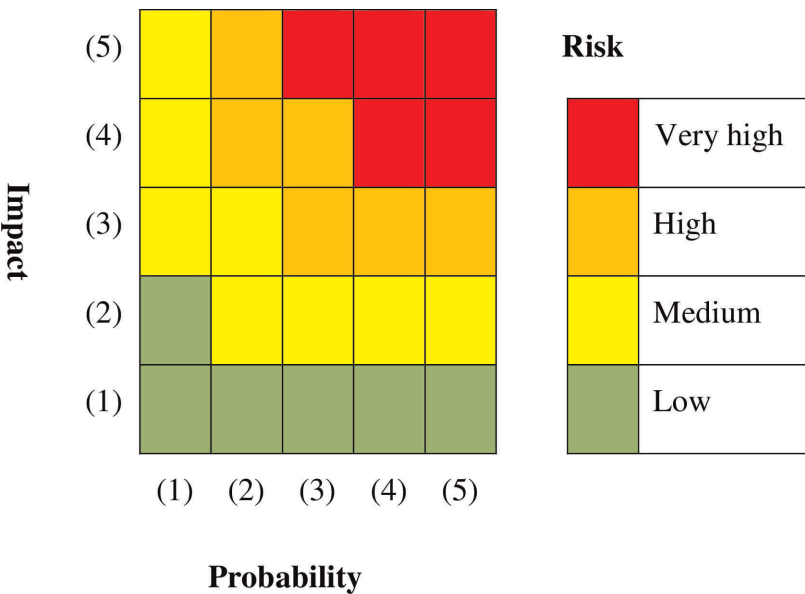
Describe the scale of levels of probability and impact of the key risks identified (in Q3,) including the key cross-border and key risks with a low probability and a high impact and, where appropriate, future and/or emerging risks.

Display the results in a single risk matrix or other visualised graph/model as well, if applicable.

If appropriate: Outline the methods, models and techniques used to assess the probability and impacts of the different risks or risk scenarios.

Once risks are identified, the probability that they will materialise and the severity of their potential impacts are measured using a set of categories that measure the risk factors (measurement should ideally be quantitative). The categories of impact that can be considered are human, economic, environmental and political/social (including security), as described in Q3. This is often described in terms of the ‘probability’ and ‘impact’ of a scenario or a risk occurrence. The results are usually presented in a risk matrix or in probabilistic maps.

A **risk matrix** relates the probability dimension to that of impact and is a graphical representation of different risks that allows them to be compared. Such a matrix depicts the multiple risks identified, thereby making comparison easier. Risk matrices may be used at all stages of risk assessments (for current, future or/and emerging, cross-border and key risks with low probability and high impact). The scales used for probability and impact usually have five levels (Figure 1), though this can vary. The colours within the matrix can also be assigned differently, depending on a country’s individual risk perception.



⁽²⁴⁾ National adaptation strategies and plans are available on Climate Adapt website: <https://climate-adapt.eea.europa.eu/countries-regions/countries>

Figure 1: Risk matrix (symmetrical, 5x5)

A number of Member States use the risk matrix. They may consider producing different risk matrices for human, economic, environmental and political/social impact (including security impact), as these categories are measured with distinct scales and would otherwise be difficult to compare, especially if some are assessed quantitatively and others qualitatively. To facilitate a more comprehensive overview at EU level, Member States could preferably use a 5x5 risk matrix, if appropriate, with scale levels of impacts and probability indicated. Where possible, Member States are encouraged to assign quantitative ranges to each of the numbers from 1 to 5.

Risk analysis has to take into account the **uncertainties associated with analysing risks**, and address data and model uncertainties. A sensitivity analysis involves ascertaining the size and significance of the magnitude of risks to changes in individual input parameters.

When a risk is likely to have substantial and irreversible consequences but its likelihood cannot be accurately assessed, the **precautionary principle** can justify including it in the risk analysis. This especially concerns risks to the environment and health (human, animal and plant diseases). The precautionary principle may be applied as a first step towards risk management. Temporary decisions may need to be taken on the basis of qualitative or inconclusive evidence. Where the precautionary principle is applied, additional efforts should be made to improve the evidence base.

Q6 Risk mapping

State whether any risk maps have been produced showing the expected spatial distribution of the key risks as identified at the identification and analysis stage (Q3, Q4 and Q5). If so, include them as appropriate.

Distribution of risks varies across a country, because of different risk occurrences, exposure of people and assets and uneven vulnerability. Risk maps are a useful tool for identifying the areas most at risk across the country. Different types of maps can be produced, depending on national or sub-national needs: simple maps of key risks, including key risks with a cross-border impact; key risks with a low probability and a high impact; and, where appropriate, future and/or emerging risks. In addition, loss maps can be produced to demonstrate where potential losses for a given risk are potentially higher, given the distribution of exposure and vulnerability, etc.

The different key risks should ideally be presented in separate maps or thematic risk maps (e.g. categorised by key risks with a cross-border impact, future and/or emerging risks, and key risks with low probability and a high impact). If possible, they could show the spatial distribution of vulnerability and exposure to damage, marked as very high, high, medium, low and very low risk levels.

These risk maps could show the spatial distribution of all relevant aspects needing protection at national or regional level, such as: population, vital infrastructure, such as water, electricity, gas and oil production; transport and distribution; telecommunications; agriculture; financial and security services; hospitals; schools; environmentally protected areas and habitats (Natura 2000 areas, marine protected areas, national parks, forests, maritime and terrestrial biodiversity, river basins); cultural heritage assets (archaeological sites, monuments, parks etc.); and other significant economic activities (factories, businesses, energy facilities, agricultural production, livestock, tourist areas and businesses), etc.

