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JAI 484
IPCR 15
COHAFA 19
DEVGEN 33
CLIMA 121
ENV 306
FORETS 89

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Delegations will find attached document SWD(2024) 130 final (part 1/3).

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Brussels, 12.3.2024
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PART 1/3

COMMISSION STAFF WORKING DOCUMENT

***Supporting the* REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL on progress on implementation of article 6 of the Union Civil Protection Mechanism (Decision No 1313/2013/EU)**

Preventing and managing disaster risk in Europe

1. INTRODUCTION

Effective and coherent risk management, with due emphasis on prevention, is essential in order to save lives and livelihoods in a landscape of growing and evolving risks and disaster management challenges. To this end, Article 6 of the Decision on a Union Civil Protection Mechanism (hereafter the 'UCPM')[1], sets out obligations for both the European Commission and the Member States and Participating States[2] on actions to be taken regarding the prevention[3] of and preparedness[4] for disasters.

This staff working document (SWD) supports the progress report on the implementation of disaster risk management actions under Article 6[5] of the UCPM. The document provides more detailed information on the implementation of Article 6 and includes the Commission's analysis of the disaster risk management summary reports provided by Member States and Participating States between end 2020 and September 2022.[6]

2. PROGRESS ON THE IMPLEMENTATION OF ARTICLE 6 (ARTICLES 6(1), 6(2), 6(3), 6(4), 6(5))

2.1 Risk assessments, risk management capability assessment and risk management planning – and reporting on these issues (Article 6(1)(a-d), 6(3))

Since its inception, Article 6 (risk management), in Chapter II (prevention) aimed to promote an effective and coherent approach to disaster prevention and preparedness, by sharing non-sensitive information and best practices within the Union Civil Protection Mechanism (UCPM). The Article addresses Member States and Participating States, who are required to :

- develop **risk assessments** and share them with the Commission from December 2015 and every 3 years thereafter (Article 6(1)(a));

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[1] Decision No 1313/2013/EU of the European Parliament and of the Council of 17 December 2013 on a Union Civil Protection Mechanism, as amended by Decision No 2019/420, in particular Articles 5 and 6. (OJ L347, 20.12.2013, p.924).

[2] The 27 EU Member States and 10 Participating States are part of the UCPM. The Participating States are Iceland, Montenegro, North Macedonia, Norway, Serbia and Türkiye; joined by Albania and Bosnia and Herzegovina in 2022; and the Republic of Moldova and Ukraine in 2023. When national reports and findings are referred to in this document, 'countries' refers to the 27 EU Member States and the 6 countries that were Participating States at the at the end-December 2020 reporting deadline (Iceland, Montenegro, North Macedonia, Norway, Serbia and Türkiye), with the exception of Iceland that did not submit a report.

[3] 'prevention' means 'any action aimed at reducing risk or mitigating adverse consequences of a disaster for people, the environment and property, including cultural heritage' (Article 4(4)).

[4] 'preparedness' means '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' (Article 4(3)).

[5] COM (2024) 130 of 12.3.2024.

[6] At the time of publication of this report, the reporting for the 2023 deadline was still running and submitted reports had not been analysed. The findings, therefore, do not necessary reflect recent developments at national level.

- **develop and refine risk management planning** (Article 6(c)); and,
- make available a **risk management capability assessment** every three years following the finalisation of guidelines for such reporting (Article 6(1)(b)).

Risk assessments were reported by 31 of 34 countries for the 2015 deadline[7], and 30 (of 34) countries for the 2018 deadline[8] and 27 EU Member States and 5 Participating States submitted reports for the 2020 deadline[9]. Findings from the 2015 and 2018 risk assessment were presented in the reports entitled 'Overview of natural and man-made disaster risks the EU may face'[10].

Reporting guidelines were published in August 2015[11] for **risk management capability,** and 27 (of 34) countries submitted reports for the 2018 reporting deadline[12]. The reporting guidelines were repealed in 2019 and replaced new reporting guidelines adopted under Article 6(3).

The 2019 revision of the UCPM amended Article 6 by **changing the reporting requirements**, instead requiring countries to 'make available to the Commission a summary of the relevant elements of the assessments' of risk and risk management capability (Article 6(1)(d)) every three years, starting 31 December 2020. Article 6(3) also required development of 'guidelines on the submission of the summary' for such reports. Reporting guidelines were developed by the Commission, and the Member States and Participating States, and published in December 2019[13].

Risk assessments and risk management capability assessments (RMCA) also needed to be **further developed over time** and a new focus on **specific types of risks** was introduced. Member States now need to 'focus on key risks.' They also need to identify 'key risks with cross-border impacts and, where appropriate, low probability risks with high impact', and that for such measures countries are required to 'describe priority prevention and preparedness measures' in the summary reports.

The reporting on risk assessments under Article 6 of the UCPM is complementary to other reporting obligations, for example the risk assessments of critical entities for society and economy, as established under Article 5 of the **new Directive on the resilience of critical entities (CER Directive[14])**, which will enter into effect 2024, and the assessment of risks to

[7] For the 2015 deadline, all 28 EU Member States reported, as did 3 of the Participating States (Iceland, Norway and Serbia).
[8] For the 2018 deadline, 26 EU Member States reported (not Malta and Latvia) as did 4 of the Participating States (Iceland, Norway, Serbia, and North Macedonia).
[9] All 27 EU Member States reported (UK no longer included), but Malta resubmitted their 2015 report, and 5 of the Participating States reported (Iceland did not report).
[10] SWD(2017)176; SWD(2020)330.
[11] OJ C 261, 8.8.2015, p.5.
[12] Of the EU Member States: Malta did not report. Of the Participating States, only Norway submitted a report.
[13] Commission Notice 2019/C 428/07 with 'Reporting Guidelines on Disaster Risk Management, Article 6(1)(d) of Decision No 1313/2013'. OJ C428, 20.12.2019.
[14] Directive (EU) 2022/2557 of the European Parliament and of the Council of 14 December 2022 on the resilience of critical entities and repealing Council Directive 2008/114/EC (OJ L333 27.12.2022, p. 178). Article 5(2) of the Directive states that 'In carrying out Member State risk assessments, Member States shall take into

public health under Article 20 of the **Regulation on serious cross-border threats to health**[15]**,** reported via the Early Warning Response System (EWRS).

2.2 Peer reviews (Article 6(1)(e))

A peer review mechanism was included in Article 6 from 2013. In accordance with Article 6(1)(e), Member States may 'participate, on a voluntary basis, in peer reviews on the assessment of risk management capability.

The UCPM peer reviews offer Member States and Participating States, eligible third countries, and the European Neighbourhood Policy countries the possibility to undergo review of their disaster risk management (DRM) policies and practices by experts/practitioners ('peers') from other countries.

The programme's objective is to assist mutual learning between different civil protection authorities and disaster risk management organisations within the European Union and beyond. Peer reviews can improve effectiveness and coherence between the national DRM policies, stimulate wider transferability of good and innovative practices across countries, foster policy dialogue in the EU, and contribute to strengthening cooperation between UCPM countries. By linking prevention and preparedness with an effective response to disasters, the peer reviews contribute to an integrated approach to DRM.

A peer review focuses on specific issues put forward by the reviewed country or region (such as particular risks, certain geographical areas, risk assessments, risk management capacities, or legislative frameworks). Based on an independent analysis, the review assists civil protection authorities in improving their DRM capabilities, and

- identifies better approaches to policy and operations;
- raises awareness among stakeholders involved in DRM in the reviewed country;
- proposes concrete recommendations.

By mid-2023, 16 countries have undergone a peer review[16]. The two first **pilot** peer reviews 2012-2013, in the UK and Finland, assessed their disaster risk management in the context of the implementation of the Hyogo Framework for Action (2005-2015)[17] as the reviewing framework. In the **first cycle** of the peer review programme (2015-2016), the process for the six peer reviews was built on the experience of the two pilots and included two general disaster risk management reviews (Bulgaria, Türkiye), risk assessments (Georgia, Poland, Malta), early warnings (Georgia) and risk management capabilities (RMC) (Estonia).

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account at least the following: (a) the general risk assessment carried out pursuant to Article 6(1) of Decision No 1313/2013/EU'.

[15] Regulation (EU) 2022/2371 of the European Parliament and of the Council of 23 November 2022 on serious cross-border threats to health and repealing Decision No 1082/2013/EU (OJ L314, 6.12.2022, p.53-54).

[16] https://civil-protection-humanitarian-aid.ec.europa.eu/what/civil-protection/peer-review-programme_en.

[17] The Hyogo framework was the blueprint for disaster risk reduction efforts between 2005 and 2015, preceding the Sendai framework. See also: Hyogo Framework of action (preventionweb.net); Hyogo Framework for Action 2005-2015: Building the resilience of nations and communities to disasters — English (europa.eu).

In the **second cycle** (2017-2019), Cyprus chose to undergo a thematic review (focusing on risk assessment), while the five other countries opted to undergo comprehensive reviews (North Macedonia, Portugal, Serbia, Tunisia, Algeria). With the assistance of host countries and peers that participated in the 2017-2019 programme, a lessons learnt exercise was carried out in the second half of 2019, which included surveys and a workshop. The programme received positive feedback, and a number of constructive suggestions were made to further improve the programme. These were:

- a more flexible analytical framework that can be tailored to the specific needs of the reviewed country;
- expanding, where needed, the programme to 'peers' from policy areas closely related to civil protection (e.g., environment/climate adaptation, public works, health, economy and finance, etc.) – in order to make recommendations that are relevant and technically sound;
- implementation of recommendations put forward by a peer review: suggesting a methodology to monitor the follow up on recommendations.

Soon after, at the start of **the third cycle (2020-2024),** the received feedback resulted in a new analytical tool, the **peer review assessment framework (PRAF)**[18], developed to help customisation the peer review to fit the precise needs of the country or region under review. A step-by-step manual on how to conduct a peer review, targeted at the peers and country/region under review, was also produced. The programme cycle's preparatory phase was launched in February 2020, shortly before the COVID-19 outbreak which rendered peer review meetings impossible. Efforts instead focused on continuing to further **improve the overall methodology** and analytical framework (such as the PRAF and the manual). Two peer reviews were thereafter carried out with Romania in 2022 and Moldova in 2023.

Following two extreme wildfire seasons in 2021 and 2022, the Commission decided to strengthen work on wildfire prevention at the EU level. Ten actions, based on the legal mandate of the UCPM, were identified to form a **wildfire prevention action plan**. One such action was to facilitate peer reviews of wildfire risk management systems and help countries assess their capacity to prevent and prepare for wildfires. A **wildfire peer review assessment framework (Wildfire PRAF)**[19], was published on 29 May 2023, developed with the involvement of wildfire experts from the Member States and other wildfire prevention experts. In 2024, three targeted peer reviews focussing on wildfires will be carried out in Greece, Italy and the Land of Brandenburg (Germany).

2.3 Improved collection of disaster loss data (Article 6(1)(f))

[18] Peer Review programme (europa.eu).
[19] Wildfire_PRAF_V2.pdf (europa.eu).

The 2021 revision included a requirement for Member States and Participating States to 'improve the collection of disaster loss data at national or appropriate sub-national level, to ensure evidence-based scenario building as referred to in Article 10(1) the identification of gaps in disaster response capacities.' The data on losses caused by disasters is crucial for a robust assessment of risks, the development of evidence-based scenarios for potential disasters, and the implementation of effective risk management measures.[20] Article 6(1)(f) furthermore states that this should be 'in line with international commitments'. As specified in the recitals, such international frameworks are the 'Sendai Framework for Disaster Risk Reduction 2015-2030, the Paris Agreement adopted under the United Nations Framework Convention on Climate Change and the United Nations 2030 Agenda for Sustainable Development.'

The collection of loss data has been subject to two cycles of risk management capability reporting. According to the analysis of the 2020 reports loss data collection remains patchy at the national level with partial reporting either for certain risks or addressing certain types of losses only. With only a handful of countries referring to publicly available databases on disaster loss data, there is scope for improvement. Similar conclusions can be drawn for the reporting under the Sendai Framework.

The importance of disaster risk and loss data was emphasised in the 2021 strategies on Climate Change Adaptation[21] and on Sustainable Finance[22], reiterating the need to improve the collection of loss data. The Commission staff working document 'Closing the climate protection gap – Scoping Policy and data gaps'[23] remarked that 'despite existing recommendations from the European Commission and other international organisations, there is currently no mechanism in place in most EU Member States to collect, assess or report economic losses from weather and climate-related extreme events.'

To support the efforts to improve loss data collection, the Commission is developing of the Disaster Risk Management Knowledge Centre's Risk Data Hub (DRMKC RDH)[24] operated by the Joint Research Centre. The Commission is also supporting the development of regional climate risk assessment, and in that context the reporting of risk data to the Risk Data Hub. An October 2023 workshop with authorities responsible for the implementation of the Floods Directive concluded that loss data collection related to past flood events should be improved. Funding was made available from the UCPM to support Member States to develop or enhance national multi-hazard disaster loss database[25].

2.4 Mechanisms to reinforce prevention and preparedness (Articles 6(2), 6(4))

2.4.1 Specific consultation mechanism (Article 6(2))

[20] Recital 11, Regulation (EU) 2021/836 amending the UCPM.
[21] COM(2021) final 'Forging a climate-resilient Europe - the new EU Strategy on Adaptation to Climate Change' – chapter 2.1.2 *More and better climate-related risk and losses data.*
[22] COM(2021)390 final 'Strategy for Financing the Transition to a Sustainable Economy'.
[23] SWD(2021)123 final.
[24] https://drmkc.jrc.ec.europa.eu/risk-data-hub/.
[25] Eligible activity in the 2022 call for national projects.

Since the 2019 review of the UCPM, there is an option to 'establish specific consultation mechanisms to enhance appropriate prevention and preparedness planning and coordination among Member States that are prone to similar types of disasters.' This option is aimed at 'cross-border risks and low probability risks with a high impact.'

The Commission meets regularly with Member States and Participating States in different expert groups and working groups to exchange information and consult on specific risks or risk management methods. This includes disaster prevention; preparedness for the season of increased wildfire activity; early warning systems; scenarios; and capacities to name a few, with information exchanged on a variety of disaster risk management practices. Countries were for instance consulted on disaster resilience goals (DRGs) and scenarios. Each year, 'Lessons Learnt' meetings are also held to draw conclusions on how to improve preparedness, response and prevention for those risks, and to take stock of damages.

However, the options of establishing consultation mechanisms **to a limited group of countries**, has not been used, the current preferred option being regular and inclusive exchanges with all countries on disaster risk.

2.4.2 Multiple requests for assistance from the UCPM (Article 6(4))

The 2019 revision of the UCPM decision also introduced a new procedure aimed at supporting a Member State or a Participating State that 'frequently requests the same type of assistance through the UCPM for the same type of disaster' when national resources are deemed insufficient, to 'strengthen its level of prevention and preparedness'. The Article 6(4) mechanism is triggered when a country requests 'the same type of assistance through the Union Mechanism for the same type of disaster three times within three consecutive years. The procedure is not triggered if the Commission deems it not necessary to launch the procedure based on a careful analysis of the circumstances of the requests for assistance with response to a disaster event. This procedure was introduced to strengthen management, particularly prevention, of the most important risks and to strengthen the transparency on risk management measures. This is in view of the limited requirements (Article 6(1)) on risk management planning measures.

Under Article 6(4), the Commission may ask the country concerned to '(a) provide additional information on specific prevention and preparedness measures related to the risk in question' and when deemed appropriate, '(b) propose the deployment of an expert team to provide advice on prevention and preparedness measures' or 'make recommendations to strengthen prevention and preparedness'. After recommendations are issued, there should be a mutual information exchange between the Member State and the Commission on measures taken to follow up on the recommendations. The recital introducing the mechanism, calls for consideration of the administrative burden and the need to ensure adequate links to other key EU policies, in particular to EU funds.

The Commission monitors the requests for assistance for the purpose of this Article. Activations of the UCPM before this article took effect (i.e. before 21 March 2019) show that the highest number of such requests for assistance were primarily issued for **wildfires**. Between 2007-2019, Member States and Participating States countries requested assistance for wildfires 60 times, with the next most frequent requests relating to population displacement (12 times), floods (9

times), and accidents (8 times)[26]. Of the countries requesting assistance for wildfires in this period, Greece requested assistance 16 times, followed by Portugal (15), Italy (7), France and Montenegro (5) and Bulgaria, Cyprus, and Sweden (3)[27].

Since 2019, the most frequent requests for assistance concern wildfires, outbreak of disease, medical assistance and consular support, particularly for repatriation flights for EU citizens stranded outside the EU. The Commission has examined the circumstances of the requests for assistance for **outbreak of disease, medical assistance and consular support** and concluded that this procedure needs not be applied for these activations. This is because of the exceptional circumstances and limited scope for additional effective prevention and preparedness in the case of such situations (e.g. consular support for repatriation flights due to COVID-19 outbreak or conflicts in third countries). For outbreaks of disease and medical assistance, the type of assistance requested varies between requests (e.g. medical evacuations, need for specific medicines or medical supplies). Many activations for outbreak were related to COVID-19, with some also relating to other medical support and diseases such as Mpox. For instance Poland requested assistance twice for medical evacuations related to the war in Ukraine, and once for medical supplies for Mpox. Romania also requested different type of assistance for medical supplies (Imo globulin), medical supplies for Mpox and medical evacuations for burns treatment following an explosion.

[26] SWD (2020)330 of 30.11.2020. Commission staff working document "Overview of natural and manmade disaster risks the European Union may face", third edition. Table 3.
[27] SWD(2020)330. Table 4.

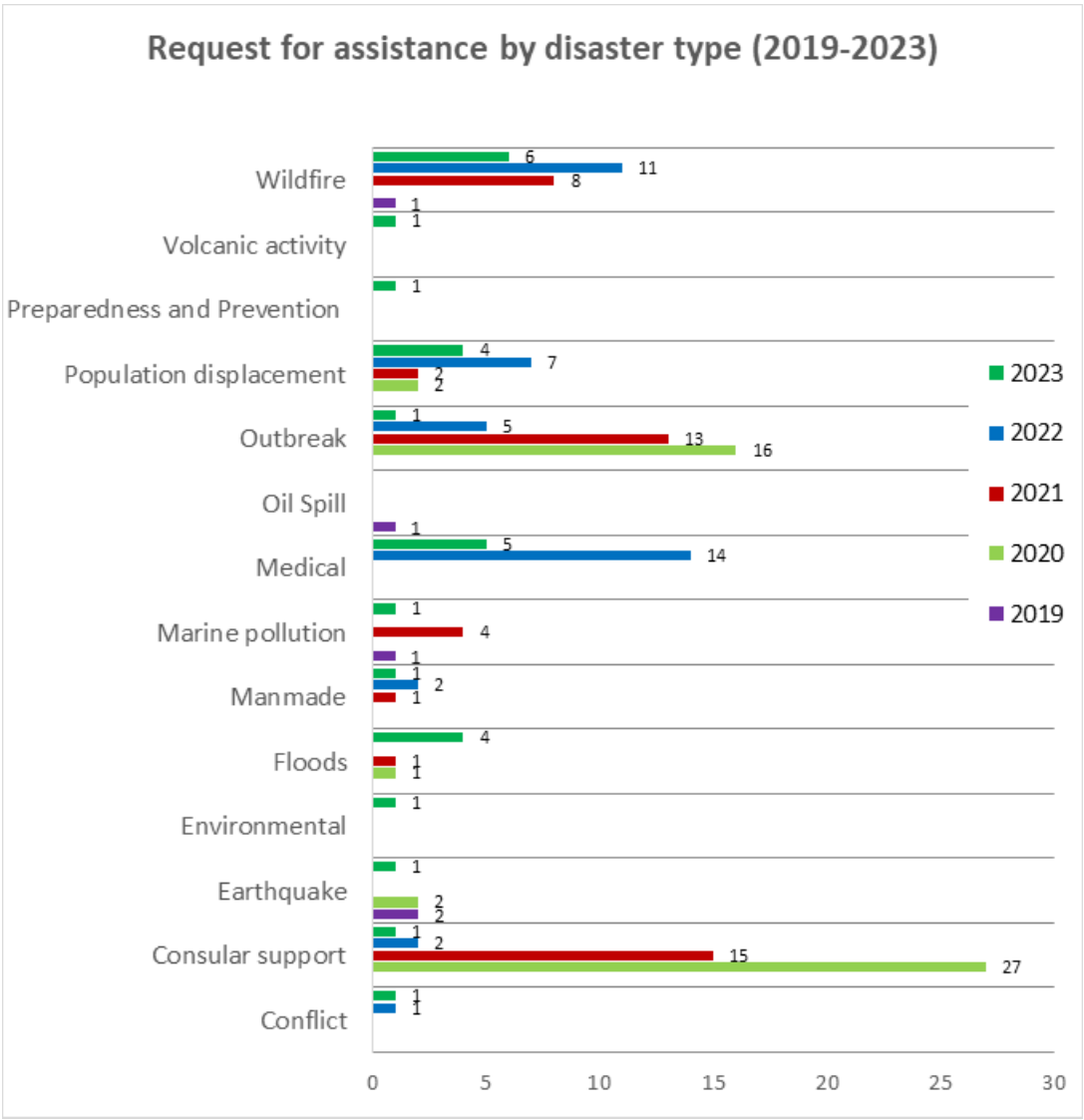


Figure 1. *Number of activations per type of disaster since 2019 by countries who were EU Member States or Participating States at the time of the request for assistance. Source: Emergency Response Coordination Centre (ERCC), January 2024.*

Type of disaster Country	Requests by year					
	2019	2020	2021	2022	2023	Total
Consular support						
France		1	3			4
Netherlands		1	2	1		4
Spain		1	2			3
Romania			3			3
Manmade(disruption energy)						
Moldova			(1)	(2)	1	(3+)1
Medical						
Romania				2	1	3
Poland				2	1	3
Outbreak						
Moldova		(1)	(1)	(2)		(4)
Montenegro		1	1	1		3
Serbia		1	2			3
Bosnia and Herzegovina		(1)	(1)	(1)		(3)
Ukraine		(1)	(1)	(1)		(3)
Wildfire						
Albania			(1)	(3)	1	(4+)1
Greece	1		1		2	4
Italy			2		1	3
Cyprus			1		2	3

Table 1. Requests for assistance from the UCPM by year and type of disaster, *for which three activations or more has been made since 2019 by Member State and Participating State. Activations by countries prior to them becoming Participating States are shown in brackets. Source: Emergency Response Coordination Centre (ERCC), January 2024.*

Work is ongoing to strengthen both preparedness and prevention on wildfire risk management. This is in view of the historically high number of requests for wildfires, as well as the strong negative trends observed for wildfires in recent years (numbers, area burnt, longer wildfire season). The Commission and the Member States and Participating States are therefore cooperating closely to increase **preparedness and strengthen response capacities** at national and European level and to encourage the use of shared response resources through the rescEU or European civil protection pool. Firefighters from other parts of Europe are systematically prepositioned in certain more fire-prone countries during months with increased fire danger and regular meetings are held prior to and during the wildfire season. Targeted lessons learnt meetings focusing on recent wildfire events have also taken place on a number of occasions.