Such information can be brought together using Geographic Information Systems (GIS) or web platforms. If this exists, please provide relevant link as appropriate.

Q7 Monitoring and reviewing of risk assessment

Outline the system in place for monitoring and reviewing risk assessment so as to factor in new developments.

As part of the disaster risk management process, risks should be regularly monitored and reviewed to verify that:

- assumptions about risks remain valid (including input data),
- assumptions on which risk assessment is based, including the external and internal context, remain valid,
- the results expected are being achieved,
- the results of risk assessment are in line with actual experience,
- risk assessment techniques are being properly applied,
- risk treatment (risk prevention and preparedness implementing measures) is effective.

Q8 Communicating risk assessment results

Describe the process of communicating and disseminating the results of the national risk assessment. Outline how the risk assessment results are shared among policy-makers, various public authorities with different types of responsibility, different levels of administration, and other relevant stakeholders. State whether and how the general public are informed about the results of risk assessment, to make them aware of risks in their country or region and/or enable them to take informed decisions to protect themselves.

Proper communication of results enables risk assessments to be used in decision-making. The ultimate purpose of communicating risks is to enable people at risk to take informed decisions to protect themselves, and to raise their risk awareness. Risk communication also means sharing information, advice and opinions between experts and people facing threats to their health and/or their economic or social well-being. Non-government actors also rely on accurate risk assessments. For example, chemical industries often need to be informed about technological risks. In addition, the implementation of the right-to-know principle now enshrined in many national and international laws and regulations has meant that many assessment procedures now include public participation. This development has created a need for a systematic approach to risk communication in public policy implementation.

Part II. Risk management capability assessment

2.1. Introduction

Article 6(1) of Decision No 1313/2013/EU states: 'In order to promote an effective and coherent approach to the prevention of and preparedness for disasters by sharing non-sensitive information, (...), and to promote the exchange of best practices within the Union Mechanism, Member States shall: (...) (b) further develop the assessment of risk management capability at national or appropriate sub-national level'.

Member States are invited to assess, in view of their technical, financial and administrative capacity, their capability to carry out adequate risk assessments and risk management planning and to implement prevention and preparedness measures.

These guidelines set out a structure for a summary of each country's risk management capability assessment. The proposed structure is not exhaustive and will need to be adapted to the needs of each Member State. This exercise should be regarded as a common starting point, designed to foster a shared understanding of the aspects that the national risk management capability assessment should include. The summary should focus on the key risks identified in Part I.

2.2. Guidance for responding to questions 9 – 20 of the Template (Part II)

Q9 Legislative, procedural and/or institutional framework

Describe the framework in place for the risk management capability assessment process(es). State whether it is based on a legal act, a strategic plan, an implementation plan or other procedural frameworks.

If appropriate: *State how often the risk management capability is assessed and whether the risk management capability assessment(s) is used for decision-making purposes.*

This question is intended to clarify the legislative, procedural and/or institutional context at national or sub-national level (whichever applies) that formalises the risk management capability assessment process(es) for prevention, preparedness and response. If the legislative framework in place is the same as the one described in response to Q1, reference can be made to answers given to Q1. If the reply differs from the reply to Q1, Member States are asked to specify whether the risk management capability assessment process(es) has a legal basis or whether it is based on a strategic plan, an implementation plan or other legislative/procedural frameworks, and whether it is based on or follows from the risk assessment.

If appropriate: Please mention any foreseeable plans to develop the legislative framework. Please indicate how frequently the risk management capability assessment is conducted at national or, if appropriate, at sub-national level and/or describe whether this assessment(s) is used for decision-making purposes. For instance, please indicate if it feeds into the risk management planning process and/or the implementation of prevention and preparedness measures, and if this is used to help understand vulnerabilities as part of the risk assessment.

Q10 Roles and responsibilities of the competent authorities

Describe the roles and responsibilities of the competent authorities at national or sub-national level (as appropriate), distinguishing between risk assessment, prevention, preparedness, and response, and focusing on the management of the key risks identified.

Describe how horizontal coordination (the cross-sectoral approach) is ensured among these competent authorities, focusing on the management of the key risks identified.

For the key risks identified, the management capacities and roles/responsibilities of the competent authorities and bodies should be clearly assigned for all stages of the disaster risk management cycle (assessment, prevention, preparedness and response). A graphic could be included to visualise the horizontal coordination. Please also name the authority that plays the role of 24/7 emergency contact point at national level and to describe how this role is integrated into the overall management structure.

Member States should explain how these roles and responsibilities are enforced (e.g. through legislation and/or procedural policies) and what is done to ensure efficient management (e.g. to avoid overlaps and gaps between areas of responsibility). Please describe what measures are in place to ensure cooperation among these competent authorities at different stages of the disaster risk management cycle (assessment, prevention, preparedness and response), and any lessons learned, focusing on the management of the key risks.

When the management of roles and responsibilities of competent authorities requires a cross-sectoral approach (e.g. Integration of climate change adaptation, Q14), Member States are asked to take note of existing EU legislation and/or policies (see Annex).

Q11 Roles of relevant stakeholders

State whether relevant stakeholders are informed about and involved in the disaster risk management process(es) for the key risks identified. If they are, describe how.