To also address **prevention,** the Commission launched a 10-point wildfire prevention action plan, based on the legal mandate of the UCPM (including Article 5 and 6), to support countries' wildfire prevention actions. At European level, a number of other policies support wildfire prevention, particularly the 2030 Forest Strategy[28], and funding under the common agricultural policy and the cohesion policy funds.

The threshold for activating the process following three requests for the same type of assistance for the same disaster (Article 6(4)) is designed to ensure that national prevention efforts are strengthened in relation to risk intensity. The Commission is carrying out a careful analysis of the reasons and circumstances of activations for the same type of disaster to assess if the conditions to apply the mechanism of Article 6(4) have been met.

[28] COM(2021)572

2.5 Disaster resilience goals (Article 6(5))

The 2021 revision of the UCPM introduced the new concept of Union disaster resilience goals (DRGs), stating that 'The Commission, in cooperation with Member States, shall establish and develop Union disaster resilience goals in the area of civil protection'. On 8 February 2023 the Commission adopted a communication[29] and a recommendation[30] that established five such goals to be met at EU and national levels:

1. Anticipate - Improving risk assessment, anticipation and disaster risk management planning.
2. Prepare - Increasing risk awareness and preparedness of the population.
3. Alert - Enhancing early warning.
4. Respond - Enhancing the Union Civil Protection Mechanism's response capacity.
5. Secure - Ensuring a robust Civil Protection System.

For each goal a number of specific objectives are set out, covering different aspects of risk management. The Commission Recommendation is non-binding. To support the implementation of the Union DRGs, the Commission also published a communication that introduced flagship actions for each goal.

Article 6(5) furthermore states that 'Those goals shall be based on current and forward-looking scenarios, including the impacts of climate change on disaster risks, data on past events and cross-sectoral impact analysis, with particular attention given to vulnerable groups.' A first set of disaster scenarios are being developed and will feed into the development of the Union DRGs.

Article 34(2), requires the Commission to 'provide regular information inter alia on the progress made towards the Union disaster resilience goals' Member States are encouraged to provide the Commission with relevant information on the implementation of the DRGs.

The reporting guidelines for summary reports established according to Article 6(3), already implicitly ask Member States and Participating States to provide information on different relevant aspects of implementation of the Union DRGs. Countries are encouraged to both update and complete their reporting of their progress of implementing the goals in the regular reporting required under Article 6(1)(d). Once the Commission has reviewed the reports received for the 2023 reporting deadline, it intends to start the procedures to revise the reporting guidelines to also take into account the implementation Union DRGs, in order to avoid duplication of reporting requirements.

[29] COM(2023) 61 final of 8.2.2023, "European Union Disaster Resilience Goals: Acting together to deal with future emergencies".
[30] OJ C 56, 15.2.2023, p.1.

3. STATUS OF REPORTING BY MEMBER STATES AND PARTICIPATING STATES (ARTICLE 6(1)(D))

Article 6(1)(d) requires Member States and Participating States to submit disaster risk management (DRM) summary reports to the Commission from 31 December 2020, and every three years thereafter. For the 2020 reporting cycle, the Commission received reports from 32 countries. Whilst many reports provided[31] by the countries for the 2020 deadline were submitted on time, a significant number of them experienced delays in preparing the reports. These were mostly due to exceptional circumstances related to the COVID-19 pandemic, including lock-downs and other priorities placed on civil protection agencies. Some countries submitted their reports later in to the context of applications for EU funding. The Commission services chose to consider reports received by September 2022 for the purpose of this report.

Most countries reported to the Commission based on 2019 reporting guidelines[32]. While the reporting guidelines are not strictly binding on them, they help structure the DRM reports and ensure a higher degree of comparability of findings. Due to new requirements, the reports submitted for the 2020 deadline (hereafter the 2020 reports) were mostly different in content from previous reports[33], meaning that comparisons with previous reports were not always possible. The 2019 reporting guidelines contain 24 questions divided into three parts, and also include more detailed guidance on what should be included in the replies:

- Part I: Risk assessments (Q1-Q8)
- Part II: Risk management capability assessments (Q9-Q20)
- Part III: Priority and prevention and preparedness measures addressing key risks with cross-border impacts and, where appropriate, low probability risks with a high impact (Q21-Q24).

Countries follow the guidelines to differing extents (see Figure 3). Most followed the reporting guidelines, even though the replies varied greatly in terms of the depth of the information provided. A limited number of countries used the template but did not provide information on all questions or submitted more simplified or partial reports. A few did not follow the guidelines and submitted other reports instead, such as national risk assessments and strategic security assessment reports. One country (Malta) chose to submit a previous risk assessment stating that the assessments from 2015 are still valid for 2020. The length of the reports varies from less than 20 pages to more than 350 pages in one case. The number of questions answered also varies (Figure 2). There is a clear correlation between the use of the reporting template and the completeness of the replies. Countries that submitted full risk assessments in longer documents that are not summaries did not necessarily answer all questions.

[31] AT, BE, BG, CY, CZ, DE, DK, EE, EL, ES, FI, FR, HR, HU, IE, IT, LT, LU, LV, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, TR. IC did not report for the 2020 deadline.
[32] Commission Notice 2019/C 428/07 with '*Reporting Guidelines on Disaster Risk Management, Article 6(1)(d) of Decision No 1313/2013*' was published in the Official Journal.
[33] 2015 (risk assessment), 2017 (risk management capability assessment), and 2018 (risk assessment).

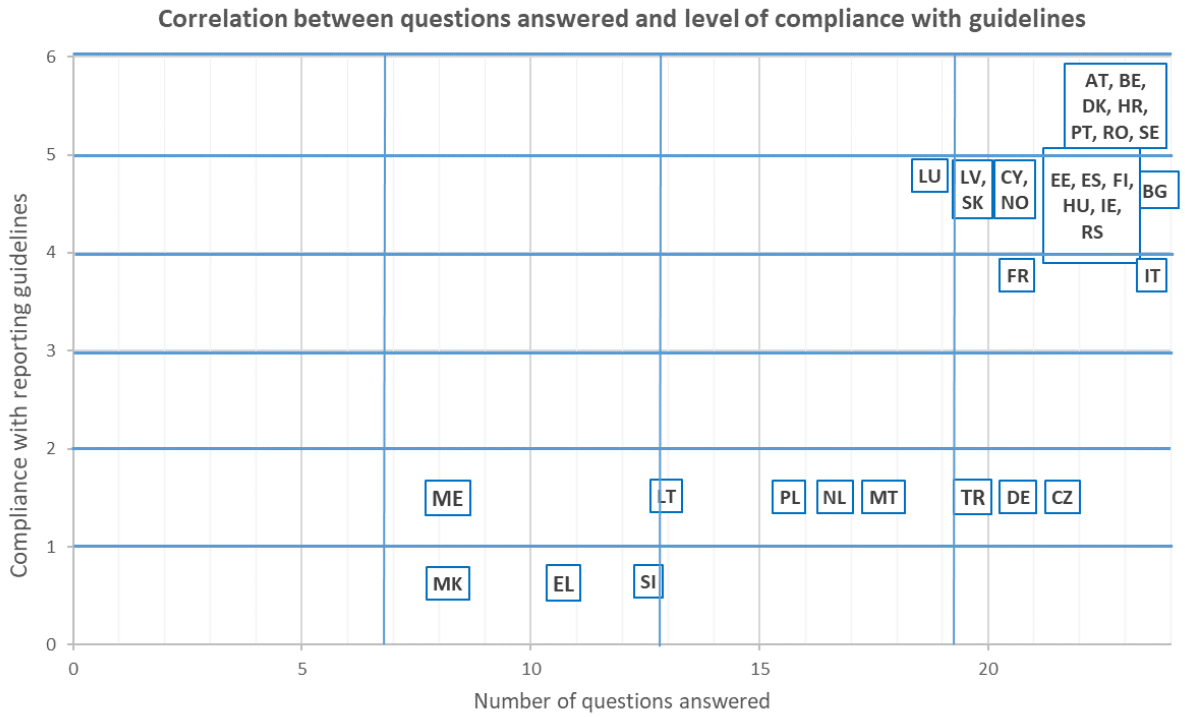


Figure 2. Correlation between the number of answered questions and the level of compliance with the reporting guidelines. *The horizontal axis shows the number of questions answered. The vertical axis shows an assessment of the degree of compliance with the reporting guidelines. 0-1: guidelines not used; limited information provided. 1-2: guidelines not used; more information provided. 2-3: guidelines partly used; limited information provided. 3-4: guidelines partly used or reorganised. 4-5: guidelines used; limited information provided on some questions. 5-6: guidelines used; extensive information provided.*

While comparability and completeness on reporting of risk management capabilities (RMC) have increased since the previous reporting cycles, the analysis that follows shows under-reporting on certain points. This hampers comparability and the establishment of a complete baseline for analysis of the report[34].

[34] Reports based on the previous risk assessment reports submitted to the Commission can be found in the second and third 'Overview of natural and man-made disaster risks the EU may face' report. COM(2020)330 and COM(2017)176.

4. DISASTER RISK ASSESSMENTS (ARTICLE 6(1)(A) AND (D))

4.1 Identifying key risks at national or sub-national level (Q3)

Question 3[35]. *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 that could have significant adverse human, economic, environmental and political/social impacts (including impacts on security).*

Key findings (Q3):

- *The* ***risks of highest concern to most Member States and Participating States*** *remain the same as in previous reports: floods, extreme weather, and human health-related risks, as well as nuclear and radiological risks, and industrial accidents. The most* ***significant change*** *to the risk landscape is the increasing concern for droughts, for which concern has almost doubled since 2015.*
- *Other risks, growing in importance, include solid mass-risks, geopolitical and societal risk, as well as environmental and chemical risks.*
- *Almost all countries provided information on* ***cross-border*** *risks and identified* ***high-impact low probability risks*** *as well as* ***emerging*** *or* ***future risks.***
- ***Key drivers*** *for changing the risk landscape include climate change, technological developments and a changing security/political landscape.*

The response rate among Member States and Participating States on key risks is high. All countries replied to the question and identified key risks as well as cross-border risks. Fewer replied on the identification of high-impact low probability risks, while about two-thirds replied on the identification of emerging risks (Figure 3).

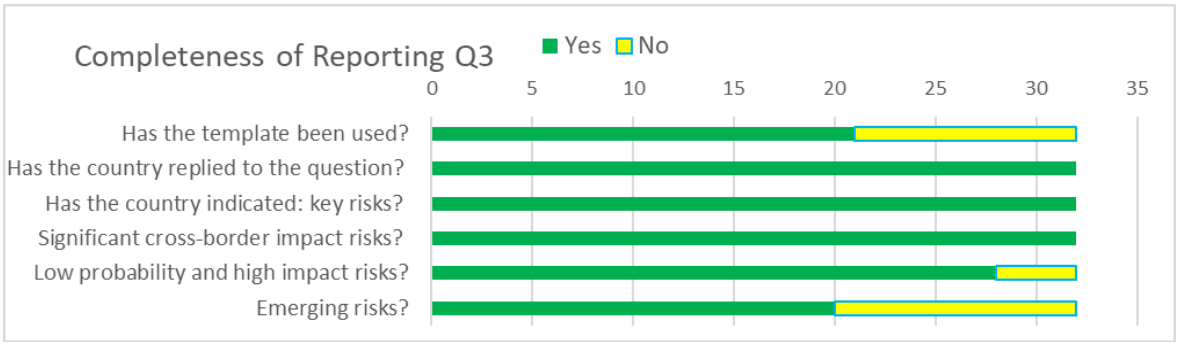


Figure 3. Number of countries that replied to Q3. *Source 2020 DRM summary reports.*

[35] Key questions asked in the reporting guidelines.

4.1.1 Identification of key risks

The risks of concern to most Member States and Participating States are **floods, extreme weather, and human health-related risks, as well as nuclear and radiological risks, and industrial accidents.** These are also among the risks of highest concern identified by countries in the previous years (Figure 4)[36].

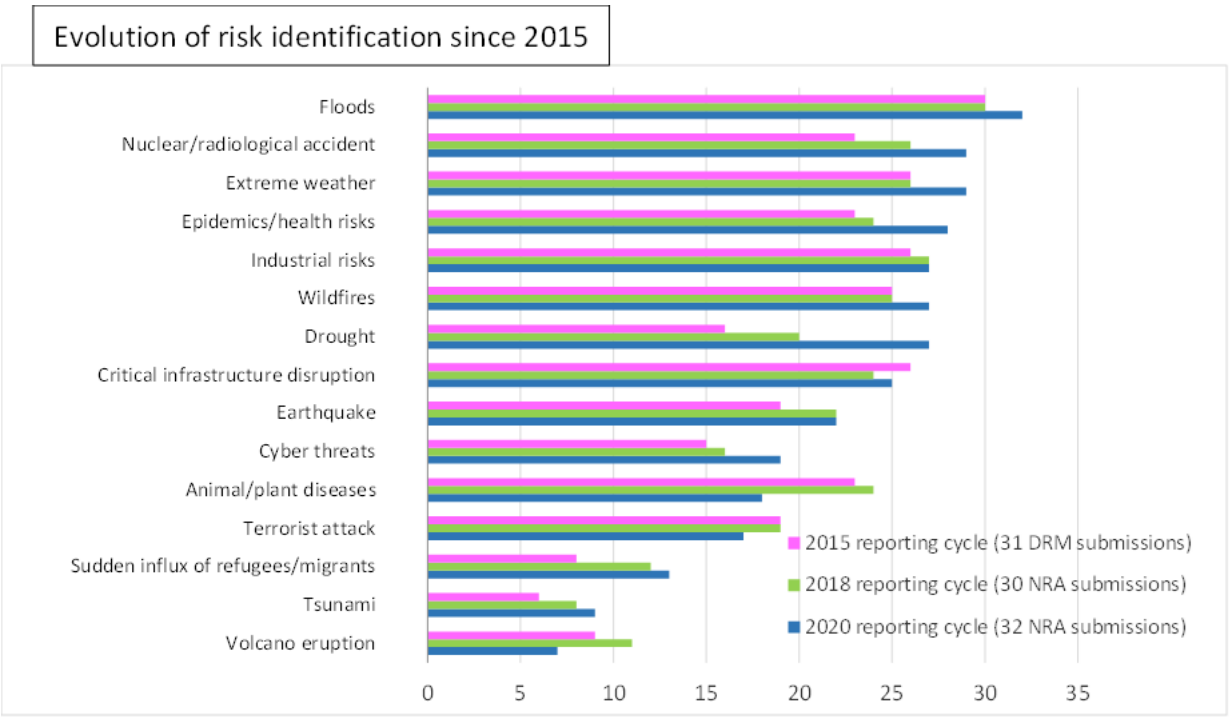


Figure 4. Evolution of er time of key risks identified for risks included in the third Overview of risks*(Figure 24). Sources: 2015 report (2017 Overview), 2018 (2020 Overview), 2020 (DRM summary report) (Q3).*

Over time, some trends can be observed in the risks identified by the countries. The risk which saw the **strongest increase** in reporting concerns **drought**, with almost double the number of countries reporting it since 2015. This risk now concerns most of the countries in Europe (Figure 5). Other risks, namely nuclear and radiological accidents, human health risks, cyber threats, tsunamis, and sudden influx of refugees/migrants, also saw an increase over time (Figure 4). The only risks with a significant **decrease** in identification are **animal and plant health-related risks.**

[36] There was no available complete international taxonomy of disaster risks that adequately covers all relevant types of natural and man-made disasters considered in the 2020 reporting cycle. Countries use different definitions for key risks and do not always include criteria for risk identification in the reports. For the purpose of this analysis, there was a need for some aggregation (e.g. the flood risk includes all different kind of floods, such as fluvial, coastal, or flash floods) and expert judgement of the risks identified by countries. Different definitions of disaster risks, and translations of reports submitted in national languages, may have also impacted the comparison of key risks across countries and over time.

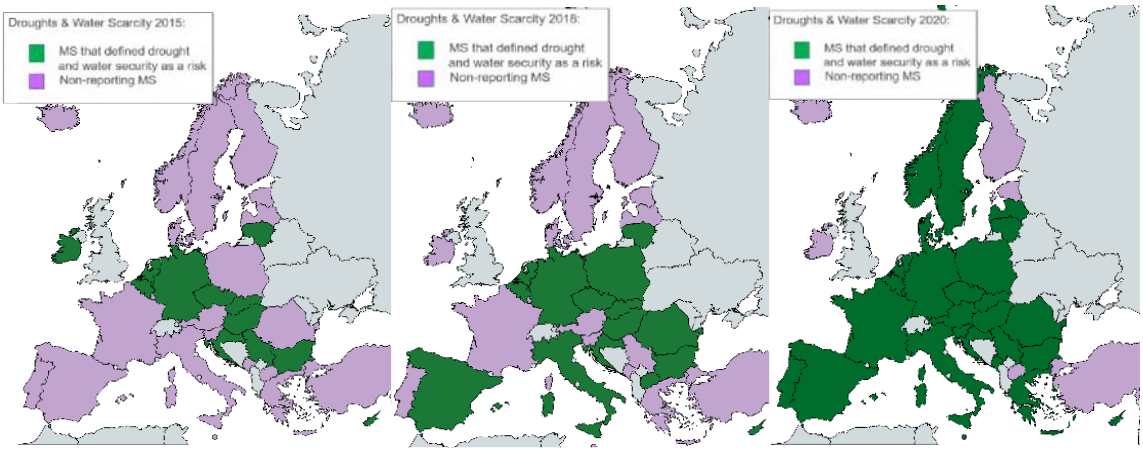


Figure 5. Countries identifying droughts as a key risk in the 2015, 2018 and 2020 reports *according to Article 6(1)(d)(UCPM). Green: droughts identified as relevant risk, Purple: countries that have not identified droughts as a relevant risk. Source: 2017, 2020 Overview of risks reports, as well as 2020 DRM summary reports.*[37]

Other risks, not flagged in previous reports, are also growing in importance. Two-thirds of countries are concerned about **solid mass-risks.** There has also been a significant increase in the number of countries identifying **geopolitical and societal risks, as well as environmental and chemical risks. Transport related risks** are of concern for about half of the countries. (Figure 6 and 7).

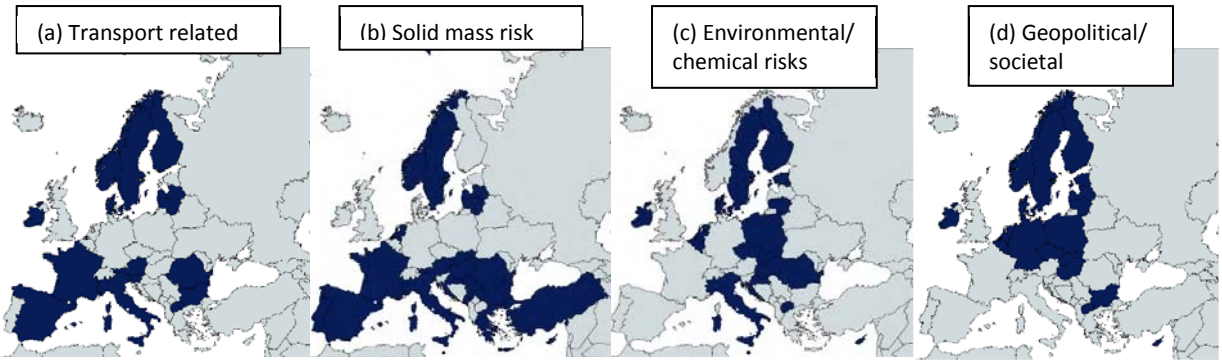


Figure 6. Risks not analysed in previous Overview of risk reports*. Source: 2020 DRM summary reports.*

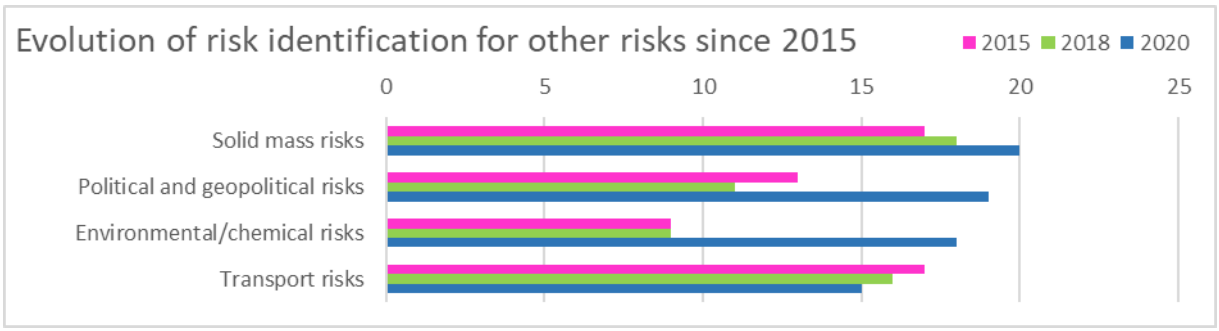


Figure 7. Preliminary comparison of other risks identified in 2015, 2018 and 2020 reports*. Source: 2015 report (2017 Overview), 2018 (2020 Overview), 2020 (DRM summary report) (Q3).*

[37] See also Annex II for further information on the change over time of other risks.

For the first time, countries were also asked to identify key risks which could have **significant adverse cross-border** impacts. For the 28 countries[38] that identified such cross-border risks, the most commonly identified risks are **nuclear and radiological risks, floods, wildfires, human health risks, critical infrastructure and supply disruptions** (electricity, water, energy and food), and **industrial risks**.

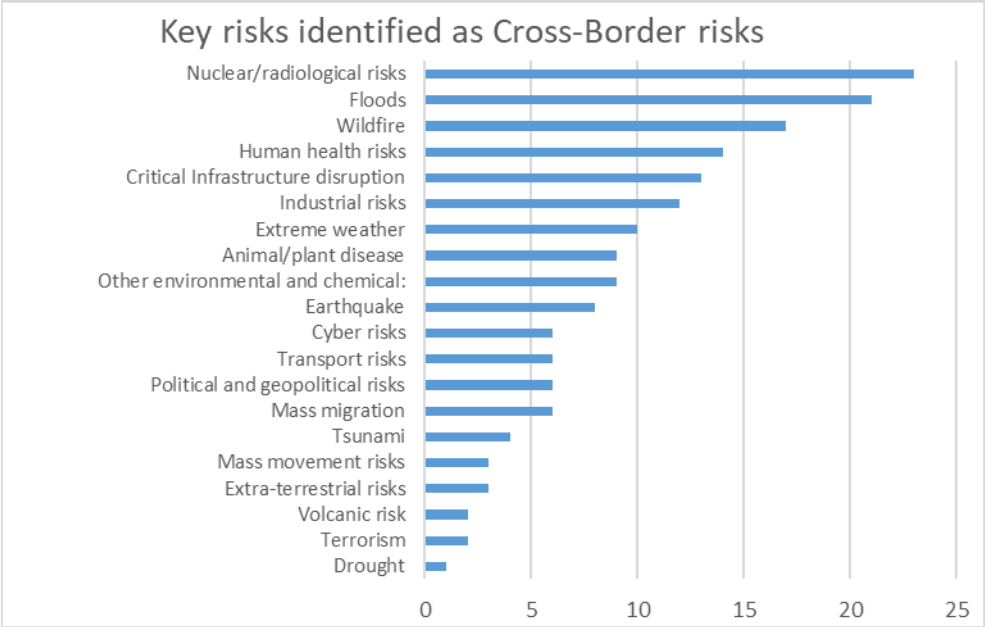
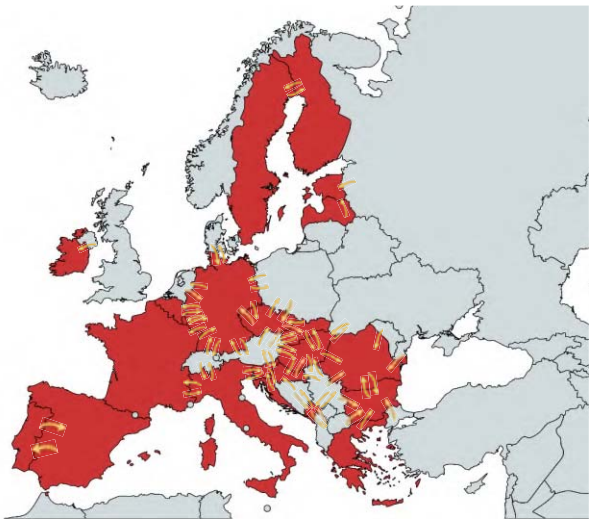


Figure 8. Key risk categories identified as cross-border risks *ranked according to the number of countries reporting them. Source: 2020 DRM summary reports.*

In some cases there is some asymmetry in the identification of cross-border risks between countries. For instance, one country indicates that a risk originating in their own territory may have an effect on neighbouring countries, while those neighbouring countries have not considered this specific risk. This is for example the case of **flood risk** (Figure 9)**,** which is also the second most reported cross-border risk.



[38] AT, BE, BG, CY, CZ, DE, DK, EE, EL, ES, FI, FR, DE, HR, HU, IE, IT, LU, LV, MT, ME, NL, PT, RO, SE, SK, MT, TR.

***Figure 9. Countries identifying flood as a cross-border risk or risk with potential transboundary impacts**, also indicating the direction of impact as stated by countries identifying the risk as such. Source: 2020 DRM summary reports.*

The 2020 reporting cycle was also the first time countries were asked explicitly to identify **high impact low probability (HILP)** risks[39]. Of the 29 countries[40] that identify such risks at the national and/or regional level, the two most commonly identified HILP risks are nuclear and radiological risks (18) and industrial risks (14) (Figure 10). For the other risks, the landscape is much more fragmented, with different countries identifying different risks.

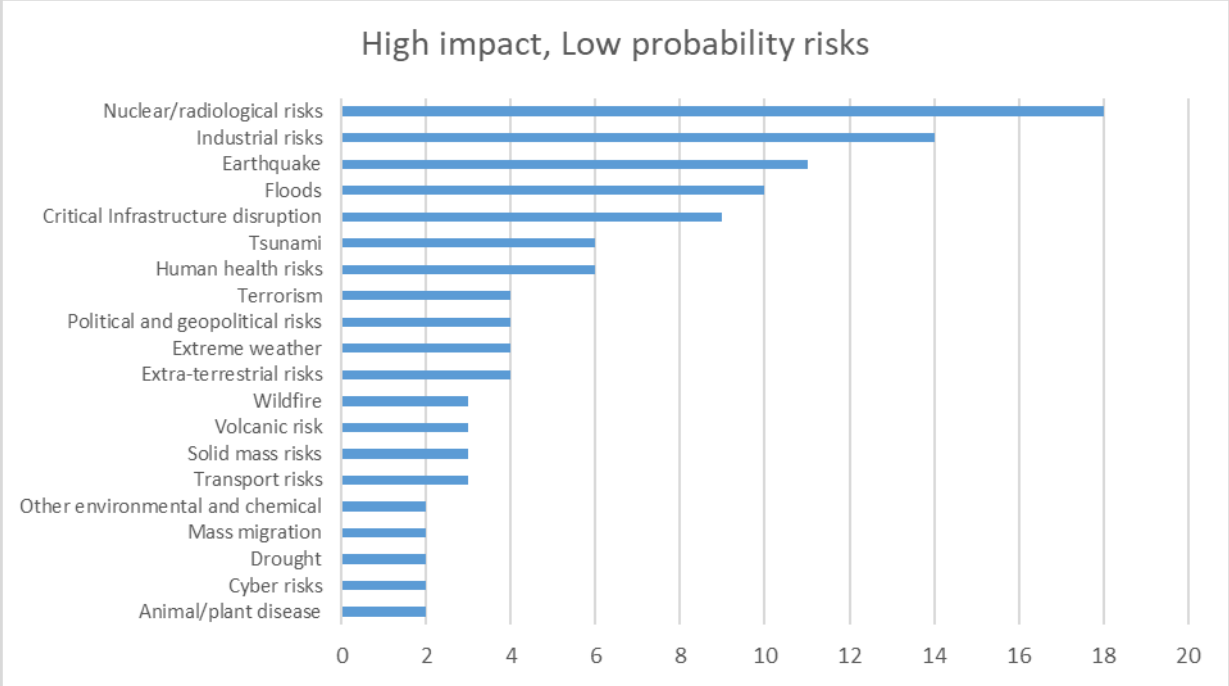


***Figure 10. Risk categories identified as HILP risks** ranked according to the number of Member States reporting them. Source: 2020 DRM summary reports.*

For the 2020 reporting, the scope of risk identification was also further broadened to include **emerging or future risks**, i.e. **'new' risks** or existing risks for which concern has increased, and, where appropriate, the identification of **high-impact low probability risk**.

While **'emerging risks'** were referred to in the previous reporting of risks, it is only within the current reporting cycle that countries were asked to explicitly identify them. Emerging risks can be linked to the hazards themselves (and their intensity and frequency) as well as to the

[39] The concept of low probability and high impact can be defined in different ways. For example, one available definition for the purpose of rescEU (Decision (EU)2019/570 as amended) defined HILP risks as risks with low probability of occurrence that can be characterised as much lower than once in 100 years, but with (alternatively) either human, economic, environmental, or political/social impacts very high (eg. over 100 probable deaths, several billions of direct damages, impact on large sections of the population). Some countries explicitly state that they are hesitant to identify HILP risks, as it implies a lower prioritisation of mitigation measures, which may be misleading at the national level.

[40] All but CY, LU and MK.

increase in the country's exposure and vulnerability. In general, reports do not elaborate in depth on why risks are considered emerging and/or future risks.

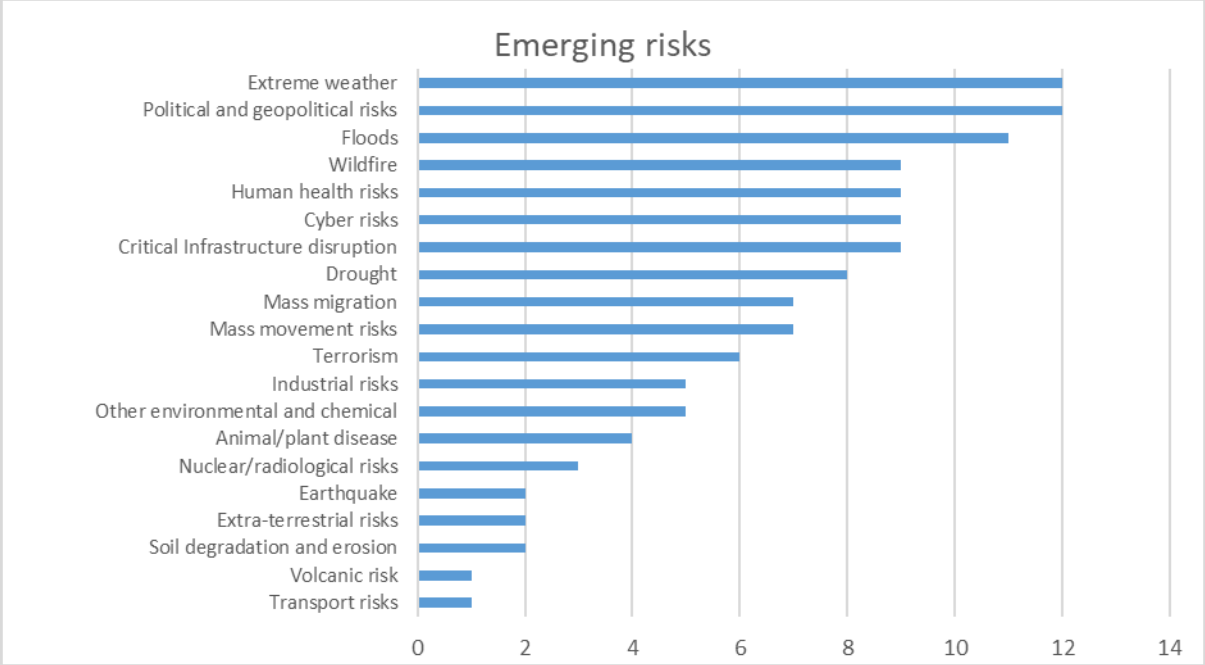


Figure 11. Risk categories identified as emerging risks *ranked according to the number of Member States reporting them. Source: 2020 DRM summary reports (Q3).*

A total of 24 countries[41] identified emerging risks. The most commonly reported are **extreme weather, political or geopolitical risks[42], floods, wildfires, health-related risks, cyber risks**, **and critical infrastructure/supply disruption risks**. **Climate-related hazards** (extreme weather, floods, wildfire) are prominent among the emerging risks identified by a majority of countries and some (8)[43] also refer to broader 'climate-related risks' in general). Extra-terrestrial risk was identified by a few countries as an example of a natural hazard (solar storms) which may become an increasingly important risk over time due to the increasing societal vulnerability of communication systems.

4.1.2 Risk drivers

[41] AT, BE, CY, DE, DK, EE, EL, ES, HR, HU, IE, IT, LT, LU, LV, ME, NL, NO, PT, RO, RS, SI, SK, TR.
[42] Geopolitical risks as reported by countries (see Figure 1.14 in Annex II 'Risk Specific Information') may refer to: security policy tensions and risks; use of military force/invasion; political, financial and military pressure; threats from nuclear arms; use of biological weapons. Political risks may refer to: mass unrest, rule of law disruption, espionage acts, political instability, polarisation and societal risks.
[43] BE, CY, DK, EL, HU, LU, NL, SI.

Risk driver identification and analysis are important elements in assessing the probability of a certain hazards in the future and identifying new potential risks.

Over the three reporting cycles, climate change, urbanisation and globalisation-related issues have been considered consistently as risk drivers. In the 2020 reporting cycle, 10 countries[44] indicated climate change as a key driver for future and /or new emerging risks.

Other **risk drivers** include technological developments, and changing security/political landscape, global financial and economic developments, socio-economic and demographic developments and environmental degradation. In addition to the most commonly identified drivers for future risks, there are also some risks, such as Brexit, that are country specific.

4.2 Identifying climate change impacts (Q4)

Question 4: *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 or any relevant and climate risk and vulnerability assessments, where appropriate.*

Key findings (Q4):

- *Floods, drought, and wildfires are the **climate-related hazards of key concern** to Member States and Participating States.*
- *Countries identify mainly **acute hazards** (such as floods, wildfires, droughts) rather than **chronic hazards**.*
- *Countries also consider risks related to **secondary effects** of climate change and mostly the impact on **health**.*
- ***Key economic sectors** that are likely to be impacted by climate change are also highlighted.*

Almost all countries (except North Macedonia), reply to the question on which of the above-mentioned key risks are directly linked to climate change effects. Two Member States (Czechia and Greece) do not dedicate specific sections of their reports to climate-related risks but instead refer to climate-related risks throughout them. Most countries(24) refer to their climate change adaptation strategies and plans[45]. However, more than half of countries do not report any information on other climate risk vulnerability assessments and on methods and data sources to identify climate change impacts.

[44] DE, DK, ES, HR, HU, LU, MT, NL, NO, SE.
[45] 17 countries report completely and 7 report partly.

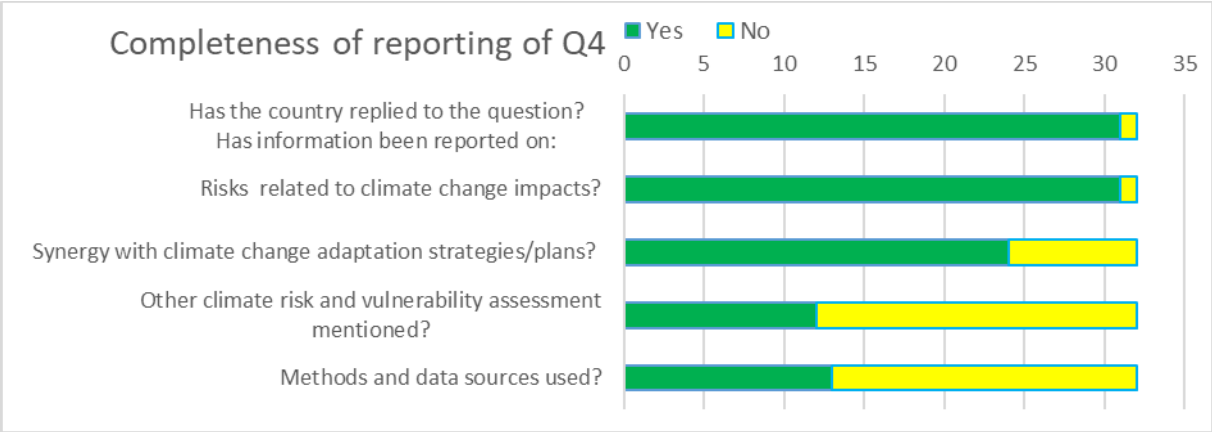


Figure 12. Number of countries that replied to Q4. *Source: 2020 DRM summary reports (Q4).*

4.2.1 Identification of climate change related hazards and impacts

Many climate-related hazards are of key concern to Member States and Participating States . **Floods, drought, and wildfires** are the most important climate-related hazards, followed by heavy precipitation, storms, heatwaves, epidemics and landslides.

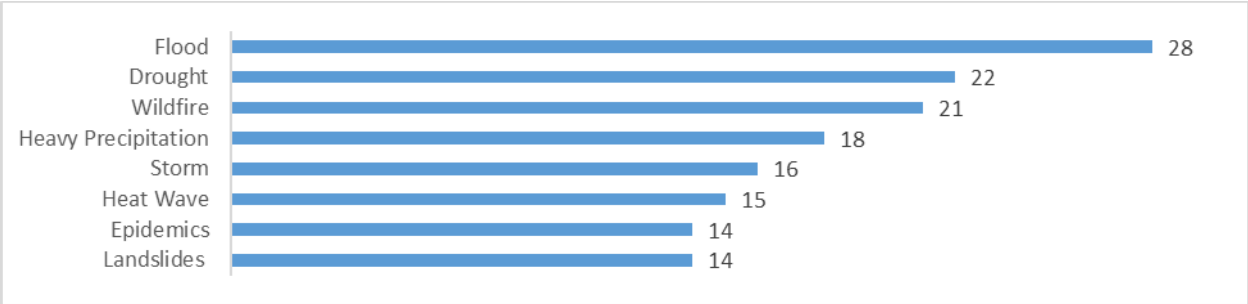


Figure 13. Climate-related hazards as identified by countries. *Source : 2020 DRM summary reports (Q4).*

Countries mainly identify **acute hazards (with relative short duration),** such as floods, wildfires, droughts. These are fast-on-set, time-limited, hazards that may require urgent response, rather than **chronic hazards (of long duration),** such as ocean acidification and sea level rise, that are permanent, long-term or slow-onset hazards. Chronic hazards will increase disaster risk exposure over time by increasing vulnerabilities and changing conditions. All countries (with the exceptions of Finland, and North Macedonia), for example, brought up acute water-related hazards (flood, drought, heavy precipitation), while only five countries[46] identify chronic **water-related hazards** (ocean acidification and sea level rise)[47]. In view of the need for a long-term perspective in identifying climate change-related impacts and related disaster risks, chronic changes such as sea level rise and coastal erosion are very important.

[46] ES, LT, MT, NL and NO.

[47] Classification of 'climate-related hazards' as set out in Implementing (EU) Regulation 2020/1208 pursuant to Regulation (EU) 2018/1999 (Governance of the Energy Union and Climate Action). OJ L278, 26.8.2020, p.1.

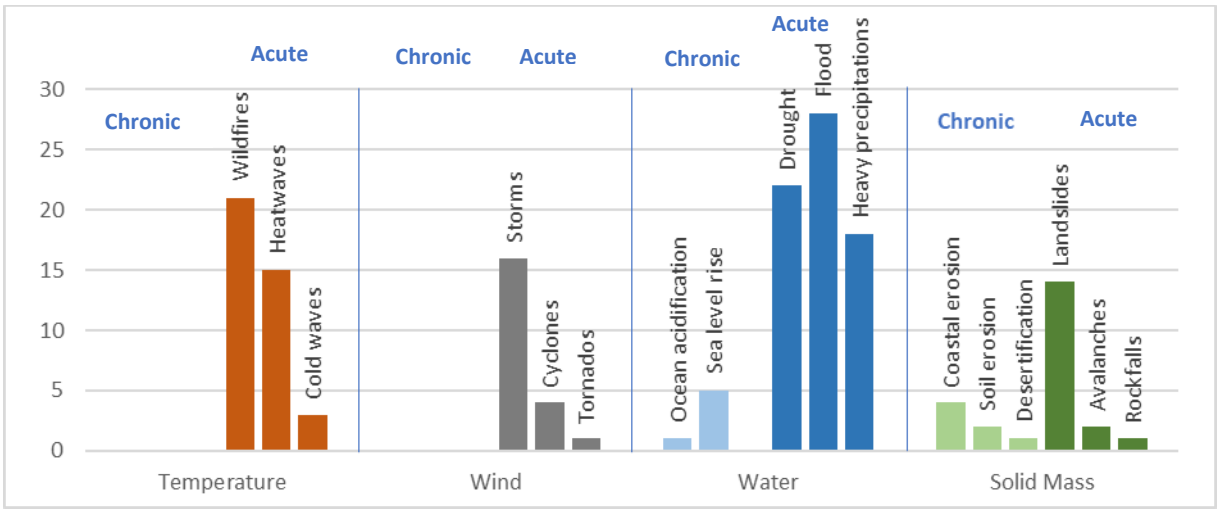


***Figure 14. Climate-related hazards as identified by countries**, divided into two types of risks that are either chronic (slow onset/permanent) or acute (rapid onset/time limited events). Source: 2020 DRM summary reports.*

When identifying the impacts of climate change, countries also go beyond the direct climate-related hazards and consider risks related to **secondary effects of climate change**. These secondary impacts of climate change can go far beyond the immediate hazards and depend on the *vulnerability* of ecosystems, infrastructures, or economic systems, in addition to other factors such as *exposure* of the subjects impacted by the hazards.