The capability to manage risks depends increasingly on involving and cooperating with various public and private stakeholders, including disaster management agencies, health services, fire-fighting units, police forces, transport/electricity/communication operators, voluntary organisations, citizens/volunteers, private landowners, the insurance sector, academia and research institutes, the armed forces, or organisations in other countries (for transnational disaster risk management). EU legislation recognises that 'disaster risk prevention and management imply the need to design and implement disaster risk management measures that involve the coordination of a wide range of actors' ⁽²⁵⁾.

Please state whether this cooperation is ensured in risk assessment process(es) for identified key risks, the disaster risk management planning processes and as appropriate, the implementation of prevention and preparedness measures. If so, describe how.

If appropriate: please mention how public and private stakeholders are informed and how information sharing (including lessons learnt and data sharing) is established. Reference can be made to answers given to Q8.

Q12 Procedures and measures at national, sub-national and local level

Describe the established procedures to ensure vertical cooperation between the national, sub-national and local level authorities involved in disaster risk management process(es) for the identified key risks.

Member States should explain procedures and measures to ensure vertical coordination among the national, sub-national and local levels for the key risks identified.

The process of planning prevention and preparedness measures needs to define procedures to help reduce risk nationally, sub-nationally and locally. As Recital 14 of Decision (EU) 2019/420 ⁽²⁶⁾ notes, regional and local authorities can play an important preventive role; moreover, they are the first to respond to a disaster, together with their volunteers. Member States are therefore asked to state what agreed mechanisms of cooperation exist, including the decision-making procedures that help to define prioritisation of risks and regional plans, plus any financial arrangements for assistance.

⁽²⁵⁾ Recital 8 of Decision (EU) 2019/420, amending Decision No 1313/2013/EU.

⁽²⁶⁾ Recital 14 of Decision (EU) 2019/420, amending Decision No 1313/2013/EU states: 'The role of regional and local authorities in disaster prevention and management is of great importance, and their response capacities need to be appropriately involved in any coordination and deployment activities (...)'.

If appropriate: Please describe the disaster risk management measures that are in place for the identified key risks at various governance levels. This may be illustrated with a table showing the key risks identified.

Q13 Procedures and measures at cross-border, inter-regional and international level

Describe the procedures established to ensure cooperation at the cross-border, inter-regional and international levels for the disaster risk management of identified key risks. Describe measures in place to ensure disaster risk management for the key risks identified.

If appropriate: State whether disaster risk management policies are developed in a way that takes account of international commitments, such as the 2015-2030 Sendai Framework for Disaster Risk Reduction and the Sustainable Development Goals of the 2030 Agenda for Sustainable Development.

Taking account of international cooperation and the recent revision of UCPM Decision No 1313/2013/EU (particularly the Recital 28 of Decision (EU) 2019/420 ⁽²⁷⁾), the purpose of this section is to explore if and how engagement at cross-border, inter-regional and international level is ensured.

Member States are asked to describe whether there is any cross-border ⁽²⁸⁾, inter-regional and international cooperation in the pre-disaster phase and, if so, what form it takes (prevention and preparedness). Please explain how this cooperation is ensured (e.g. memoranda of understanding or service-level agreements). Please also state whether there is any joint implementation of preparedness measures (e.g. early warning systems or joint training sessions and exercises) to ensure rapid and effective disaster response when the key risks identified materialise.

When managing prevention, preparedness and response measures requires a cross-sectoral approach (e.g. Integration of climate change adaptation, Q14), reference can be made to existing EU legislation (see Annex).

The Sendai Framework ⁽²⁹⁾ endorsed by the UN General Assembly is a voluntary non-binding agreement, through which national governments have committed themselves to preventing new and reducing existing disaster risk by reducing exposure and vulnerability while stepping up preparedness, resulting in improved overall resilience. The Sustainable Development Goals ⁽³⁰⁾ adopted in 2015 by a UN Summit define 17 goals ⁽³¹⁾ for sustainable development. Implementation of both agendas requires a solid framework of indicators to monitor progress towards reducing disaster risk. Specifically, there are 38 indicators to track progress in implementing the 7 targets under the Sendai Framework and 17 goals and 169 targets are defined to achieve sustainable development under the Sustainable Development Goals.

The Commission is engaged in implementing both agendas and has developed action plans ⁽³²⁾ and reflection papers ⁽³³⁾ to follow up progress towards meeting those targets. If appropriate, Member States are asked to describe how their disaster risk management policies will help achieve the goals of those two agendas.

Q14 Focus on climate change adaptation measures

State whether synergies between disaster risk reduction and climate change adaptation measures are established at national or sub-national level (as appropriate) for the key risks identified that are linked to climate change (Q4). If so, describe how.

⁽²⁷⁾ Recital 28 of Decision (EU) 2019/420, amending Decision No 1313/2013/EU states that '(...) all actions should be coherent with, and actively contribute to, meeting international commitments such as the Sendai Framework for Disaster Risk Reduction 2015 – 2030, (...) and the UN Agenda 2030 for Sustainable Development'.

⁽²⁸⁾ Cross-border prevention and preparedness measures could be referred to Q22.

⁽²⁹⁾ Sendai Framework for Disaster Risk Reduction, 2015-2030: https://www.preventionweb.net/files/43291_sendaiframeworkfordrren.pdf

⁽³⁰⁾ Sustainable Development Goals: <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

⁽³¹⁾ The 17 Sustainable Development Goals are: 1. no poverty, 2. zero hunger, 3. good health and well-being, 4. quality education, 5. gender equality, 6. clean water and sanitation, 7. affordable and clean energy, 8. decent work and economic growth, 9. industry, innovation and infrastructure, 10. reduced inequalities, 11. sustainable cities and communities, 12. responsible consumption and production, 13. climate action, 14. life below water, 15. life on land, 16. peace, justice and strong institutions, 17. partnerships for the goals.

⁽³²⁾ European Commission, *Action Plan on the Sendai Framework for Disaster Risk Reduction 2015-2030. A disaster risk-informed approach for all EU policies*, (SWD(2016) 205 final/2).

⁽³³⁾ European Commission, 2019 Reflection paper, *Towards a sustainable Europe by 2030*. https://ec.europa.eu/commission/sites/beta-political/files/rp_sustainable_europe_30-01_en_web.pdf

Considering recent revision of the UCPM legislation, namely the fact that 'all actions should be coherent with, and actively contribute to, meeting international commitments such as (...) the Paris Agreement under the United Nations (UN) Framework Convention on Climate Change (...)' ⁽³⁴⁾, the purpose of this question is to explore if and how synergies are ensured between climate change adaptation and national prevention and preparedness measures.

Climate change adaptation can support efforts to prevent climate-related disasters. Cost-effective adaptation measures require good coordination at various levels of planning and management. Under the UN Framework Convention on Climate Change, national adaptation strategies and plans are the recommended instrument for adaptation policies and actions. Member States are asked to refer to such strategies and describe if and how these are integrated with the planning of national disaster risk prevention and preparedness measures or vice-versa. If the management of prevention, preparedness and response measures requires a cross-sectoral approach, reference can be made to existing EU legislation (see Annex).

Q15 Focus on critical infrastructure protection measures

State whether measures are in place to protect critical infrastructure regarded as relevant for the continuation of vital societal functions.

In view of the recent amendment of the UCPM Decision, in particular Recital 8 of Decision (EU) 2019/420 ⁽³⁵⁾, and of Article 7(1) of the European Critical Infrastructure Directive ⁽³⁶⁾, the purpose of this question is to explore if and how prevention and preparedness measures to protect critical infrastructure are being implemented.

Member States are asked to state whether there is a critical infrastructure policy in place. Please state whether a list of relevant national critical infrastructure is compiled and regularly reviewed as part of this policy, and if investment needs are identified for the protection of critical infrastructure. If managing prevention, preparedness and response measures for critical infrastructure requires a cross-sectoral approach, reference can be made to existing EU legislation (see Annex).

Q16 Source(s) of financing

State whether the budget allows for resources to be allocated flexibly in case of urgent need and to what extent disaster funds promote preventive action.

Describe the funding sources used (e.g. national, sub-national, public, private, including insurance, EU and other international funding) to take priority measures in the field of disaster risk management when assessing, preventing, preparing for and responding to the key risks identified.

The various forms of financial support the EU makes available for prevention and preparedness measures should be mentioned, if used. They include the Cohesion policy funds, the Common Agriculture Policy, the LIFE programme ⁽³⁷⁾, the Internal Security Fund ⁽³⁸⁾, Horizon 2020 ⁽³⁹⁾, the UCPM multi-country prevention and preparedness grants and the newly introduced direct grants. The EU Structural Reform Support Programme ⁽⁴⁰⁾ may also be used for capacity building purposes and development of policy frameworks and instruments.

Financial means should be available and quickly accessible in the event of emergency situations as identified in risk assessment and planning. Please describe how budgetary and legal questions related to flexible resource allocation are dealt with in the implementation process (which managing authorities are involved) and state whether there are any plans to share the financial burden (EU or international funding available). The management structure of financing sources can be illustrated with a graphic.

Please also state whether any agreements with stakeholders (such as from private sector; insurance) are being sought or in place to cover these costs. Please state whether there are any national disaster funds or schemes (e.g. emergency fund, financial risk transfer mechanisms), and if they are linked to climate change impacts, where relevant.

⁽³⁴⁾ Recital 28 of Decision (EU) 2019/420, amending Decision No 1313/2013/EU.

⁽³⁵⁾ Recital 8 of Decision (EU) 2019/420, amending Decision No 1313/2013/EU.

⁽³⁶⁾ Article 7(1) of Council Directive 2008/114/EC of 8 December 2008 on the identification and designation of European critical infrastructures and the assessment of the need to improve their protection (Text with EEA relevance) (OJ L 345, 23.12.2008, p. 75).

⁽³⁷⁾ LIFE: <https://ec.europa.eu/easme/en/life>

⁽³⁸⁾ Internal Security Fund: https://ec.europa.eu/home-affairs/financing/fundings/security-and-safeguarding-liberties/internal-security-fund-police_en

⁽³⁹⁾ Horizon 2020: <https://ec.europa.eu/programmes/horizon2020/en/h2020-section/secure-societies-%E2%80%93-protecting-freedom-and-security-europe-and-its-citizens>

⁽⁴⁰⁾ EU Structural Reform Support Programme: https://ec.europa.eu/info/funding-tenders/funding-opportunities/funding-programmes/overview-funding-programmes/structural-reform-support-programme-rsfp_en

Q17 Infrastructure, assets and equipment

Describe what is done to ensure that enough assets are available to mitigate the impact of disasters and respond promptly to disasters associated with the key risks identified.

Please report on the capacity to ensure that adequate infrastructure, assets and equipment are in place to mitigate the impact of disasters and respond promptly to disasters. State whether there are any procedures to keep assets in 'good order' and up-to-date (through regular maintenance or an inventory of assets, for instance) for the key risks identified.

If appropriate: Please also state whether preparedness and response capabilities are being developed to respond to individual risks, or whether they are being developed, irrespective of risk, to respond primarily to the impact of such risks (e.g. search and rescue, evacuation, sheltering and hospitalisation of injured and sick people).