The most reported secondary impact is **impact on health**. Half of the countries[48] identified health-related risks, particularly epidemic/pandemic and water- and food-borne diseases, vector-borne disease and antibiotic resistance, as well as generic health and well-being. Several countries also mentioned animal diseases[49] and plant diseases[50]. Many (12)[51] report supply chain related impacts, particularly on food, drinking water, energy (oil, gas and electricity), communication networks, logistics, and critical infrastructure disruption. Other climate-related secondary effects include: impacts on critical and technological infrastructure; climate-induced migration; exotic and invasive species; risks to biodiversity; and impacts on cultural heritage. Countries also go beyond the key risks and specific secondary impacts and highlight **key economic sectors** that are likely to be impacted by climate change[52]. These economic sectors

[48] BG, CY, DK, EE, FR, HR, HU, LT, MT, NL, PL, RO, SE, SK.
[49] DK, EE, LT, LV, NL, PL, SE, SK.
[50] FI, LT, LV, NL, PL, SE, SK.
[51] AT, BE, CY, EE, EL, FI, IE, LV, PL, RS, SE, SK.
[52] Only a few reports provide further substantial information on the effects, but the 2022 IPCC 'WGII Sixth Assessment Report' provides insights on the expected effects of the identified sectors.

include agriculture[53], energy[54], forestry and livestock[55], transport[56], services[57], water; health care[58], fisheries[59] and industry and business[60].

4.2.2 Use of national climate change assessments for risk identification

When identifying the key risks related to climate change, Member States and Participating States are asked to take into consideration existing change adaptation strategies and/or plans, to ensure consistency of the assessments. Most countries (26)[61] report of **synergies with climate risk assessments** and **took their climate change adaptation strategies/plans into account** for the climate-related risks identification. Half of the countries (14) took into account other climate risk and vulnerability assessments.[62] A few countries (Germany, Greece, Italy, Poland) have a **risk-specific approach** in their national climate change assessments primarily addressing droughts and water scarcity (Germany, Poland), heatwaves (Greece) and floods (Italy). Other countries refer to regional and local risk assessments (Finland, Sweden), to impact assessments - tools used for risk identification (Lithuania, Sweden), and to sector-specific adaptation plans such as for agriculture (Netherlands).

When describing the methods, models and data used to assess the **probability and impacts of different climate risks,** countries refer to communications and reports under the United Nations (UN) Framework Convention on Climate Change (UNFCCC), the analysis of climate change scenarios, as well as more detailed countries information[63] and the latest Intergovernmental Panel on Climate Change (IPPC) reports (France, Denmark, Malta)[64].

4.3 Risk identification methods and risk analysis (Q5)

Question 5*: 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.*

Key findings (Q5)*:*

- *Most Member States and Participating States report information on the **scale of levels of risk probability** and **impacts** (qualitatively and /or semi quantitatively) of the key risks identified.*

[53] CY, LV, ME, MT.
[54] CY, FR, ME, TR. FR explicitly refers to disruption in the nuclear sector.
[55] CY, LV, ME, MT.
[56] CY, FR, ME. FR mentions that railway and road infrastructures may be affected.
[57] CY, LV. MT refers to tourism as an impacted sector because of the weather phenomena that can damage areas usually visited by tourists (coastal erosion of beaches).
[58] LV, ME.
[59] CY, MT.
[60] CY.
[61] All except AT, CY, LT, MK, TR.
[62] See also Q14 for further analysis synergies.
[63] BE, DE, FI, FR, HU, IE, IT, LT, PT, SE.
[64] For instance, the 'IPCC, 2018 Special report: Global warming of 1.5°C'.

- *Most countries assessed the **impacts** of each risk in terms of significant adverse impacts on one or more of the four categories of impacts (human, economic, environmental/cultural and political/social).*
- *About half of the countries provide information on **data and methods** used to identify risks.*
- *Only about half of the countries assess the impact of risks coming from or affecting neighbouring countries. Methodology and criteria for analysing Cascading effects and multi-hazard effects are not referred to.*

Most Member States and Participating States (29) reply to the question on probability and impact of the key risks. Many countries (25) report information on the levels of risk probability and impact, and over two-thirds (24) provide a single matrix for multiple risks. Two-thirds of countries also refer to significant adverse consequences of one or more of the main impacts (human, economic, environmental/cultural and political/social), while more than half include a description on the methods, models and techniques used to assess probability and impacts or different risks or risk scenarios. Only 9 countries report on risk maps in this context.

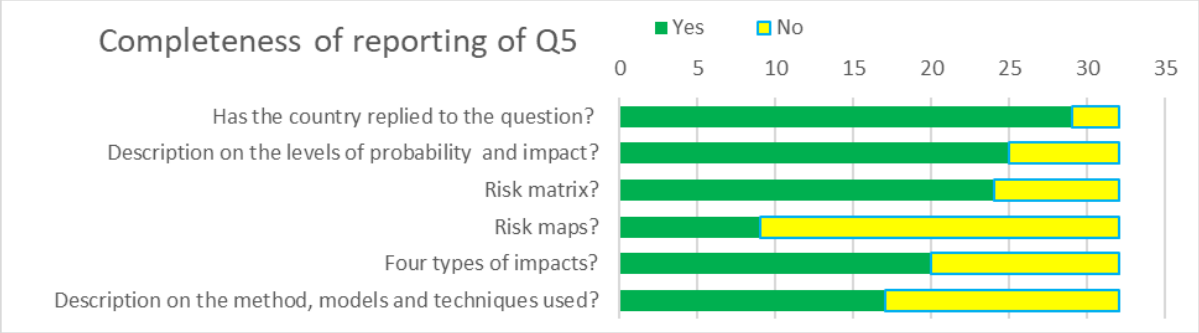


Figure 15. Number of countries that replied to Q5. *Source: 2020 DRM summary reports (Q5).*

4.3.1 Methods for identification and analysis of key risks

Member States and Participating States describe a variety of approaches to identify key risks at national and sub-national level. These are based on the reviews of geological, historical and statistical data, expert opinions, national and international statistics, maps, forecasting models, risk assessment models and empirical experiences. Countries[65] mainly **collect qualitative impact data** (e.g. through expert opinions, intelligence information, inductive reasoning techniques and others). About a quarter of the countries refer to **qualitative or semi-qualitative assessments** of risk, while just under a third refer to **quantitative** risk assessments.

About one third of countries (11)[66] develop a **single-risk scenario analysis** (e.g. floods, earthquake, accident in nuclear power) to identify the key risks at national level. Only a few refer to climate change scenarios. About a third of countries (11)[67] take a **multi risk approach** and consider the **cascading effects** of disasters. Only a few (4)[68] provided data about the temporal horizon of the scenarios building. **At the risk identification stage**, several countries[69]

[65] AT, DK, FI, NL, NO, PL, RO.
[66] AT, DE, DK, EE, ES, HU, IE, MT, NO, SI, TR.
[67] DE, DK, EE, EL, HU, HR, FI, ME, MK, MT, NL.
[68] EL, EE, SI, SK.
[69] AT, CZ, DE, DK, EE, EL, ES, HU, IE, ES, HU ; IE ; HU IE, MT, NL, NO, PL, SI, SK.

followed the **probabilistic risk analysis** to define the key risks at national level by considering all possible scenarios, their likelihood, and associated impacts. In the risk analysis process, 24 countries[70] displayed and determined the level of risk (probability and impact) in a **single- and/or multi-risk matrix.** Only about a quarter of countries reported how they took uncertainty[71] and the precautionary principle[72] into account in their risk assessments.

Most countries (26)[73] provide some information on the qualitative or quantitative assessment of **cross-border risks** (these were identified as risks that may have significant adverse cross-border impacts). Yet only half (16)[74] assess significant impacts coming from or affecting a neighbouring country or countries, such as forest fires and floods (Spain), the severe consequences of a major earthquake (Türkiye) and nuclear accidents[75]. However, no country state whether a multi-hazard approach is applied or whether scenarios are being developed on the occurrence of cross-border hazards. No countries reports on the cascading impacts of cross-border disasters in their risk assessment process.

Limited information is provided on the **assessment of high impact low probability (HILP) risks**, including criteria set for identifying them. Five countries[76] identify **HILP risks** based on a risk assessment methodology with the use of a risk matrix and some criteria for impact and probability. Information on the approach for assessing **emerging risks** is also limited. A few countries (3) refer to assessments of key underlying drivers like climate change and the increasingly severe impacts of increased natural disasters.

4.3.2 Estimation of the human, economic, environmental, social/political impacts of risks (Q5)

When assessing the impacts of risks, most Member States and Participating States (17)[77] perform a **semi-quantitative analysis** to determine the levels of the four respective criteria impacts: human; economic; environmental; social/political. The majority of countries carry out a single rather than multi-criteria analysis to define the level of impacts. A total of 5 countries[78] identify the level of impact for each single risk separately (e.g. floods, forest fires, earthquake) without taking into consideration cascading or secondary effects of risks.

28 countries[79] describe the probability and impacts (qualitatively and /or semi quantitatively) of the key risks identified, including key cross-border risks, and key **high impact low probability (**HILP) risks at national or/and sub-national level.

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[70] AT, BE, BG, CY, CZ, DE, EE, EL, ES, FI, HU, HR, IE, LT, LV, ME, MT, NO, PL, PT, RO, RS, SI, SK, TR.
[71] AT, BE, DK, EE, ES, LV, PL, NO, SI, ME.
[72] AT, BE, DK, ME, NL, NO, PL.
[73] All except: LT, PL, RS, SI, MK.
[74] BE, BG, CZ, DE, DK, EE, ES, FI, FR, HU, LU, NO, NL, PT, RS, TR.
[75] DE, DK, EE, ES, FR, HU, LU, NO, NL, PT, RS.
[76] CZ, DE, DK, HU, SI.
[77] AT, BE, CZ, EL, ES, FR, HR, IE, LT, MT, NO, PL, PT, RO, SE, SI.
[78] DE, EL, ES, SI, TR.
[79] AT, BE, BG, CY, CZ, DK, EE, EL, ES, FI, HR, HU, IE, LT, LU, LV, ME, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, TR.

The human impact is measured semi quantitatively by 15 countries [80] in terms of the number of people affected (e.g., number of deaths, number of injured people, or number of other health-related problems). **As for the economic impact,** 14 countries[81] report they measure impacts in monetary terms. Countries built estimates and scenarios of potential financial losses (Belgium, Ireland), relative increase in unemployment (Belgium) and/or a decrease in the number of active companies (Belgium). **Environmental impacts** are classified in qualitative terms by 16 countries[82]. Countries mostly describe the environmental impacts related to natural or climate-related risks, such as forest fires, floods, droughts etc, and their impacts on the vegetation, water, air, soil. **Social/political impacts** are assessed mostly qualitatively by 17 countries[83]. The common criterion used by most countries to assess this category, was the disruption of one or more vital societal services and infrastructure (e.g. energy, food supply and water supply disruption; or/and hospitals and school disruptions) in relation to the duration and the number of people who directly suffer the negative consequences.

[80] BE, EL, ES, HR, IE, LT, MT, NO, NL, PL, PT, RO, SE, SI, TR.
[81] AT, BE, DE, EL, ES, FR, HR, IE, LT, MT, NL, NO, RO, SE, SI, TR.
[82] AT, BE, BG, DE, DK, EE, EL, ES, FR, IE, LT, NO, PL, PT, SE, SI.
[83] AT, BE, BG, CZ, EL, HR, IE, LT, LU, MT, NO, NL, PL, PT, RO, SE, TR.

4.4 Risk mapping (Q6)

***Question 6**: 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.*

***Key findings (Q6)**:*

- *The overwhelming majority of Member States and Participating States report some information on **risk mapping**, focusing mostly on **physical/natural hazards** such as floods, wildfire risk, areas at high seismic risk as well as areas located close to industrial installation or nuclear power plants.*
- ***Risk mapping** remains a national competence and mapping practices vary by risk and across countries.*
- *Less than a quarter of countries report links to **publicly available maps**, with floods being the risk with the most publicly available maps.*

The overwhelming majority of Member States and Participating States (25) report information on risk mapping. More than half of the countries reports include disaster risk maps, however only around one third of the countries report information on the public availability of these maps and provide, in some cases, links to such maps. One third of the countries include descriptions and/or information on the risk maps. No country includes information of disaster loss maps and only 7 include information on the spatial resolution of maps.

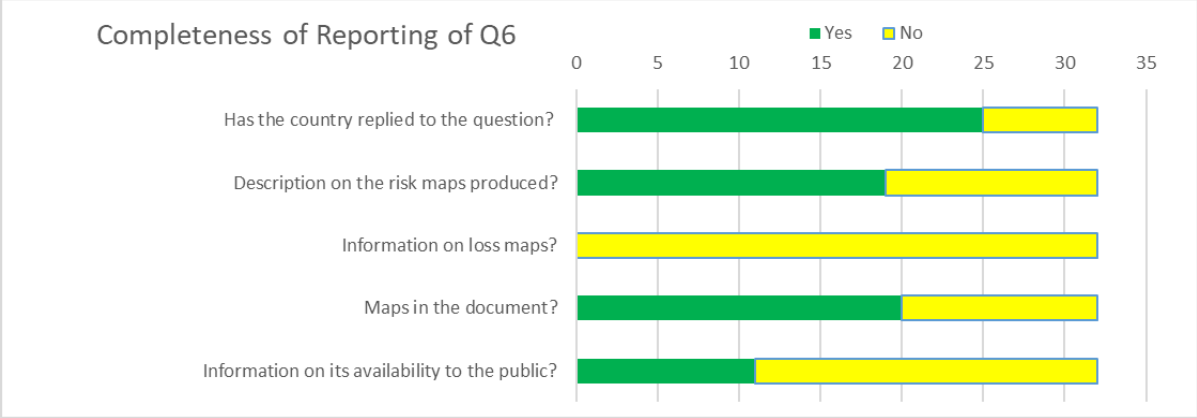


***Figure 16. Number of countries that replied to Q6.** Source: 2020 DRM summary reports.*

4.4.1 Risk maps use, methodology and coverage

Member States and Participating States report that they **use maps** for general disaster risk management (DRM) policies, such as prevention, preparedness, population risk awareness and training. Countries also use them in planning as they help prioritise prevention and preparedness measures. Limited information is made available on **methodological aspects** of risk mapping.

Countries report a wide range of **maps covering various risks**. Risk maps report mostly focus on physical/natural hazards such as flood, wildfires and seismic risk, but maps of hazards for areas located close to industrial installation or nuclear power plants are also common. Two-

thirds of countries provide flood risk maps. However, given that such maps are obligatory for all EU countries under EU legislation[84], this might be an example of under-reporting.

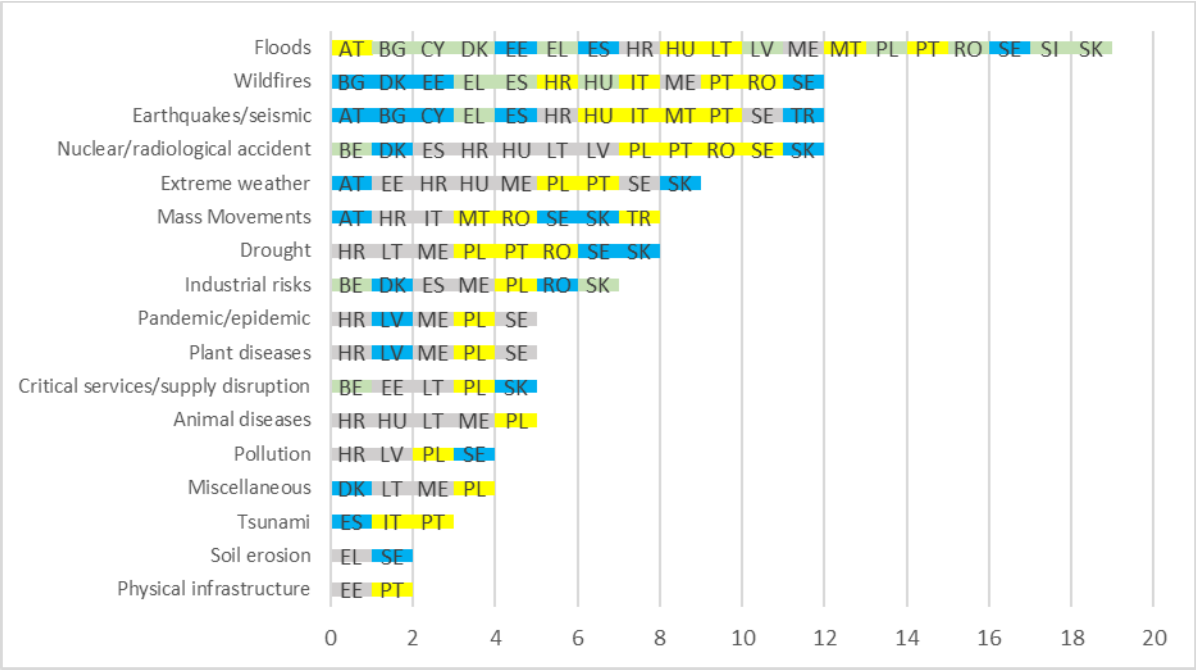


Figure 17. Risks for which countries have reported that risk maps are available*. Green: risk map; Yellow: risk and hazard map; Blue: hazard map; Grey: unspecified/other map, as specified by the respective countries. Source: 2020 DRM summary reports.*

The nature of some societal risks (e.g. terrorism, cyber threats) means that they cannot be represented in a map. For some security related threats, such as those related to critical infrastructure, maps may contain details and strategic information countries cannot disclosed by MS and are therefore not publicly available.

Only less than a quarter of the countries **(**12)[85] provided links to **publicly available maps**. Flooding is the risk with the most publicly available maps, followed by critical infrastructure disruption and extreme weather. Portugal is the only country reporting a link to a map website covering all the risks identified in the DRM summary reports, followed by Latvia and Slovakia who include a high number of risks in their public maps. No information is provided on cross-border risk mapping practices.

Publicly available disaster risk maps as reported by countries	
AT	Multi-hazard, Earthquake, Mass Movements
BG	Floods, Wildfires
CY	Floods
DK	Climate risks, Wildfires
EE	Industrial accidents*, Wildfires, Extreme Weather*, Critical infrastructure disruption*, Floods*
HU	Animal and plant diseases
LT	Extreme Weather, Critical Infrastructure disruption

[84] Directive 2007/60/EC on the assessment and management of flood risks. OJ L288, 6.11.2007, p.27.
[85] AT, BG, CY, DK, EE, HU, LT, LV, PT, SE, SK, TR.

LV	Pollution, Human Health risks, Animal and plant diseases*, Nuclear and radiological risks, Critical infrastructure disruption, Floods*
PT	Tsunamis, Earthquakes, Drought, Nuclear and radiological risks, Wildfires, Extreme weather, Critical infrastructure disruption, Floods
SE	Animal and plant diseases, Mass movements*, Wildfires*, Floods*
SK	Industrial accidents, Drought, Mass movements, Nuclear and radiological risks, Extreme weather*, Critical infrastructure disruption, Flood
TR	Earthquake

Table 2. Publicly available maps as reported by countries. *The asterisks indicate risks for which countries provided more than one link. Source: 2020 DRM summary reports (Q6).*

4.5 Monitoring and reviewing of risk assessment (Q7)

Question 7*: Outline the system in place for monitoring and reviewing risk assessment so as to factor in new developments.*

Key findings (Q7)*:*

- *The most common frequency of review as stated by Member States and Participating States is to review risk assessments **periodically/continuously** or **every 3 years.** Reviews can also be conducted on an ad hoc basis, when deemed necessary.*
- *The overwhelming majority of DRM summary reports have been reviewed and updated since the previous reporting deadline of 2018.*
- *Countries highlight the need for **sector and risk studies and analyses** in order to grasp new developments as well as the need to monitor the different hazards.*

Almost all the Member States and Participating States (28)[86] indicated they had a system in place for monitoring and reviewing risk assessment as to factor in new developments. Almost all (27) of those countries include a description of the system in place. More than half of the countries also provide information on the reason for the regular review and monitoring of risks.