Q18 Focus on disaster loss data collection and procedures

State whether a system is in place to collect disaster loss data. Describe how data is collected on the key risks identified.

Data and statistics are important in understanding the impacts and costs of disasters. Systematic data collection and analysis can be used to inform policy decisions to help reduce disaster risks and build resilience. Disaster loss databases allow disaster risk managers to explore patterns and trends in disaster risk on the basis of past events. Understanding these patterns and trends can help in anticipating future losses from extensive events (frequent events) and in understanding whether disaster risk management is effective in reducing this kind of risk. At European level, the Joint Research Centre started developing the Risk Data Hub ⁽⁴¹⁾. The methodologies used to collect data for disaster-related datasets vary, as do the geographic scope and resolution of such data. At international level, similar efforts are under development in the context of monitoring the implementation of the Sendai Framework ⁽⁴²⁾.

Please state what methods are being developed to report damage (including human loss), and whether the data are collected by risk or by disaster loss type (economic, human, other). Please state: whether these data are shared with stakeholders and members of the public; whether stakeholders contribute to the damage reporting and/or to estimating costs; whether the instances of damage are documented and stored regularly or occasionally; what time period is covered; and whether these reports are made available to the public.

If managing disaster loss data requires a cross-sectoral approach, including requirements under the Inspire directive ⁽⁴³⁾, reference can be made to existing EU legislation (see Annex).

Q19 Focus on early warning systems equipment and procedures

Describe the systems in place for early hazard detection and monitoring of the key risks identified. State whether forecasting methodologies are integrated into the system.

Early warning is a major component of disaster risk reduction. It refers to the systematic collection and analysis of information, to anticipate and identify emerging or recurring risks. Member States are asked to describe the systems in place for the early hazard detection and monitoring of the key risks identified and whether such systems incorporate forecasting methodologies.

⁽⁴¹⁾ Risk Data Hub: <https://drmkc.jrc.ec.europa.eu/risk-data-hub>

⁽⁴²⁾ <https://sendaimonitor.unisdr.org/>

⁽⁴³⁾ Article 5(1) of Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE) (OJ L 108, 25.4.2007, p. 1).

There are several early warning systems at both global (e.g. Global Disaster Alert and Coordination System ⁽⁴⁴⁾) and European level. Copernicus Emergency Management Service ⁽⁴⁵⁾ provides information for emergency response in relation to different types of disasters, including meteorological hazards, geophysical hazards, deliberate and accidental man-made disasters and other humanitarian disasters. The information can also be used for prevention, preparedness, and recovery activities. They include the European Forest Fire Information System (EFFIS) ⁽⁴⁶⁾, the European Flood Awareness System (EFAS) ⁽⁴⁷⁾ and the European Drought Observatory (EDO) ⁽⁴⁸⁾. More recently, the European Community Urgent Radiological Information Exchange (ECURIE) ⁽⁴⁹⁾ provides for an early notification and exchange of information in the event of a radiological or nuclear emergency.

Member States are asked to state whether national early warning systems are connected to the early warning systems available at European and global level, and, if so, how. Please also state whether and, if so, how links are established among meteorological and seismic monitoring departments, both nationally and regionally (if available), and key national entities or academic institutions that consistently track disasters. Reference can be made to answers given to Q18.

If managing prevention, preparedness and response measures for early warning systems requires a cross-sectoral approach (e.g. early warning systems for cross-border threats to health ⁽⁵⁰⁾, the Floods Directive ⁽⁵¹⁾), reference can be made to existing EU legislation (see Annex).

Q20 Risk information and communication to raise public awareness

Describe how the public is informed of what action to take when facing risks. For example, state whether there is a strategy to educate the public and raise awareness. State whether and how target groups are involved in the definition of prevention and preparedness measures and in the implementation of the risk information and communication activities.

Citizens should be involved in implementing prevention and preparedness measures in two priority areas: education on risk, and public awareness and information, including the correct interpretation of warning signals and taking appropriate steps to reduce vulnerability and exposure, and protect oneself. 'Progress in increasing public awareness and preparedness for disasters, measured by the level of awareness of Union citizens of the risks in their region' ⁽⁵²⁾ is an indicator to be used in monitoring, evaluating and reviewing the implementation of Decision No 1313/2013/EU.

Managing complex risks requires effective information and communication systems for the implementation of prevention and preparedness measures, so as to take account of the needs of individual communities and the specific needs of highly vulnerable groups (such as those with different diverse cultural, social or educational backgrounds). Mass media (radio, television), alternative media, and public awareness and education campaigns can be effective in raising public awareness of risks.

Member States are asked to state whether there are rules and procedures to ensure information sharing, communication with and training of policy-makers, relevant stakeholders, citizens, including specific vulnerable groups, to increase public awareness of the key risks through different media (e.g. social media, etc.). Reference can be made to answers given to Q9. Please also describe how citizens are informed before, during and after a disaster strikes and if any good practices have been developed.

An 'early warning' system must provide timely and effective information to mitigate the impact of a disaster on populations. Warning messages and signals to the public must be effective. Please describe what is done to make sure that communities at risk understand early warning signals and that they are aware of the steps they need to take to protect themselves. In high-risk areas, there should be regular drills to ensure a constant state of preparedness. Please describe relevant measures in place.