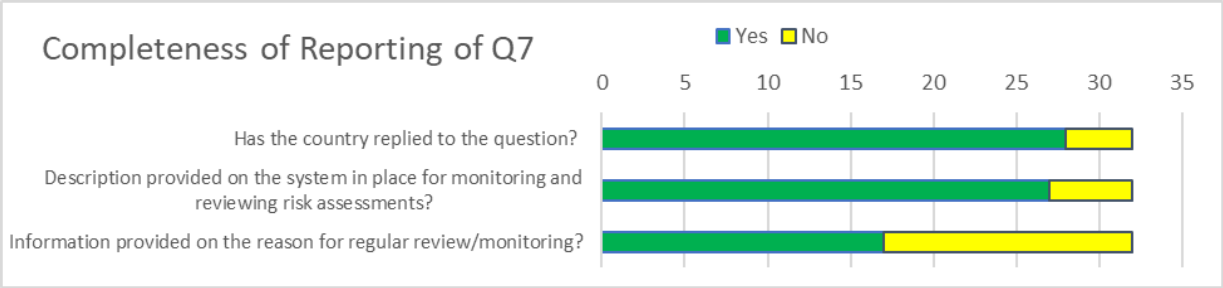


Figure 18. Number of countries that replied to Q7. *Source: 2020 DRM summary reports (Q7).*

4.5.1 Frequency of, and reasons for, review of risk assessments

Regarding the **frequency** of the risk assessment reviews and updates, the most commonly reported frequencies of review are periodically/continuously (7)[87] or every 3 years (6)[88].

[86] All except EL, LT, MT, SK, TR.
[87] AT, BE, CZ, EE, HU, IT SK.
[88] DK, EE, IE, MT, NL, RS.

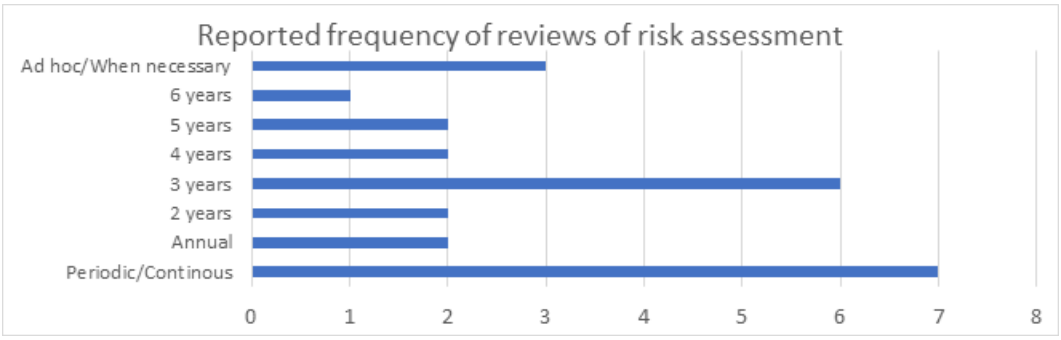


Figure 19. ***Regularity of review or update of risk assessment*** *as reported by countries. Source: 2020 DRM summary reports (Q1 and Q7).*

Reviews are also conducted at a different annual frequency or *ad hoc*, when deemed necessary[89], and the relevant updates to the existing risk assessments can be incorporated as soon as possible. A shorter review period can be triggered, for example, to integrate new available knowledge or to fulfil legal requirements (as reported by Portugal).

Some 28 Member States and Participating States[90] refer to legal requirements to review risk assessments which may differ for different types of risks. In some countries[91], these updates are also linked to the frequency of the updates of the civil protection plan (Spain, Latvia, Portugal). Some countries also refer to the related updates of subnational reports at the same frequency as national reports (Bulgaria), or more frequently (Sweden).

The overwhelming majority of disaster risk management (DRM) summary reports have been reviewed and updated since the previous reporting deadline of 2018. In case the risks had not changed over time, the previous reports and identified risks can still be considered valid and up to date, which some countries opted to apply.[92]

Among the **reasons for reviews**, countries generally refer to the need to analyse the identified risks in greater depth and to adapt to a changing risk landscape. The recurrent reason for risk assessments reviews are indeed the need for deep analysis and identification of their consequences, dependencies and cascading effects for certain hazards, and that there is a necessity to address new developments and threats.

Countries also refer to the need for **sector and risk studies and analyses.** These are needed to grasp new developments and to monitor the different hazards (monitoring the situation, recording critical points and the emergence of new factors which can cause or accelerate a particular danger).

[89] CY, ME, PT.
[90] AT, BE, BG, CY, CZ, DE, EE, EL, ES, FI, HR, HU, IE, IT, LU, LV, ME, MK, MT, NO, PL, PT, RO, RS, SE, SI, SK, TR.
[91] ES, LV, PT.
[92] For this reporting deadline Malta referred to previously submitted DRM summary reports, and Slovenia partly to previous report while focussing the new report on one risk (floods).

5. GOVERNANCE OF DISASTER RISK MANAGEMENT (ARTICLE 6(1)(A), (B) AND (D))

Disaster risk management governance related issues are reflected in different parts of the reporting guidelines. This chapter covers :

i) the legislative, procedural, and institutional aspects of the **risk assessment process**[93] (Q1), including the involvement of public and private stakeholders in this process (Q2 and Q11);
ii) the legislative and procedural aspects of **risk management capability assessment**[94] (Q9);
iii) further information on **competent authorities** (Q10) and **relevant stakeholders** (Q11); and,
iv) procedures and **measures** at national, sub-national, and local level.

The UCPM decision and the reporting guidelines do not require reporting on disaster risk management planning. However, important information on **disaster risk management governance** is found in the reports on risk assessment (Article 6(1)(a)) and on risk management capability (Article 6(1)(b)), that is reported in accordance with Article 6(1)(d). This is further analysed in this chapter.

***Key findings (Q1, 2, 9, 10, 11, 12)**:*

- *On the **legislative framework for risk assessments**, Member States and Participating States mostly refer to a main legal instrument. This can be **a central legal act at the national level**, often **complemented by other laws** as well as different types of **soft laws and policies**.*
- *For most countries, it appears that their **legal framework for risk assessment also covers disaster risk management capabilities (RMC)** in a broader sense.*
- *The **main competent authority for risk assessments** are primarily different ministries and sub-national authorities, carrying out a **coordinating role**. Other disaster risk management institutions, private sector actors, civil society, academia and research institutions are also involved in the assessment process.*
- *The **main competent authorities for risk management** are different ministries at the national level, particularly ministries of internal affairs. About half of the countries also highlight the key role of **local and regional authorities**.*
- *Countries provide clear information on **vertical coordination (national and sub-national)** for risk assessment, led by different coordinating authorities at the national level. Fewer report on vertical coordination for risk management, referring mostly to distinct cooperation in relation to the different DRM phases (prevention, preparedness, response and risk management planning).*
- *On **horizontal coordination (cross sectoral, multi hazard)** for risk management, countries mostly report that public authorities carry out a coordinating role, also involving private and other public stakeholders. Countries report on various horizontal coordination mechanisms for risk management for certain risks, including technical working groups, platforms and forums.*

[93] 'Risk assessment' means 'the overall cross-sectoral process of risk identification, risk analysis, and risk evaluation undertaken at national or appropriate sub-national level'*(UCPM Article 4(7))*.

[94] Risk management capability assessment' means "the ability of a Member State or its regions to reduce, adapt to or mitigate risks (impacts and likelihood of a disaster), identified in its risk assessments to levels that are acceptable in that Member State. Risk management capability is assessed in terms of the technical, financial and administrative capacity to carry out adequate: (a) risk assessments; (b) risk management planning for prevention and preparedness; and (c) risk prevention and preparedness measures *(UCPM Article 4(8))*.

- *While most countries provide clear information on the **frequency** of and reasons for **reviews** of their risk assessments, less information is reported on review frequencies and reasons in relation to the subsequent stages of DRM.*
- *There is a lack of reported **comprehensive disaster risk management strategies**. These should include a multi-risk and multi-hazard perspective and should cover all four DRM phases (risk assessment, prevention, preparedness, response and, in some cases, recovery). In the 2020 reporting cycling, the information on risk management planning is mostly scattered, **highlighting the need for the countries to develop a comprehensive plan for disaster risk management**.*

***Question 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.*

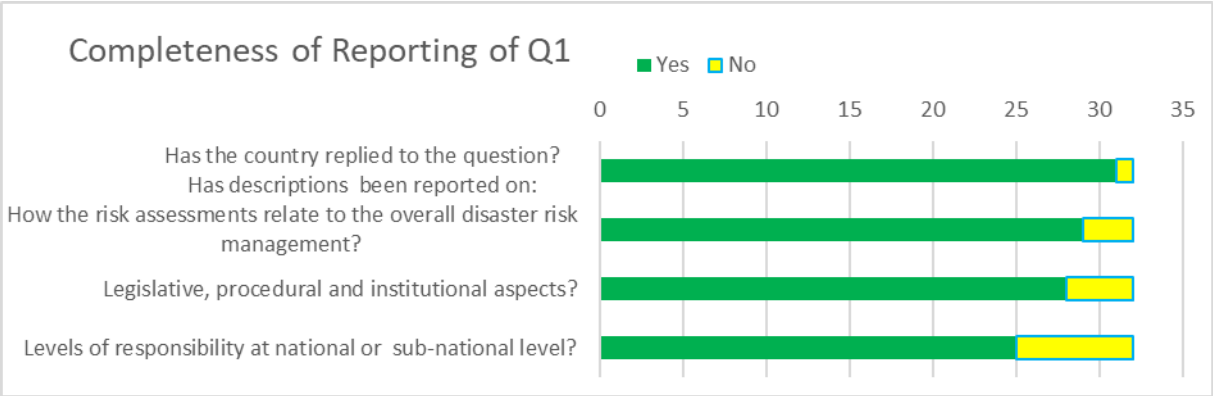


***Figure 20. Number of countries that replied to Q1**. Source: 2020 DRM summary reports.*

***Question 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.*

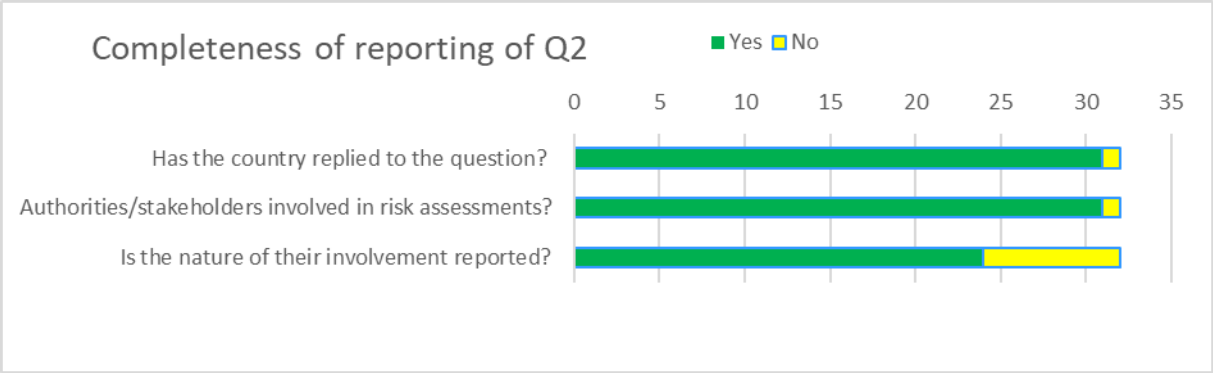


***Figure 21. Number of countries that replied to Q2.** Source: 2020 DRM summary reports.*

***Question 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.*

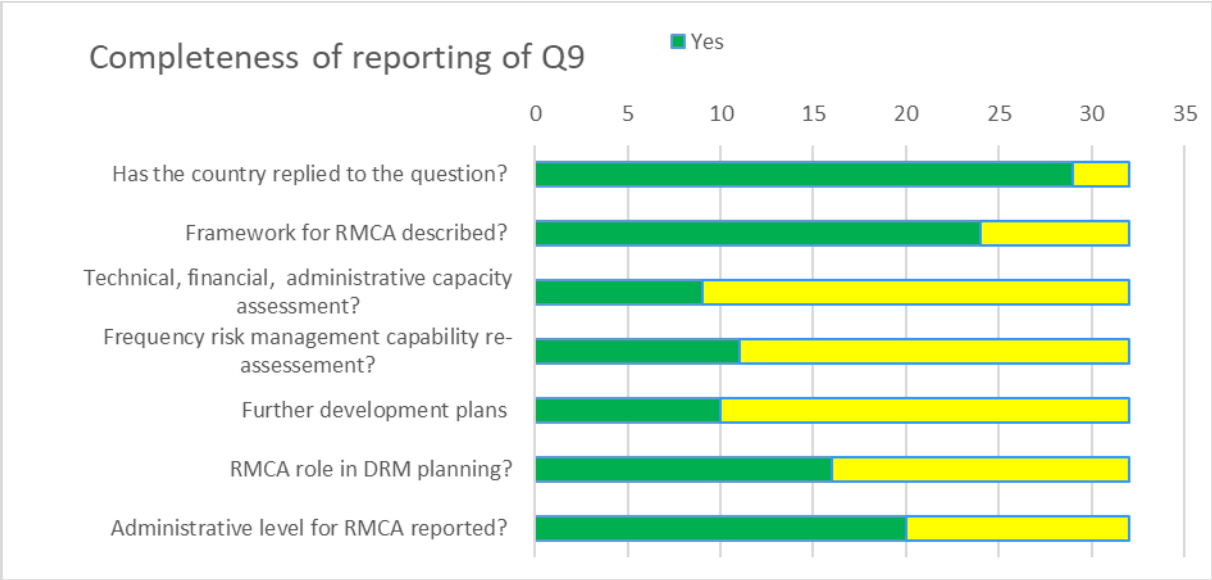


Figure 22. Number of countries that replied to Q9*. Source: 2020 DRM summary reports.*

Question 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.*

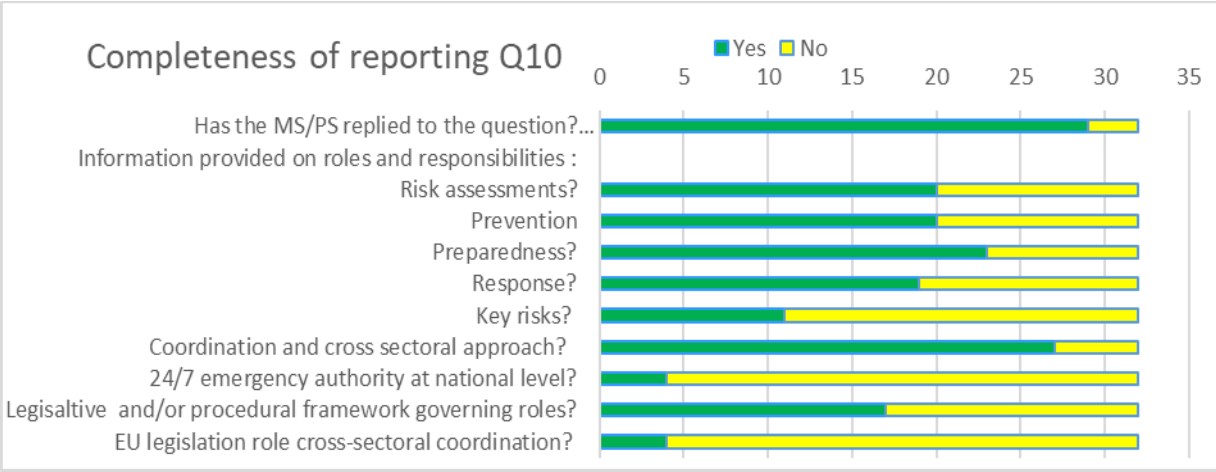


Figure 23. Number of countries that replied to Q10*. Source: 2020 DRM summary reports.*

Question 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.*

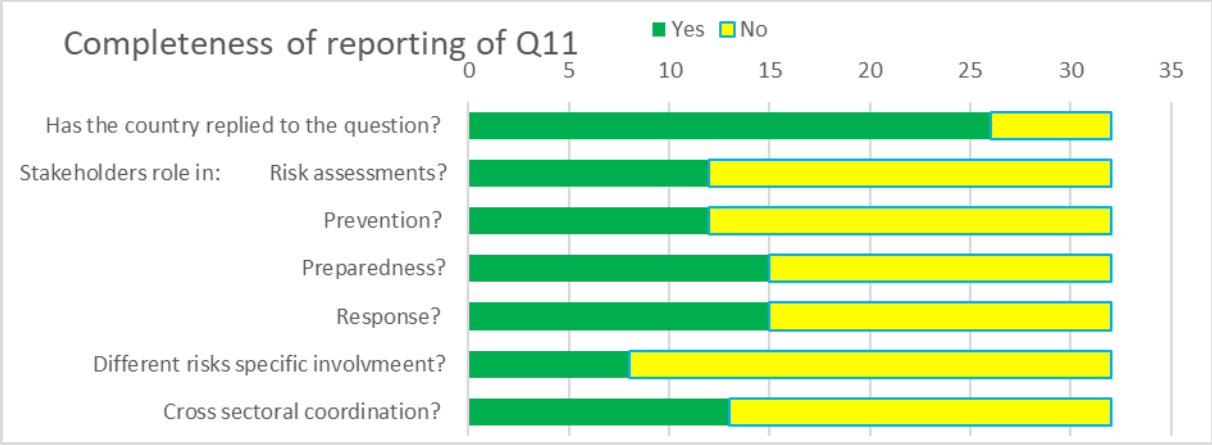


Figure 24. Number of countries that replied to Q11. *Source: 2020 DRM summary reports (Q11).*

Question 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.*

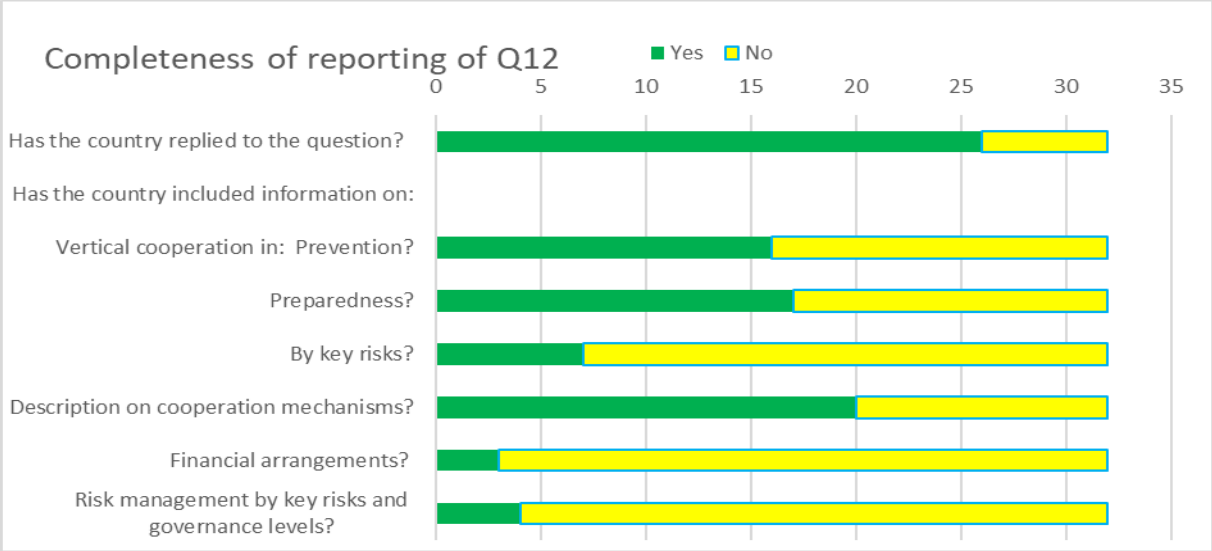


Figure 25. Number of countries that replied to Q12. *Source: 2020 DRM summary reports (Q12).*

A large share of countries report information on the legislative, procedural, and institutional aspects of risk assessments and risk management capability assessments. However, the level of detail provided on risk management capability was less extensive.

5.1 Key findings on the legislative, procedural, and institutional aspects of disaster risk management governance (Q1, Q2, Q9, Q10, Q11, Q12)

5.1.1 Legislative framework of risk assessments (Q1) and risk management capability assessment (Q9)

With regards to the legislative framework of risk assessments, most Member States and Participating States (25) [95] refer to a main legal instrument being a **central legal act at the national level,** such as a framework law/act on civil protection, disaster protection, or population protection. One country (Austria) refers to their constitution setting out the responsibility for civil protection, which delegates responsibility to subnational level. Some 13 countries[96] also report different types of **soft law and policies** as the basis for the risk assessment process or as complementing the legal framework, particularly on risk reduction or risk management (Cyprus, Norway), as well as on national security (Netherlands).

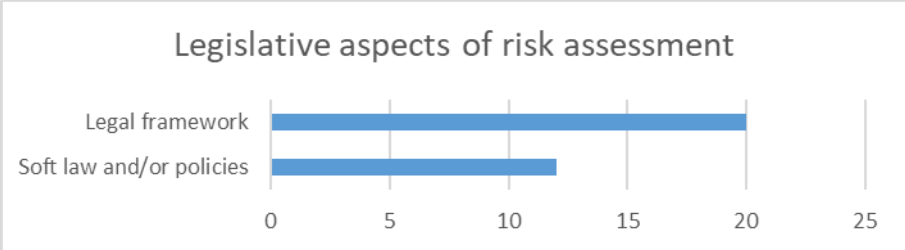


Figure 26. Overview of the main legal or other instruments in place for risk assessment *as reported by countries. Source: 2020 DRM summary reports.*

For most countries, it appears that, even if not always explicitly stated, the legal framework for **risk assessment and overall risk management capability assessments appears to be the same**, meaning that they mostly cover disaster risk management in a broader sense. Many countries (23)[97] also report that their main **legal acts are complemented by other laws** addressing either a wider range of disaster risk or risk management aspects. For example, complementary laws can cover :

- specific risks (water, floods, wildfire, earthquakes, cyberthreats, etc);
- risk management sectors or measures (such as spatial planning, climate change, economic affairs, supply disruptions, food safety, cultural heritage, etc);
- different phases of the disaster risk management (DRM) cycle (risk assessments emergency management, preparedness of the population risk management planning, prevention, response and recovery);
- legislation governing local or regional authorities, or obligations under other EU laws (floods, critical infrastructure, industrial accidents, water, nuclear safety).

[95] BE, BG, CZ, DE, DK, EE, ES, FI, FR, HR, HU, IT, LT, LU, LV, MK, MT, PL, PT, RO, RS, SE, SI, SK, TR.
[96] CY, CZ, DE, DK, EL, IE, IT, LT, ME, MT, NL, NO, RS.
[97] AT, BE, BG, CZ, DE, DK, EL, ES, FI, FR, HR, HU, IT, LT, ME, NL, NO, PL, RO, RS, SE, SK, TR.

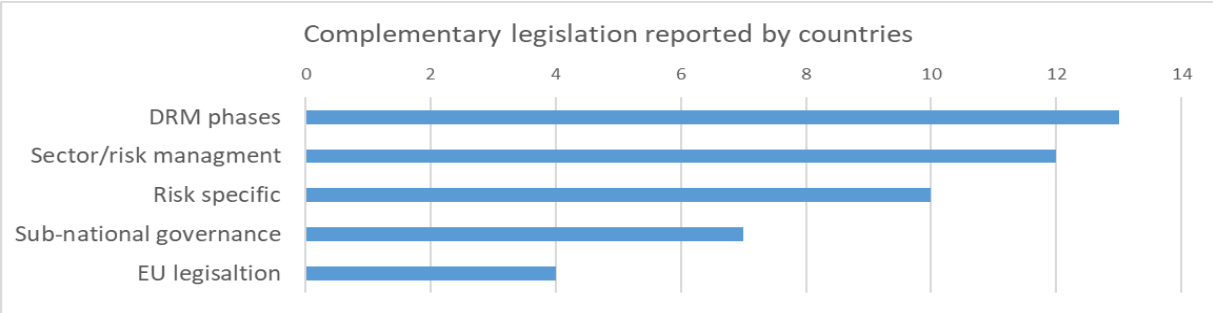


***Figure 27. Complementary legislation, complementing the main legal acts** as reported by countries. Source: 2020 DRM summary reports (Q1 and Q9).*

The range in form of relevant national legislation and different types of risk assessment and risk management capabilities (RMC) confirms the complexity of disaster risk management and highlights that whole-of-society resilience requires **coherent and effective cross-sectoral coordination**. Several pieces of EU legislation are viewed as being of particular relevance for cross-sectoral cooperation in risk management, particularly the 'Network and Information Systems' (NIS) Directive (Finland, Ireland), EU legislation on animal and plant diseases (again Finland, Ireland), the Critical infrastructure directive (Malta), the EU 'Floods' Directive (Ireland), and the anti-money laundering legislation (Netherlands).

5.1.2 Authorities responsible for risk assessment (Q1, Q2, Q10)

All Member States and Participating States that reply to the governance questions report that national level **public sector authorities** coordinate risk assessments, and that other related authorities and stakeholders are also involved in risk assessments A clear majority of those reporting also provide information on the responsible authorities and involved stakeholders for other stages of the disaster risk management process, particularly preparedness, prevention, and risk management planning.

Countries primarily report that the **main competent authority for risk assessments** are different ministries[98]. Most reporting countries[99] mention ministries of internal affairs as the main responsible authority. Others refer to ministries of justice[100] or defence[101]. Some refer to

[98] AT, BG, CY, CZ, DE, EE, ES, FI, HR, HU, IE, IT, LU, LV, ME, MT, NL, NO, PL, RO, RS, SI, SK, TR.
[99] AT, CZ, DE, EE, ES, FI, LT, LU, LV, ME, MT, RS, SK.
[100] NL, NO, SE.
[101] CY, DK, IE, SI.

one or more other ministries being responsible for risk assessments[102], for instance ministries of environment (Cyprus, Portugal, Slovenia).

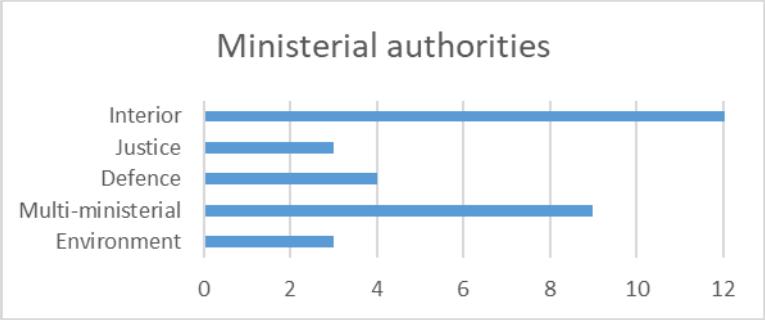


Figure 28. Reported ministerial authorities responsible for risk assessment*. Source: 2020 DRM summary reports (Q1 and Q2).*

A total of 22 countries reported that **authorities at other levels** are also responsible for risk assessments, particularly different types of disaster risk management (DRM) related agencies or other bodies that are not government ministries[103]. Civil protection authorities are in several cases mentioned as the competent authorities for risk assessments. In some cases, these are the civil protection directorates general of a ministry of interior, while in some cases(Czechia, Germany, Spain, Latvia) they are separate agencies.

Several countries include information on **other disaster risk management institutions** as responsible for the risk assessment. In particularly these were emergency management bodies (10)[104], civil protection authorities (8)[105], and fire and rescue services (5)[106].

Some 18 countries[107] mention **sub-national authorities** as being responsible for the risk assessment.

A wide range of **other public authorities** - ministries, departments or agencies - are often involved in the risk assessment process, to ensure that risk-specific expertise in included. Some countries (15)[108] refer to **public agencies** with a connection to specific sectors or risks, as illustrated in the graph below.

[102] AT, CY, FI, HR, HU, LT, PT, RO, SI.
[103] AT, BE, BG, DE, EE, DK, EE, EL, ES, FI, FR, HU, IE, LT, LU, LV, MT, NL, NO, RO, RS, SE, SI, SK.
[104] BE, BG, DK, EE, FI, IE, LU, LV, MT, RS.
[105] DE, ES, FR, HR, NO, PT, SE, SI.
[106] CZ, FR, LT, LU, LV.
[107] AT, BE, BG, CZ, DE, EE, ES, FI, FR, T, LU, NO, RS, SE, TR.
[108] AT, BG, CY, CZ, DE, EE, FI, HR, HU, IE, IT, LT, LU, LV, ME, PL, RO, SI, SK, TR.

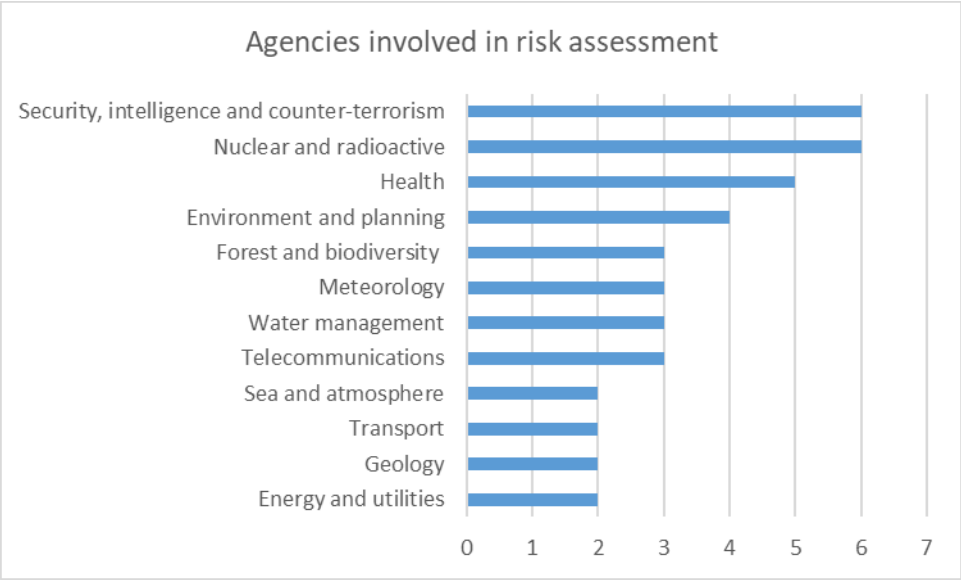


Figure 29. *Number of countries that reported that agencies for sectors other than civil protection were involved in the risk assessment process. Source: 2020 DRM summary reports (Q2).*

In other case only 1 country referred to specific other sectors, particularly: food security, labour, construction, statistics, cultural heritage, and space.

5.1.3 Authorities responsible for prevention, preparedness, and response (Q10)

Member States and Participating States did not systematically provide information on what **authorities are responsible for which disaster risk management stage** (i.e. prevention, preparedness or response). Nevertheless, some general findings can be presented. In some cases, one central ministry and/or other authority has overall responsibility for all stages of risk management. For prevention, however, different risk-specific authorities often play a bigger role. The preparedness and response stages are mostly reported to be either under the responsibility of civil protection agencies at national or sub-national level, often with local or regional authorities playing a key role.

On risk management capability assessment (RMCA), almost half of the countries[109] mention ministries and government departments as being the responsible authorities, particularly ministries of internal affairs[110], followed by environment [111], economy[112], health[113], agriculture[114], defence (Austria, Slovakia), housing (Ireland), and industry (Czechia). These authorities seem to be highly involved for all the Disaster risk management (DRM) phases (prevention, preparedness, and response).

[109] AT, CY, CZ, DE, ES, FI, FR, HR, IE, LT, LV, MT, NO, PT, SE, SI, SK.
[110] ES, FI, FR, HR, LT, LV, MT, SI, SK.
[111] AT, CZ, IE, LV, SI SK.
[112] AT, CZ, HR, LV SK.
[113] AT, CZ, FI, HR, IE, LV, NO, SI, SK.
[114] AT, CZ, FI, HR, IE, LV, SI, SK.

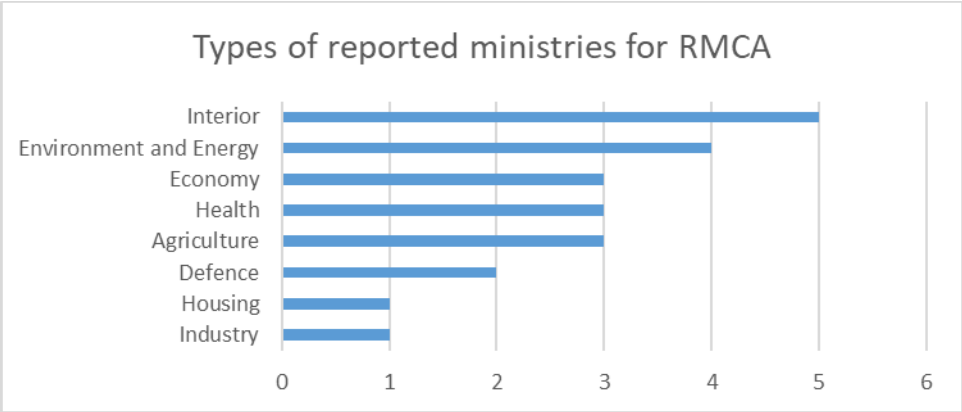


Figure 30. Types of ministries reported by countries for risk management capability assessments (RMCA). *Source: 2020 DRM summary reports (Q10 and Q11).*

Sub-national authorities are highly involved across the DRM cycle (prevention, preparedness, and response). Some 13 countries[115] mention that local authorities and stakeholders are highly involved in each stage of the DRM cycle, including in planning (Bulgaria), coordination (Spain), prevention and management responsibilities (Romania and Sweden), preparedness (Austria and Hungary), and flood risk response (Ireland Czechia). **Other agencies and authorities** are also reported to be involved, often with a more operational role related to prevention or preparedness. Countries[116] refer mainly to authorities responsible for specific sectors/risks.

A total of 5 countries[117] refer to **civil protection authorities** having responsibility for one or more of the DRM phases**, including preparedness and response.** Several countries also refer to **different emergency service bodies** that are involved in specific areas, particularly health services (Belgium, Malta), fire and rescue services,[118] police forces,[119] and security services (Belgium). Only a few countries (5) [120] report information on which authority is responsible for the **24/7 emergency contact point at national level** and on how this is integrated into the overall management structure.

5.1.4 Other stakeholders involved in for risk assessment, prevention, preparedness, and response (Q2, Q10 and Q11)

All reporting Member States and Participating States provide information on **stakeholders in relation to the risk assessment** phase, while only half of the countries include information on stakeholder involvement in assessing risk management capability.

[115] AT, BE, BG, CZ, DE, ES, HU, IE, LV, NO, RO, SE, SK.
[116] BE, BG, CY, CZ, EE, FI, FR, IE, IT, LU, MT, SE, SK.
[117] DE, ES, HR, NO, PT.
[118] CY, CZ, FR, LT, LU, MT.
[119] BE, CY, EE, FR, HU, MT, RO.
[120] FI, HU, IT, PT.

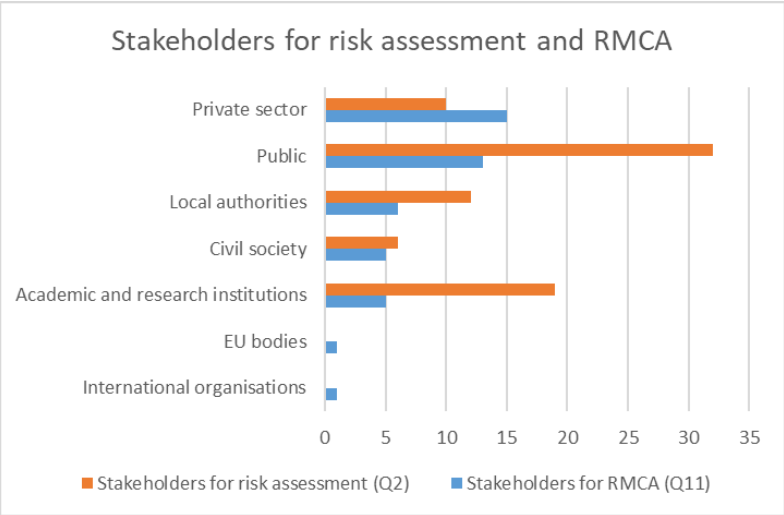


Figure 31. *Number of countries reporting different categories of stakeholders per Q2 and Q11. Source: 2020 DRM summary reports.*

Two thirds of the countries(22)[121] mention that while authorities carry out a coordinating role on **risk assessment,** private and other public stakeholders are also involved in different ways. Two thirds of countries (21)[122] refer to **expert advice** provided by authorities and stakeholders on technical and scientific expertise/knowledge and valuable opinion, based on their own **risk-specific competence**. **Private sector** involvement is reported for risk management capability assessment (RMCA) with 18 countries[123].

Examples of the involvement of certain key non-public stakeholders include:

- **Private sector actors**: countries report of the involvement of the private sector both directly and indirectly in sector-specific assessments or disaster risk management activities. These relate chiefly to transport, electricity, and telecommunication (Belgium), cyber-security management (Austria), industrial accidents, nuclear and blackouts (Belgium, Czechia) and agriculture, energy, economy, food sector and water supply stakeholders (Portugal). The private sector has legal obligations to carry out risk assessment of some risks, such as chemical accidents and dam failures (Portugal, Sweden). Some countries (Austria, Malta, and Sweden) explicitly refer to **critical infrastructure** operators' involvement in sectoral risk critical infrastructure assessments or related scenario analysis.
- **Civil society** contributes directly to the risk assessment process[124]. Interest associations and civil society are consulted to gather input for the risk assessment process (Denmark, Malta), are involved in thematic fora for consultation (Malta) and may be involved in inter-institutional working groups (Lithuania). Finland reflects the role of citizens in risk

[121] AT, BE, DK, ES, EE, FI, FR, HU, IE, LT, LV, ME, MT, NO, PL, PT, RO, RS, SE, SI, SK.
[122] AT, BE, BG, CY, CZ, DE, DK, FI, FR, HR, HU, IT, LT, LU, MT, NO, PL, PT, RS, SI, TR.
[123] AT, BE, CZ, DK, ES, FI, HU, IE, LV, MT, NO, PL, PT, RO, RS, SE, SK, TR.
[124] BG, DK, FI, HU, IE, LT, ME, MT, SK, TR.

assessment processes. Some countries[125] report that civil society is involved in other Disaster risk management (DRM) stages, particularly volunteer organisations (Denmark, Slovakia) and sector specific **interest associations** (Denmark, Ireland). Similar to Finland, Belgium states that the population is also considered an important player in risk assessments.

- **Academic and research institutions** are the most reported stakeholder group to be involved in risk assessment by countries[126], providing the data, knowledge, and relevant expert opinion on risks. Some countries refer to research establishments/institutes[127] and academia[128] as being involved risk assessment in a generic way. On the other hand, some countries refer to research institutes providing **risk-specific expertise**, such as security analysis (Greece, Netherlands) or expertise on meteorology (Finland), astronomy and geology (Hungary), hydrology and water management (Romania), construction and urban planning (Romania), veterinary, nuclear sciences, water management, energy and military affairs, geography, security studies, agriculture, mining, and geology (Serbia). Academic and research institutions are also reported to be involved in other disaster risk management activities, including specific projects[129].

5.1.5 Horizontal and vertical coordination in risk assessment and risk management capability assessments (Q1, Q2, Q10, Q11, Q12)

The core procedural aspects of risk management governance must ensure **coherent and effective vertical coordination (national/sub-national)** and **horizontal coordination across disaster risk management (DRM) phases and across different authorities responsible for different types of risks and procedures.** This also entails the effective involvement of a variety of other stakeholders.

[125] BE, CZ, DK, FI, HU, IE, LV, MK, NL, NO, SE, SK, TR.
[126] AT, BE, BG, CZ, DK, EE, EL, FI, FR, HU, IT, LU, ME, MT, NL, NO, PT, RO, RS, SE, SI, SK.
[127] BE, LU, MT.
[128] DK, ME, MT, SE.
[129] AT, BG, DK, PT, RO, SK, TR.

5.1.5.1 Vertical coordination (national and sub-national)

All Member States and Participating States that responded on the level of responsibilities for the risk assessment process state that the main responsibility for risk assessment lies at the national level. Some 19 countries also involve the regional level, and 15 the local level.

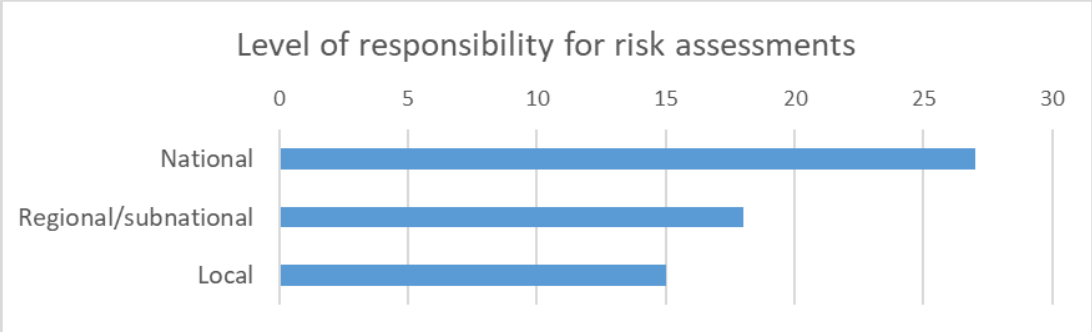


Figure 32. Level of responsibility for risk assessment (national and sub-national)*. Source: 2020 DRM summary reports.*

Vertical coordination on risk assessments is led by different coordinating authorities at the national level, chiefly ministries, agencies and authorities, and civil protection authorities, with sub-national authorities involved to varying degrees. Coordination is based on response plans, agreements on tasks and responsibilities, legislation and guidelines of the countries [130]. Some bodies (disaster risk reduction councils or working groups) can carry out both vertical and horizontal coordination.

Countries also report other types of vertical coordination mechanisms. These include structured information sharing and communication between relevant authorities[131], joint financing of preventive measures (Austria), and implementation of common projects (Finland). National level bodies are ready to intervene if sector capabilities are not sufficient (Hungary, Poland).

As for the different disaster risk management stages, 12 countries[132] refer to vertical cooperation in relation to **prevention**, while 15[133] refer to **preparedness**, and 16 mention **response**[134]**.** A total of 14 countries[135] mention cooperation for **risk management planning,** without reference to specific Disaster risk management (DRM) phases.

5.1.5.2 Horizontal coordination (cross sectoral, multi-hazard)

The Member States and Participating States report on several types of ***horizontal coordination*** of governance systems. They also report on instruments in place to ensure coordination between public authorities across sectoral policies related to specific risks or different authorities.