⁽⁴⁴⁾ The Global Disaster Alert and Coordination System: <http://www.gdacs.org>

⁽⁴⁵⁾ Copernicus Emergency Management Service: <https://emergency.copernicus.eu/>

⁽⁴⁶⁾ The European Forest Fire Information System: http://effis.jrc.ec.europa.eu/static/effis_current_situation/public/index.html

⁽⁴⁷⁾ The European Flood Awareness System: <https://www.efas.eu>

⁽⁴⁸⁾ The European Drought Observatory <http://edo.jrc.ec.europa.eu/edo2/php/index.php?id=1000>

⁽⁴⁹⁾ The overall goal of the platform (<https://ec.europa.eu/jrc/en/publication/european-radiological-data-exchange-platform>) is to notify and inform competent authorities and the general public during the early phase of a large-scale accident with release of radioactivity to the atmosphere as early and extensively as possible.

⁽⁵⁰⁾ Article 8(1) of Decision No 1082/2013/EU.

⁽⁵¹⁾ Article 7(3) of Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks (Text with EEA relevance) (OJ L 288, 6.11.2007, p. 27).

⁽⁵²⁾ Article 3(2)d of Decision No 1313/2013/EU.

Part III. Priority prevention and preparedness measures for key risks with cross-border impacts and, where appropriate, for low probability risks with a high impact

3.1. Introduction

Various prevention and preparedness measures are planned and implemented to manage and reduce the risks identified through the national or appropriate sub-national risk assessment. As risks do not stop at borders, cross-border disaster risk management is crucial to increase resilience throughout Europe.

Descriptions of priority prevention and preparedness measures addressing key risks with a cross-border impact should not be restricted to measures implemented and planned by the civil protection authorities. Please also take into account priority measures implemented and planned by other relevant departments or bodies. Moreover, the measures described should not be limited to those resulting from cooperation between countries ('cross-border measures'); rather, they should include priority prevention and preparedness measures implemented and planned to tackle the risk as a whole.

Descriptions of priority prevention and preparedness measures should also include low probability high impact risks. Where appropriate, Member States are encouraged to share information on prevention and preparedness measures for those risks.

3.2. Guidance for responding to questions 21 – 24 of the Template (Part III)

Member States should select what they consider to be key risks with cross-border impacts from among those identified in Part I (Risk assessment). Depending on the approach, key risks could be defined as those with a high probability and a high impact. The term could also be interpreted as meaning key risks evaluated as having an impact and probability level that may be considered 'unacceptable' ('intolerable') and should be prioritised in terms of risk treatment. For certain Member States, some key risks might therefore be 'unacceptable' if rated 'high-impact', even if their probability is low. The guidance provided here does not prescribe how Member States should interpret the concept of a 'key risk' or how they should address prioritisation.

In accordance with the requirements of reporting under Article 6(1)d, please identify which of these key risks have potential cross-border impacts. Please consider:

- impacts resulting from risks generated in a neighbouring country or neighbouring countries;
- impacts that spill over into a neighbouring country or countries;
- impacts affecting two or more countries simultaneously.

Q21 Key risks with cross-border impacts

List the key risks with cross-border impacts.

These are the risks for which priority prevention and preparedness measures will be reported, based on Q 3.1 of Part I (Risk assessment).

Q22 Priority prevention and preparedness measures

Priority prevention and preparedness measures can be identified by the expected positive impact they are having or will have in terms of risk reduction (how effective they are). Priority measures can also be those that are most urgent in terms of addressing a certain risk. They can be understood as 'flagship measures'. Sometimes they may have been taken after a particularly severe disaster. How have 'priority prevention and preparedness measures' been defined in this context?

Prevention and preparedness measures can be either structural or non-structural:

- **structural measures:** 'structural measures are any physical construction to reduce or avoid possible impacts of hazards, or the application of engineering techniques or technology to achieve hazard resistance and resilience in structures or systems.' ⁽⁵³⁾ These can include population relocation, modification of the natural environment when justified (e.g. slope terracing), nature-based solutions (e.g. natural water retention measures), or forest management practices (e.g. forest conversion, fire breaks, controlled fires);

⁽⁵³⁾ United Nations General Assembly (2016). *Report of the open-ended intergovernmental expert working group on indicators and terminology relating to disaster risk reduction.*

- **non-structural measures:** 'non-structural measures are measures not involving physical construction which use knowledge, practice or agreement to reduce disaster risks and impacts, in particular through policies and laws, public awareness raising, training and education.' ⁽⁵⁴⁾

Measures can be either implemented or planned measures:

- **implemented measures** means ongoing measures which are currently reducing disaster risk (or are intended to);
- **planned measures** are measures which will definitely be carried out, either because funding has already been secured or because they are part of an approved and binding plan or strategy. If appropriate, these can be contrasted with (but should be differentiated from) measures that should ideally be taken to reduce risk (but are not planned so far).

For some risks, Member States are already reporting on prevention and preparedness measures under different EU laws and policies. If reporting on priority prevention and preparedness measures for this risk is already required by EU legislation or policies, please refer to any reports already sent to the Commission (see Annex). Please only refer to documents that include both prevention and preparedness measures - if one (or both) of the elements is missing, they should be included under Question 22.1 or 22.2.

Q22.1 Priority prevention measures

Describe existing priority prevention measures and any that are planned.

As part of this, please describe both structural and non-structural measures, as appropriate (see explanations above).

For the priority prevention measures, please describe, where applicable:

- authorities/ institutions responsible;
- implementation timeline;
- funding source(s).

The above elements can be grouped for multiple measures, if appropriate.