[130] AT, BE, BG, DK, ES, FI, FR, IE, IT, PL.
[131] BE, RS, SE, SK.
[132] AT, BG, DE, DK, ES, IE, IT, LV, MT, PT, RO, SK.
[133] AT, BE, BG, DE, DK, FI, FR, HU, HU, IE, IT, LV, NO, PT, SE, SK.
[134] AT, BE, BG, CY, DK, FI, FR, HU, HU, IE, IT, LV, PL, RO, SE, SK.
[135] AT, BE, BG, DE, DK, EE, ES, FI, HU, IT, LV, RS, SE, SK.

Specific legal frameworks are not widely reported for horizontal coordination (only Italy and Türkiye). A few countries mention soft law instruments like plans as a basis for coordination (Spain, Serbia).

Some countries report several types of coordinating authorities or other institutions for horizontal coordination: ministries, civil protection authorities, sub-national authorities. Some countries (16)[136] refer to horizontal coordination mechanisms based on working groups and platforms. Some present cooperation mechanisms between authorities related to **specific risks.**

Only a few countries report on horizontal coordination across the disaster risk management stages with examples given in **preparedness and response**. Some 20 countries[137] report horizontal coordination mechanisms to involve other stakeholders in disaster risk management. Different public authorities and private stakeholders are also involved though different **expert working groups and platforms**. Some countries[138] state that horizontal coordination is ensured through **councils, committees and commissions** that engage stakeholders (Spain, Finland, Ireland). Several countries[139] mention **platforms and forums** to ensure stakeholder coordination (Croatia and Portugal). Norway and Sweden mention public-private partnerships.

5.1.6 Regularity of reviews of risk management capability assessments

Member States and Participating States also provide information on how often risk management capability is assessed. The regular review and update of the risk assessment is often the starting point for risk management capability assessment reviews.

A total of 10 countries[140] provide additional information on the role of risk assessment reviews in risk management capability assessment of other risk management steps. Certain countries refer to specific risks in their risk management capabilities assessment (RMCA), for example Estonia explicitly mentions updating reviews of critical infrastructure as part of the risk assessment process, highlighting the requirements to list vital services. France and Ireland mention climate change as a driver for reviews (risk assessment procedures, driving synergies between climate change adaptation and disaster risk management). A total of 9 countries[141] also mention sectoral policies and legislation related to risk assessment procedures, highlighting the principle of sectoral responsibilities of the relevant authorities. In certain cases, the implications of the changes to the **identification of risks** are recurrent among the reported processes related to reviews[142]. In Poland the process is part of a 2-year civil planning cycle and the relevant authorities prepare reports that identify threats for the country related at national and sub-national level.

Some countries provide details on the **frequency of risk management capabilities assessment** reviews. Austria states that such a re-assessment is a continuous process, while Estonia,

[136] AT, BG, CZ, DE, DK, EE, FI, HU, IE, LT, LU, NO, PT, RO, SE, SK.
[137] AT, BG, EE, EL, ES, FI, HR, IE, LT, LU, LV, MT, NL, NO, PT, RO, RS, SE, SK, TR.
[138] AT, ES, FI, IE, RO, RS.
[139] AT, HR, NO, PT, SE.
[140] BG, ES, FI, HR, IE, LT, PL, PT, SI.
[141] DK, EE, FI, HU, IE, LV, NO, PL, PT.
[142] MT, NL, PL, PT, SK.

Netherlands, and Slovenia mention that the review is required every 3 years. In the case of Estonia, it is every 3 years for risk scenarios and 2 years for the RMCA for vital services, or when required because of a change in circumstances. Spain carries out annual risk assessment reviews to assess the implementation of the state plan and a systematic and regular reassessment of capabilities. At least once per year they carried out national interest exercises are in Spain to review the functioning of the system.

5.1.7 Risk management planning

Member States and Participating States are asked to provide information on risk management planning as one of the elements included in the assessment of risk management capabilities (RMCA).

An analysis of the national reports on risk management capability assessment received in 2018 showed that there were few examples of comprehensive disaster risk management strategies. To enable more effective disaster risk management, a comprehensive strategy should be both multi-risk and multi-hazard and should cover all disaster risk management (DRM) phases (at least risk assessment, prevention, preparedness, response and, in some cases, recovery).

In the 2020 reports, the information is scattered, but some key findings can be identified. From the replies to the 'governance questions' it appears that a number of different forms of disaster risk management planning documents (DRMPD) are in place. Some information has also been reported on the general approach to disaster risk assessments: some countries take a wider approach to the inclusion of disaster risks, particularly as regards the inclusion of 'man-made' disaster risks, such as security related risks.

According to the reports received (allowing for the caveat of limited reporting obligations), only a handful of countries seem to have a comprehensive disaster risk management planning document in place.

***Figure 33. Types of planning documents referred to** in national reports[143]. Source: 2020 DRM summary reports (Q9).*

Several countries report the strategic plans and strategies they have in place as frameworks. From the information reported, it cannot always be deducted if these are comprehensive disaster risk management strategies addressing all relevant risks, or strategies addressing certain aspects of risk management planning, e.g. emergency response or civil protection strategies, climate change adaptation.

A total of 12 countries[144] refer to some form of national disaster risk management plans. Bulgaria and Cyprus refer to national disaster risk reduction strategies, but also sector strategies on climate change adaptation, agriculture, forestry, and research development. Montenegro and Portugal provide a report of multi-risk overviews of strategies. The former refers to national protection and rescue plans for fires, earthquakes, floods, technical-technological accidents, landslides and rockfalls, chemical and biological risks. The latter refers to climate change, wildfire, and flood plans. The top risk planning instruments referred to by Spain are the civil protection strategy, the national security strategy, and the strategic plan (the general state emergency plan for civil protection).

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

***Question 13**: 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.*

***Key findings (Q 13)**:*

- *The majority of cross-border procedures reported cover **preparedness** for effective response including risk management capability assessment. Fewer of the reported cross-border cooperation procedures covered measures on **prevention**.*
- *Risk-specific **cross-border, inter-regional, and international procedures and measures** are reported for the many key cross-border risks, showing evidence of dynamic cooperation and interdependent management of risks that do not respect national borders.*
- *Whilst all levels of international cooperation are cited for flood risks and nuclear safety, Member States and Participating States only report cross-border/bilateral and inter-regional cooperation for other key risks such as wildfires and geological risks.*

[143] **DRM Planning documents referred to in the reporting of 'governance':**
- National security strategies (8) (AT, ES, FI, NL, PL, PT, RS, SK).
- National emergency management plans (6) (DK, EL, LT, LU, PL, RO).
- National disaster risk reduction, prevention or management plans or strategies (4) (BG, CY, DK, ME).
- National civil protection plans (4) (DE, ES, HR, LV).
- Emergency response plans (2) (BE, TR).
- National disaster protection plans (1) (BG).
- Adaptation to climate change strategies or plans (7) (CZ, EE, HU, IT, LV, MT, SK).
- Risk-specific plans (7) (EL, ES, MK, NL, SI, SK, TR).
- Sub-national plans (2) (ES, FR).

[144] BG, CY, CZ, DK, ES, LU, LV, ME, NL, PL, PT, SK.

- *Findings from the 2020 reporting cycle seems to indicate **under-reporting or implementation gaps** for cross-border cooperation. For instance, not all countries concerned reported cross-border flood risk management measures, despite cooperation in international river basins being required by EU Law.*

Most of the Member States and Participating States (25) answered the question on procedures and measures at cross-border, inter-regional and international level, but the degree of more detailed information varied. All but one of those countries that replied provided information on **cooperation** at cross-border, inter-regional, and international levels. About half of the countries reported full or partial information on **procedures for prevention and preparedness** on EU legislation, and on the measures to ensure rapid reactions (early warning system (EWS), exercises, trainings). However, most countries did not provide information on **how cross-border procedures are enforced** or any information on EU **legislation/policies or international commitments**.

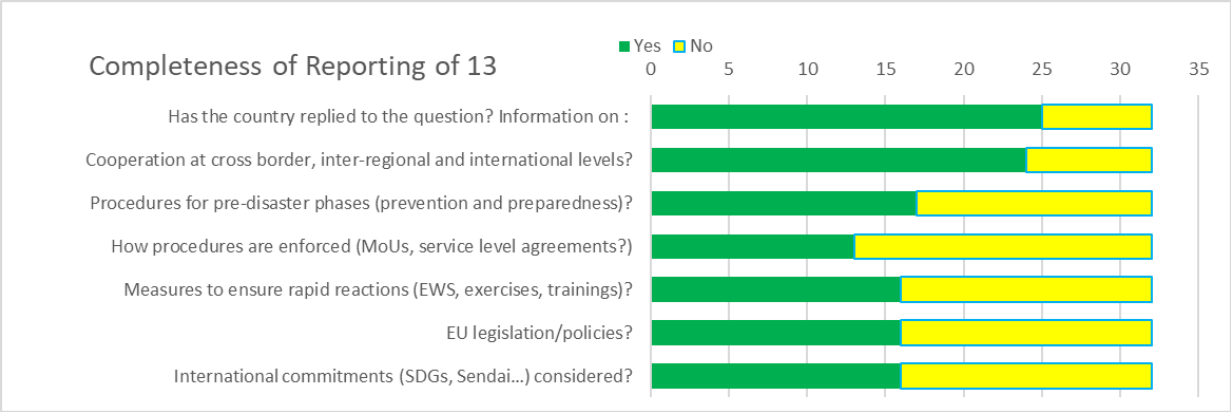


***Figure 34. Number of countries that replied to Q13**. Source: 2020 DRM summary reports (Q13).*

5.2.1 Cross-border disaster risk management and cooperation

The Member States and Participating States reported on **cross-border procedures and measures** for the managing the main cross-border risks, which are **floods, nuclear accidents, industrial accidents, wildfires, cyber risks, and health-related risks**.

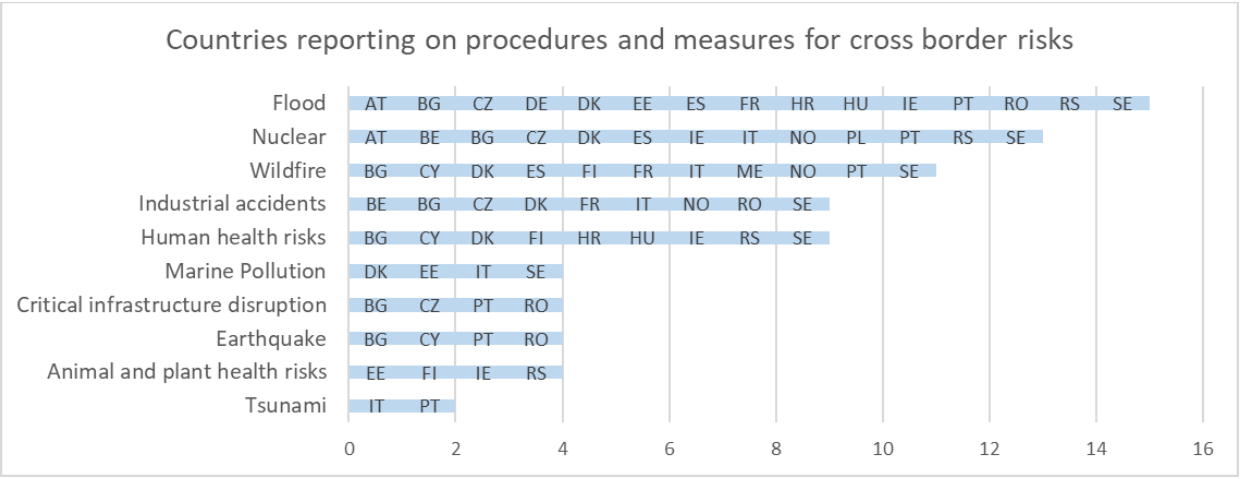


***Figure 35. Countries that reported cross-border cooperation mechanisms for specific risks.** Source: 2020 DRM Summary reports (Q13, Q 21, Q22, Q23 and Q24).*

Regarding **international cooperation,** countries report on a range of bilateral cross-border agreements with neighbouring countries, multilateral inter-regional cooperation, and work in the context of international organisations and agreements. The legal frameworks and agreements take different forms, such as international conventions, intergovernmental agreements for cooperation, or memoranda of understanding. Bilateral agreements often cover exchanges of information on risk (like early warnings) and cooperation in responding to certain disasters. EU legislation provides an important framework for international co-operation on cross-border risks.

Cross-border projects on disaster risk management (DRM) cooperation are also reported to be important. Some countries[145] reported INTERREG programme projects on cross-border DRM that cover risk analysis, prevention, preparedness, and response. The projects reported (Bulgaria[146] [147] [148], Germany, Italy[149], and Poland) focus mostly on strengthening preparedness and response capacity to both manage general risks and specifically to manage wildfires.

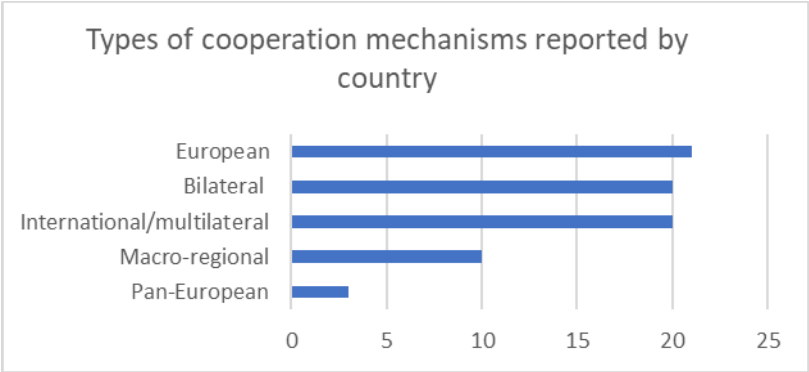


Figure 36. Number of countries reporting different types of international cooperation mechanisms*. Source: 2020 DRM Summary reports (Q13, Q21, Q22, Q23 and Q24).*

The majority of cross-border procedures reported cover **preparedness for effective response** including risk management capability assessment (Czechia, Poland, Slovakia). Czechia, Germany, and Romania refer to **joint exercises, trainings, and intervention plans** on cross-border emergencies. These measures operationalise the plans countries have, strengthen the preparedness capacity and potentially render response action more effective in case of real

[145] BG, DE, PL.
[146] https://keep.eu/projects/20974/Improvement-of-the-capacity-EN/.
http://www.ipacbc-bgrs.eu/projects-funded/joint-training-programme-forest-fire-prevention-and-management.
http://www.ipacbc-bgtr.eu/projects-funded/increasing-operational-capacity-forest-fires-and-improving-prevention-disasters.
[147] http://www.ipacbc-bgtr.eu/projects-funded/cross-border-cooperation-preparedness-and-reaction-case-floods
[148] https://keep.eu/projects/24214/Integrated-actions-for-join-EN/.
[149] https://climate-adapt.eea.europa.eu/en/metadata/projects/alpine-forest-fire-warning-system.
https://interreg-maritime.eu/web/med-star.
https://3watchout.italy-albania-montenegro.eu/.

transboundary crisis situations. One example mentioned by Czechia is the participation in **MODEX** exercises[150].

However, fewer countries reported cross-border cooperation measures related to **prevention,** although there is not always a clear distinction between prevention and preparedness actions. In addition, most of the reported prevention actions cover measures taken at national level to reduce the risk as a whole (as reported in Q21-Q22).[151]

Risk-specific cross-border, inter-regional, and international level procedures and measures are reported for the many key cross-border risks. This provides evidence of dynamic cooperation and risk management interdependencies. The reports also show the importance of other EU laws and international agreements for specific risks. However, there are also differences between specific risks. While countries report engaging in all levels of international cooperation in managing flood risks and nuclear safety, they only report cross-border/bilateral and inter-regional cooperation to manage other risks like wildfires and geological risks.

Risk	Cross-border/ bi-lateral	Inter-regional	European	International
Flood risk	Cross-border, bi-lateral	Inter-regional	European	International
Nuclear and radiological accidents	Cross-border, bi-lateral	Inter-regional	European	International
Wildfire risk management	Cross-border, bi-lateral	Inter-regional		
Cross-border health risk management	Cross-border, bi-lateral	Inter-regional	European	
Industrial accidents	Cross-border, bi-lateral	Inter-regional	European	
Cyber threats			European	International
Marine pollution	Cross-border	Inter-regional	European	
Critical infrastructure	Cross-border, bi-lateral		European	
Geological risks	Cross-border, bi-lateral	Inter-regional		
Societal risks			European	International

Table 3. Level of international cooperation reported for specific risks. *Source: 2020 DRM summary reports (Q13).*

5.2.2 EU legislation strengthening cross-border cooperation

The **Union Civil Protection Mechanism (UCPM)** [152] is the most commonly reported EU piece of legislation addressing cross-border risks, followed by **the Floods Directive** and the **SEVESO Directive on the Management of Industrial Risks**. Countries also report Euratom cooperation on nuclear safety and EU legislation on critical infrastructure and cyber security. Although all EU Member States are bound by these directives, not all report on the relevant implementation activities or refer to measures taken under those acts.

[150] Civil protection exercises | UCP Knowledge Network: Applied knowledge for action (europa.eu).
[151] Some examples refer to international cooperation on flood risk management plans in large river basin commissions which should include prevention and protection measures.
[152] CY, DK, EE, FI, FR, IE, LV, MK, MT, NO, RO, RS.

EU Legislation with disaster risk management relevant scope	Countries mentioning the EU law
The **Union Civil Protection Mechanism (UCPM)**	CY, DK, EE, FI, FR, IE, LV, MK, MT, NO, RO, RS
Directive 2007/60/EC on the assessment and management of flood risks (**Floods Directive**).[153]	BG, CZ, DE, EE, FR, HR, IE, IT, PT, RS, SE
Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances (**Seveso III Directive**).	BE, BG, FR, IT, MT
Directive (EU) 2022/2555 on measures for a high common level of cybersecurity across the Union (NIS 2 Directive)[154], which repeals Directive (EU) 2016/1148 (the **NIS Directive**) with effect from 18 October 2024, requires entities in scope to take cybersecurity risk-management measures and report significant incidents. Among others, NIS2 requires Member States to establish cyber crisis management authorities responsible for the management large-scale incidents and crises. NIS2 also establishes the EU-CyCLONe to support the coordinate management of large-scale cybersecurity incidents and crises.	BE, FI, IE, SE
Council Directive 2014/87/Euratom establishing a community framework for the nuclear safety of nuclear installations.[155]	BG, IE
Council Directive 2013/59/Euratom of 5 December 2013 laying down basic safety standards for protection against the dangers arising from **exposure to ionising radiation**.[156]	BG, IE
Directive (EU) 2022/2557 of the European Parliament and of the Council of 14 December 2022 on the **resilience of critical entities (CER Directive)** [157] and repealing Council Directive 2008/114/EC on the identification and designation of **European critical infrastructures (ECIs)** [158] with effect from 18 October 2024.	BG, MT
Directive 2000/60/EC establishing a framework for Community action in the field of water policy (**Water Framework Directive**).[159]	BG
Directive (EU) 2015/849 (**Money Laundering Directive**) on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing.[160]	NL

Table 4. *Countries that refer to the implementation of other EU Legislation explicitly, or implicitly in terms of relevant risk management measures cited. Source: 2020 DRM Summary reports (Q13).*

5.2.3 Disaster risk management in relation to international and pan-European frameworks

International frameworks also play an important role in national disaster risk management policies. The United Nations Office for Disaster Risk Reduction (UNDRR) **Sendai Framework for Disaster Risk Reduction 2015-2030[161]** is mentioned by 12 countries[162].Nine

[153] OJ L288, 6.11.2007, p.27.
[154] OJ L 333, 27.12.2022 p.80.
[155] OJ L219, 25.7.2014, p. 42.
[156] OJ L13, 17.1.2014, p.1.
[157] OJ L333, 27.12.2022 p.164.
[158] OJ L345, 23.12.2008, p. 75.
[159] OJ L327, 22.12.2000, p.1.
[160] OJ L141, 5.6.2015, p. 73.
[161] https://www.undrr.org/publication/sendai-framework-disaster-risk-reduction-2015-2030.
[162] BG, DK, EE, ES, FI, HR, LV, MT, NO, PT, RS, SK.

countries[163] refer to **the North-Atlantic Treaty Organization (NATO)[164]** related to its role related to geo-political threats, but also in relation to disaster risk management (DRM) policy actions. Six countries[165] mention the United Nations (**UN) Sustainable Development Goals (SDGs)[166]**, adopted in 2015 by a UN Summit and which operate in synergy with the Sendai Framework.[167] Five countries (Austria, Denmark, Ireland, Norway, Serbia) reported on their work with the **International Atomic Energy Agency (IAEA),[168]** which serves as a forum for notification and data exchange, to assess the situation and provide assistance on request. Four countries[169] also mention the **2015 Paris Agreement,[170]** whose main goal is to limit global warming to below 1.5 degrees Celsius, compared to pre-industrial levels, and the work of the **World Health Organization (WHO)[171]** (Austria, Denmark, Croatia, Ireland and Serbia), for instance the 2005 International Health Regulations[172]. Countries also mentio the work of the **UN Office for the Coordination of Humanitarian Affairs (OCHA)[173]**, **(**Denmark and Finland), the Organisation for Economic Co-operation and Development **(OECD)** (Estonia) and its Policy Handbook on Natural Hazard Awareness and Disaster Risk Reduction Education. [174], the **UN International Search and Rescue Advisory Group (INSARAG)[175]** (Hungary), and the **International Civil Defence Organization (ICDO),[176]** (Serbia)**.**

Some countries mentioned **European level regional initiatives and organisations** that cover cross-border cooperation at pan–European level or macro-regional (between specific countries in certain European regions). These include **the Council for Baltic Sea States[177]** (Estonia, Latvia)**, NORDRED[178]** (Finland), the **Barents Euro-Arctic Council[179]**, and the **Central European Initiative (CEI)[180]** (Slovakia). Other international Europe-focused frameworks were also mentioned, such as the EUR – OPA Agreement **of the Council of Europe[181],** Croatia and Serbia and refer to the Organisation for Security and Co-operation in Europe (**OSCE) Mission[182]** (Serbia).