Prevention measures are measures that reduce the exposure and vulnerability of people and assets to a particular hazard or hazards, thereby preventing disaster. Decision No 1313/2013/EU defines prevention as: 'any action aimed at reducing risks or mitigating adverse consequences of a disaster for people, the environment and property, including cultural heritage' ⁽⁵⁵⁾.

Examples of prevention measures 'include dams or embankments that eliminate flood risks, land-use regulations that do not permit any settlement in high-risk zones, seismic engineering designs that ensure the survival and function of a critical building in any likely earthquake and immunisation against vaccine-preventable diseases' ⁽⁵⁶⁾.

Q22.2 Priority preparedness measures

Describe existing priority preparedness measures and any that are planned.

Please include both structural and non-structural measures, as appropriate (see explanations above).

For the priority preparedness measures, please describe, where applicable:

- authorities/institutions responsible;
- implementation timeline;
- funding source(s).

The above elements can be grouped for multiple measures if appropriate.

⁽⁵⁴⁾ *Ibid.*

⁽⁵⁵⁾ Article 4(4) of Decision 1313/2013/EU.

⁽⁵⁶⁾ United Nations General Assembly (2016). *Report of the open-ended intergovernmental expert working group on indicators and terminology relating to disaster risk reduction.*

Preparedness measures are designed to build the capacities needed to efficiently manage all types of emergencies. Decision No 1313/2013/EU defines preparedness as: 'a state of readiness and capability of human and material means, structures, communities and organisations enabling them to ensure an effective rapid response to a disaster, obtained as a result of action taken in advance' ⁽⁵⁷⁾.

Preparedness measures can be understood as including elements of crisis response/emergency management, but should not be limited to crisis response/emergency management only. For example, early warning systems and training and exercises are considered to be preparedness measures, yet they are used and in place between emergency situations as well.

Please include information for more cross border risks, as necessary, by copying the above questions.

Where appropriate:

Q23 Low probability risks with a high impact

List any low probability risks with a high impact.

On the basis of risks identified in Part I (Risk assessment), Member States should, as appropriate, identify risks which, for them, are low probability risks with a high impact. If a risk matrix is used, they are found in the top left-hand corner (low probability with a high impact). Please also consider that low probability risks with a high impact may not necessarily fall under 'key risks'. Member States are nevertheless encouraged, where appropriate, to identify any low probability risks with a high impact and describe prevention and preparedness measures to address these risks.

Q24 Priority prevention and preparedness measures

Please see the explanation under Question 22.

If a particular low probability risk with a high impact can also be classed as a key risk with cross-border impacts, please report on priority prevention and preparedness measures just once, providing a cross-reference.

For some risks, Member States are already reporting on prevention and preparedness measures under other EU legislation and policies. If reporting on priority prevention and preparedness measures for this risk is already required by EU legislation or policies, reference can be made to existing reports (see Annex).

Please only refer to documents that include both prevention and preparedness measures - if one (or both) of the elements is missing, they should be included under Question 24.1 and/or 24.2.

Q24.1 Priority prevention measures

Describe the existing priority prevention measures and any that are planned.

Please see the explanation under Question 22.1.

Q24.2 Priority preparedness measures

Describe the existing priority preparedness measures and any that are planned.

Please see the explanation under Question 22.2.

If EU legislation or policies already require reporting on priority prevention and preparedness measures addressing this risk, please simply refer to any reports already sent to the Commission.

Please include information for more low probability risks with a high impact, as necessary, by copying the above questions.

⁽⁵⁷⁾ Article 4(3) of Decision 1313/2013/EU.

ANNEX

Non-exhaustive list of risks relevant under EU legislation and/or policies**Critical infrastructure protection**

Council Directive 2008/114/EC on the identification and designation of European critical infrastructures and the assessment of the need to improve their protection (Text with EEA relevance) (OJ L 345, 23.12.2008, p. 75).

Additional link: Critical infrastructure

Drought, water pollution

Directive 2000/60/EC establishing a framework for Community action in the field of water policy (OJ L 327, 22.12.2000, p. 1). Consolidated version

Additional Links:

Implementation reports and river basin management plans

Water scarcity and droughts in the EU

Floods

Directive 2007/60/EC on the assessment and management of flood risks (Text with EEA relevance) (OJ L 288, 6.11.2007, p. 27). Consolidated version.

Communication on The Water Framework Directive and the Floods Directive: Actions towards the 'good status' of EU water and to reduce flood risks - COM/2015/120 final

Additional Links: Implementation reports and flood risk management plans

Forest strategy

A new EU forest strategy: for forests and the forest-based sector - COM(2013)659 final

Additional Links: EU forests and forest related policies

Rural development 2014-2020: Country files

Geological risks

Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC. Consolidated version

Additional links: Eurocodes

Health risks

Decision No 1082/2013/EU on serious cross-border threats to health and repealing Decision No 2119/98/EC (Text with EEA relevance) (OJ L 293, 5.11.2013, p. 1). Consolidated version.

Additional links:

Public health risk assessment ; European Food Safety Authority ⁽¹⁾

European Centre for Disease Prevention and Control ⁽²⁾

Animal and Plant disease

Regulation (EU) 2016/429 on transmissible animal diseases (Text with EEA relevance). Consolidated version

Directive 2005/65/EC on enhancing port security (Text with EEA relevance). Consolidated version

Measures for the control/combate of:

— Classical swine fever Council Directive 2001/89/EC. Consolidated version

— African swine fever Council Directive 2002/60/EC. Consolidated version

⁽¹⁾ In the event of a serious cross-border threat to health falling under its mandate

⁽²⁾ If the threat is of a) biological origin and consists of communicable diseases or antimicrobial resistance and healthcare-associated infections; or b) threats of unknown origin.

- African horse sickness Council Directive 92/35/EEC. Consolidated version.
- Foot-and-mouth disease Council Directive 2003/85/EC. Consolidated version.

Additional links: European Food Safety Authority

Industrial accident risks

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances (Text with EEA relevance)

Additional links:

Industrial accident policy

Report on the application in the Member States of Directive 96/82/EC

Chemical, biological, radiological and nuclear security risks

Council Decision (87/600/Euratom) on Community arrangements for the early exchange of information in the event of a radiological emergency

Action plan to enhance preparedness against chemical, biological, radiological and nuclear security risks - COM/2017/0610 final

Additional link:

Securing dangerous material policy

European Community Urgent Radiological Information Exchange (ECURIE)

Nuclear and radiological risk

Council Directive 2014/87/Euratom establishing a Community framework for the nuclear safety of nuclear installations

Council Directive 2013/59/Euratom laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation. Consolidated version

Energy security of supply - Electricity

Commission Regulation (EU) 2017/2196 establishing a network code on electricity emergency and restoration (Text with EEA relevance)

Regulation (EU) 2019/941 on risk-preparedness in the electricity sector (Text with EEA relevance.)

Review of current national rules and practices relating to risk preparedness in the area of security of electricity supply

Additional links:

Agency for the Cooperation of Energy Regulators (ACER)

European Network of Transmission System Operators for Electricity (ENTSO-E)

Energy security of supply - Gas

Regulation (EU) 2017/1938 concerning measures to safeguard the security of gas supply (Text with EEA relevance)

Directive (EU) 2016/1148 concerning measures for a high common level of security of network and information systems across the Union

Additional links: Preventive Action Plans and Emergency Plans - 2019

Agency for the Cooperation of Energy Regulators (ACER)

The European Network of Transmission System Operators for Gas (ENTSOG)

Offshore oil and gas safety

Directive 2013/30/EU on safety of offshore oil and gas operations and amending Directive 2004/35/EC (Text with EEA relevance) (OJ L 178, 28.6.2013, p. 66)

Additional links: Impact assessment and reviews

Maritime strategy

EU Maritime Security Strategy Action Plan

Directive 2014/89/EU establishing a framework for maritime spatial planning

Additional links: Overview of maritime spatial planning

Security-related risks

Communication on delivering the European Agenda on Security to fight against terrorism and pave the way towards an effective and genuine Security Union - COM(2016) 230 final

Joint framework on countering hybrid threats: a European Union response - JOIN/2016/018 final

Action plan to support the protection of public spaces - COM/2017/0612 final

Additional links:

European agenda on security

EU terrorism situation and trend report (TE-SAT 2018)

Agency: Europol

Cyber-security

Resilience, Deterrence and Defence: Building strong cybersecurity for the EU (JOIN/2017/0450 final)

Two legislative proposals to improve cross-border access to electronic evidence:

- Proposal for a Regulation on European Production and Preservation Orders for electronic evidence in criminal matters (COM/2018/225 final)
- Proposal for a Directive laying down harmonised rules on the appointment of legal representatives for the purpose of gathering evidence in criminal proceedings (COM/2018/226 final)

Cybersecurity in the energy sector

Commission Recommendation (EU) 2019/553 on cybersecurity in the energy sector (notified under document

Commission Impact Assessment (SWD/2018/403 final) establishing the European Cybersecurity Industrial, Technology and Research Competence Centre and the Network of National Coordination Centres

Additional links: Report: Recommendations on implementation on sector-specific rules for cybersecurity, 2019

Non-exhaustive list of cross-cutting areas of common interest in EU legislation and/or policies**Cultural heritage**

Towards an integrated approach to cultural heritage for Europe (COM/2014/0477 final)

A New European Agenda for Culture (COM/2018/267 final)

European Framework for Action on Cultural Heritage (SWD(2018) 491 final)

Additional links: Safeguarding cultural heritage from natural and man-made disasters. A comparative analysis of risk management in the EU

Natural areas and habitats

Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment

Report on the assessment of the effects of certain plans and programmes on the environment

Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment (Text with EEA relevance). Consolidated version

Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora. Consolidated version

Additional Links: Ecosystem services accounting

Climate change adaptation

Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action

An EU strategy on adaptation to climate change - COM/2013/0216 final

Report on the implementation of the EU strategy on adaptation to climate change - COM/2018/738 final

Additional links:

National Energy and Climate Plans

Country profiles

Adaptation preparedness scoreboard

Adaptation strategy - Evaluation process

PESETA project

Natura 2000 network of protected sites and the strict system of species protection

Environmental liability

Directive 2004/35/CE on environmental liability with regard to the prevention and remedying of environmental damage (OJ L 35, 18.7.2013). Consolidated version

Additional link: Environmental liability

Green infrastructure

Green infrastructure (GI) — Enhancing Europe's natural capital - COM/2013/0249 final

Additional links:

EU strategy on green infrastructure

Ecosystem services and Green Infrastructure

Mapping and assessment of ecosystems and their services

Migrations

Council Regulation (EU) 2016/369 on the provision of emergency support within the Union (OJ L 70, 16.3.2016, p. 1)

Additional links: Progress report on the Implementation of the European Agenda on Migration (COM/2019/126 final)

Data management

Directive 2007/2/EC establishing an Infrastructure for Spatial Information in the European Community (INSPIRE) (OJ L 108, 25.4.2007, p. 1)

Additional links:

Inspire knowledge base

Data specification for natural risk zones