[163] CZ, DE, DK, FI, LV, NL, PL, RO, SE.
[164] https://www.nato.int/.
[165] BG, EE, LV, NO, PT, SK.
[166] https://sdgs.un.org/goals.
[167] Disaster risk and the 2030 Agenda for Sustainable Development | UNDRR.
[168] https://www.iaea.org/.
[169] LV, NL, NO, PT (it refers to "Climate Change Agreements).
[170] https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement.
[171] https://www.who.int/.
[172] https://www.who.int/health-topics/international-health-regulations.
[173] https://www.unocha.org/.
[174] https://www.oecd.org/daf/fin/insurance/42221773.pdf.
[175] https://www.insarag.org/.
[176] https://icdo.org/.
[177] https://cbss.org/.
[178] https://www.nordred.org/.
[179] https://barents-council.org/.
[180] https://www.cei.int/.
[181] https://www.coe.int/en/web/europarisks
[182] https://www.osce.org/mission-to-serbia

6. RISK MANAGEMENT CAPABILITY ASSESSMENT (ARTICLE 6(1)(B) AND (D))

6.1 Focus on climate change adaptation measures (Q14)

***Question 14**: 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.*

***Key findings (Q 14)**:*

- *Two thirds of Member States and Participating States indicate synergies between **disaster risk management** (**DRM**) plans and **Climate Change Adaptation (CCA)** plans or strategies, including monitoring, collection, and processing of information and data; the production of risk assessments considering climate change projections and scenarios; and risk surveys.*
- *Countries take **three approaches** to creating such synergies at planning level: CCA strategies integrate DRM measures; CCA can be part of/ or linked to risk management planning and assessment, and can be included in the different risk strategies/action plans and in general environmental strategies.*
- *DRM and CCA can develop parallel synergies aimed at knowledge-sharing.*
- *Over half of respondents specified whether the synergies are at the national and/or subnational level.*
- ***Disaster risk management (DRM)** plans, with accompanying measures, are not reported under the UCPM, which makes it difficult to carry out a full analysis of synergies between DRM and CCA difficult.*

Most countries (26) provide information on synergies between disaster risk reduction and climate change adaptation measures at national or sub-national level for the key risks linked climate change. Some 20 countries indicate synergies between DRM and climate change adaptation, with over half of respondents specifying whether the synergies are at national and/or sub-national level. A total of 18 countries include information on their adaptation strategies and plans, and half of the countries indicate information on how such adaptation strategies and plans are integrated in DRM planning (and/or vice versa).

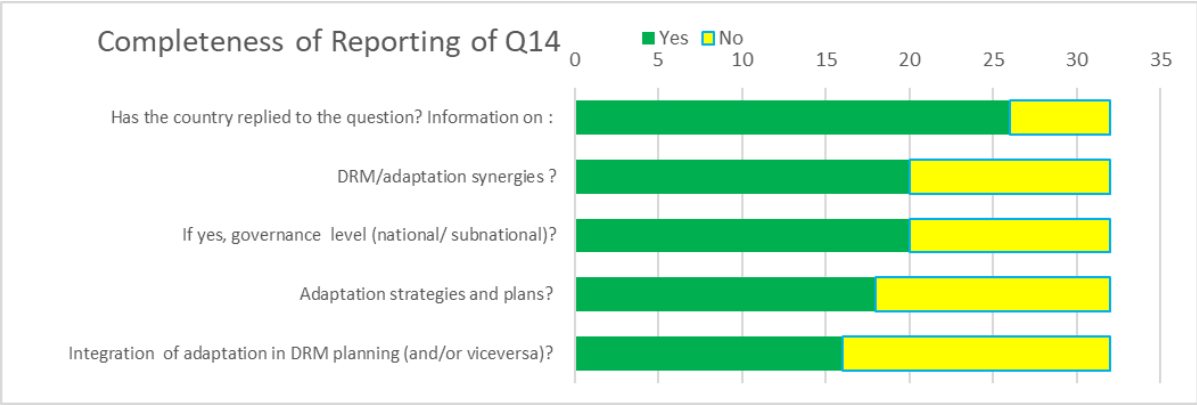


***Figure 37. Number of countries that replied to Q14.** Source: 2020 DRM Summary report (Q14).*

6.1.1 Synergies between disaster risk management and climate change adaptation

Member States and Participating States reported extensively on **synergies** between climate adaptation and disaster risk management. Countries adopt different approaches for creating such synergies at the planning level:

- Climate Change Adaptation Strategies integrate disaster risk management measures (Spain, Croatia)
- Climate Change Adaptation can be part of (or linked to) risk management planning and assessment (Estonia, Greece, Finland, Malta, Norway, Romania) and can be included in the different risk strategies/action plans (Slovakia) and general environmental strategies (Czechia)
- Disaster risk management (DRM) and climate change adaptation (CCA) can develop parallel synergies aimed at sharing knowledge (Germany, Latvia, Portugal).

Countries distinguish between **national adaptation strategies**, **national adaptation plans**, **sectoral adaptation plans**, and **regional adaptation plans**. They predominantly report taking a national approach to adaptation planning. Some 20 countries present adaptation **plans or strategies at national level**[183], with some (7)[184] referring to **sub-national planning,** (Greece regional, Spain for the different governance levels, Ireland and Italy regional and local, Netherlands provincial and Sweden local). Countries also report that climate change measures can produce synergies at sub-national level (e.g. Austria reports a measure to expand drinking water reserves in the event of a drought). Cities play a key role in climate risk management and adaptation at the sub-national level, also linked to the **Global Covenant of Mayors** (Finland).

Countries reported **sectoral action plans** to establish cooperation mechanisms on adaptation between authorities and the sectors concerned. These cover specific areas such as standards for the design of buildings and hydro technical facilities, land-use (Bulgaria) and spatial planning (Netherlands), infrastructure, health, and development of nature-based solutions (Spain).

Countries also report on the connections with the **international legal and policy framework**, such as the Sendai Framework for Disaster Risk Reduction 2015-2030 (Ireland, Norway), the Paris Climate Agreement, and the United Nations (UN) 2030 Agenda for Sustainable Development Transforming our World (the last two mentioned by Bulgaria).

In terms of synergies **between specific measures and approaches related to adaptation actions and disaster risk management**, the approaches include the monitoring, collection, and processing of information and data (Bulgaria); risk assessments factoring in climate change projections and scenarios (Estonia); and risk surveys (Latvia).

[183] AT, BG, CY, CZ, DK, EE, EL, ES, FI, HR, IE, IT, LU, MT, NL, NO, PT, RO, SE, SK.
[184] AT, EL, ES, IE, IT, NL SE.

6.2 Critical infrastructure protection measures (Q15)

***Question 15**: State whether there are measures in place to protect critical infrastructure regarded as relevant for the continuation of vital societal functions.*

***Key findings (Q 15)**:*

- *Only just over half of the Member States and Participating States indicated that they have a policy in place to **protect or define** critical infrastructure. One third of countries reported **specific measures** to protect these assets and only a few identified **key sectors** with assets defined as critical infrastructure.*
- *A few countries provided cross-references to **EU policies** related to critical infrastructure protection.*
- *Limited information was reported on **investment needs** and only a few countries reported information on **regular reviews** of critical infrastructure.*

Slightly over half of Member States and Participating States provided some information on the measures in place to protect critical infrastructure[185]. Of those that did not respond, two countries(Spain, Luxembourg) indicated that critical infrastructure is not a competency of civil protection authorities, therefore did not provide any type of information. Only 14 countries used reporting guidelines, but none of those provided information on all of the aspects of this question (measures, policy, list, investment needs, and cross references to other EU policies).

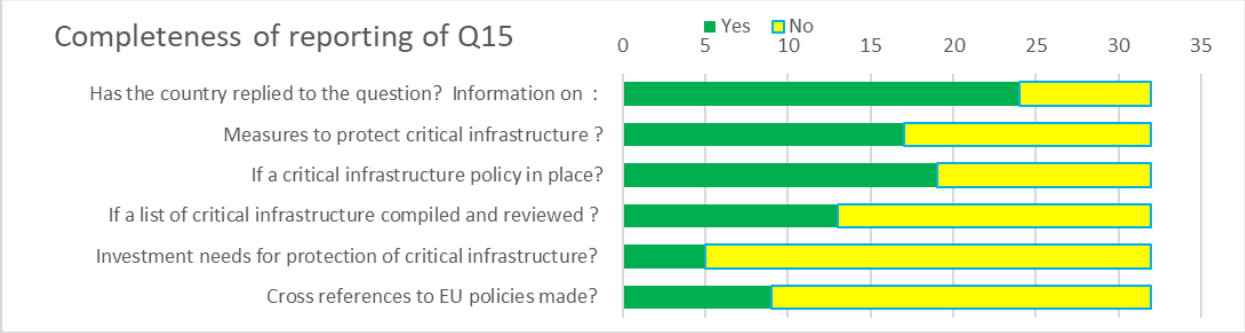


***Figure 38. Number of countries that replied to Q15.** Source: 2020 DRM summary reports (Q15).*

6.2.1 Measures to protect critical infrastructure

Just over half of the countries (17)[186] indicate that they have a **policy in place to protect or define critical infrastructure**. **Policy approaches vary**, including how they focus on identifying sectors, obligations for critical infrastructure operations, indications of which

[185] OJ L 345, 23.12.2008, p.5 The European Critical Infrastructure Directive (CID) was applicable at the time of submission of the DRM summary reports addressed critical infrastructure with cross-border impacts. Critical infrastructure is defined as an '*asset, system or part thereof located in Member States which is essential for the maintenance of vital societal functions, health, safety, security, economic or social well-being of people, and the disruption or destruction of which would have a significant impact in a Member State as a result of the failure to maintain those functions*'.

[186] AT, BE, BG, CZ, DE, DK, FI, FR, HU, HR, IT, MT, PL, PT, RO, SE, SK.

societal functions must be guaranteed at all times, emergency plans, the responsibility to draw up risk assessments. Several (4) countries indicate that their policy is currently being reviewed or further developed.

A third of countries reported having **specific measures** in place to protect these assets are (11) [187], including measures under the following categories: planning for civil protection; risk and threat assessments and analysis; cooperation mechanisms between authorities and critical infrastructure operators; procedural and technical aspects; and specific measures related to risk including energy supply disruptions, floods, earthquakes, volcanic eruptions, landslides, and floods, terrorism and cyber security.

6.2.2 Critical infrastructure sectors

The key sectors that hold assets defined as critical infrastructure (as reported by 8 countries)[188] include the energy sector and electricity; water management and/or water supply; telecommunications and/or communications; transport; finance; food supply and/or food industry; and healthcare.

Sector	Sub-sector	Key critical infrastructure risks referred to in Q3
Energy sector and electricity[189]	Electricity (CZ, MT) Nuclear plants (CZ) Distribution of electricity to medium-voltage installations (IT), fuel and energy sources (PL), Gas and oil (MT)	Electricity disruption and nuclear accidents (CZ) Disruption of fuel and energy systems (PL)
Water management and/or water supply[190]	Water treatment (CZ) Water supply (DE, PL, RS) Large dams (IT)	Drinking water supply disruption (CZ, DE, RS)
Telecommunications and/or communications[191]	Broadcasting communication services and media (DE, IT, MT) ICT networks (PL) Telephony and internet access (CY) Cyber security (FI, IE) DNS services (MT).	Disruption of tele-communication systems (PL) Communications networks and services disruptions (FI) Cyber incident (IE) Cloud storage security (IE) Cyber-attacks (MT)
Transport[192]	Airports (CY, MT) Ports and maritime infrastructure (CY, IE, MT) State roads and highways (CY, IT, MT)	Maritime incident (IE) Transport accidents (IT)
Finance[193]	Banking and governmental treasury (CY, MT) Insurance (DE)	Financial disruption risks (CY)

[187] BE, CZ, DE, DK, FI, HU, IE, IT, PT, RO, SE.
[188] CY, CZ, DE, HU, IT, PL, RS, SK.
[189] CY, CZ, FI, IE, IT, MT, NL, RS, DE, HU, PL, SK.
[190] CY, CZ, RS, DE, HU, MT, NL, PL, SK.
[191] CZ, DE, FI, HU, IT, MT, NL, PL, RS, SK.
[192] CY, IE, IT, DE, HU, MT, NL, SK.
[193] CY, RS, DE, HU, MT, PL, SK.

Food supply and/or food industry[194]	Crop and livestock production (CZ, MT) Agriculture (HU, IE, MT, SK) Fisheries (MT)	Food supply disruption (CZ) Food safety chain incidents (HU) Food chain contamination (IE) Large-scale disruption of large-scale food supplies (SK)
Healthcare[195]	Hospitals and dialysis centres (CZ, DE, MT) Health protection (PL) and pharmaceutical manufacturers (CZ) Staff, facilities and equipment, disease control centres, local biosecurity centres (IE) Medicines (MT)	Pandemic and epidemic (CZ, DE, IE, MT) Zoonotic diseases, vaccines hesitancy, long COVID, AMR resistance (IE)

Table 5. Sectors identified as relevant critical infrastructure(Q15) by countries, *following the sectors identified in the new Directive on critical entities, and a comparison with* ***findings on critical entities and services findings among key risks****(Q3). Source: 2020 DRM Summary reports, Q15, Q3.*

Some countries also indicated **other sectors**, such as cultural goods and artefacts (Germany, Malta), public sector and defence (Hungary, Malta), rescue and pipelines for hazardous substances (Poland), environmental protection and functioning of state bodies (Serbia), logistical services (Finland), social security and welfare (Hungary, Malta), tourism, industry, and emergency services (Malta). No countries referred to the other sectors covered by the **Directive on the resilience of critical entities (CER Directive)** (digital infrastructure, public administration and space)[196].

However, only minimal information was reported on the procedure of compiling a **list of critical infrastructure,** and indicating whether it is **regularly reviewed and updated**. Romania and Malta indicate a review and update is carried out every year (Romania) and every three years (Malta).

6.2.3 Investment needs to protect critical infrastructure

The reports submitted rarely indicated the investment needed to protect critical infrastructure a. Only a few countries (4)[197] provided information on investment needs and on the authority responsible for carrying out such assessments. Countries also report related issues e.g. on project investment needs (Hungary), vulnerability assessments to identify the priorities for investment (Romania), the role of critical infrastructure operators (Bulgaria, Ireland), and links with planning assumptions (Lithuania)). They did not provide information on budgetary provisions or timeline.

6.2.4 EU cross-reference policies on critical infrastructure

[194] IT, RS, HU, MT, PL, SK.
[195] IE, IT, RS, HU, MT, PL, SK.
[196] Sectors to be covered by the CER Directive: energy, transport, banking, financial market infrastructures, health, drinking water, wastewater, digital infrastructure, public administration, and space.
[197] BG, FR, LT, RO.

Just under a third of countries (9)[198] report on the importance of EU legislation on critical infrastructure and also safety of information systems (cybersecurity).

EU legislation with disaster risk management relevant scope	Countries mentions of EU law
Directive (EU) 2022/2557 of the European Parliament and of the Council of 14 December 2022 on the **resilience of critical entities(CER Directive)** and repealing Council Directive 2008/114/EC on the identification and designation of **European critical infrastructures (ECIs)**[199] with effect from 18 October 2024.	BG, IT, PT, RO, SE, SK
Directive (EU) 2022/2555 on measures for a high common level of cybersecurity across the Union (NIS 2 Directive)[200], which repeals Directive (EU) 2016/1148 (the **NIS Directive**) with effect from 18 October 2024, in relation to the obligation to provide EU Member States, the Commission and the European Cybersecurity Agency (ENISA) with regular information on cyber incidents in the provision of services.[201] .	BE, CZ, SE
Pan-European **aviation safety** regulatory system	IE

Table 6. *Overview of different pieces of EU Legislation relevant to disaster risk management and critical infrastructure as mentioned by Member States in their reports. Source: 2020 DRM Summary reports, Q15.*

6.3 Source(s) of financing (Q16)

Question 16*: 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.*

Key findings (Q 16)*:*

- *Member States and Participating States mostly referred to **public financing instruments** in the field of disaster risk management, two thirds reported having **national disaster funds** or funding schemes in place, and a few explicitly relate these funds to climate change. In the event of an emergency, many countries allocate public budgetary resources in a flexible way primarily though **reserve budgets, contingency funds, and budgetary flexibility provisions.***
- *The funding mechanisms reported relate mostly to response measures, followed by prevention and preparedness. Only a few referred to funding for risk assessments and recovery measures.*
- *One third of the countries refer to **private financing instruments** for DRM, mostly **disaster insurance**.*
- *Over two thirds of Member States mentioned that they allocate **EU funds** for disaster risk management and a few mentioned international funds.*

Many Member States and Participating States (26) provided a partial or more complete reply on the financing of disaster risk management. Some 20 countries provided information on the flexibility of the budget. Concerning the sources of funding, a total of 26 countries provided information on the national level, and 14 at sub-national level. The financing sources that most

[198] BE, BG, CZ, EI, IT, PT, RO, SE, SK.
[199] OJ L 333, 23.12.2022, p. 164.
[200] OJ L 333, 27.12.2022 p.80.
[201] OJ L 194, 19.7.2016, p. 1.

countries provided information on were public (26), EU funding (22) and private (10), including insurance (5), while other international sources (7) and other sources (2) were least cited. Some 13 countries mentioned information on stakeholder covered costs. Almost 20 countries provided information on national disaster funds or schemes (emergency funds etc), but only 5 stated that they were specifically linked to climate-related risks.

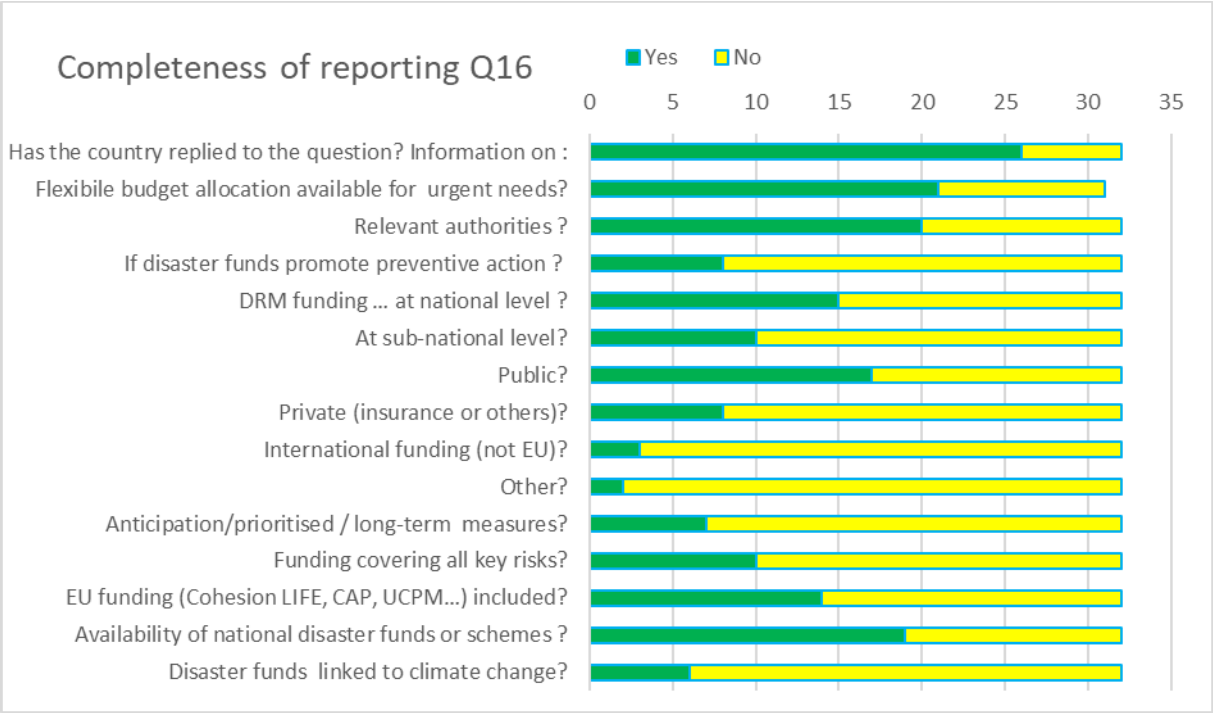


Figure 39. Number of countries that replied to Q16. Source : *2020 DRM summary reports (Q16).*

6.3.1 Flexibility of budgetary resources in the event of urgent need

Many (20)[202] of the countries describe how they allocate public budgetary resources in a flexible way in the event of emergencies, primarily though **reserve budgets, contingency funds and budgetary flexibility provisions.** For example, some use criteria and thresholds to allocate budget resources, such as criteria related to if a situation is defined as an emergency (France), or under 'exceptional circumstances' an increase in spending limits can be permitted (Finland). Other examples include schemes and mechanisms to finance preparedness and response measures by stakeholders (Hungary), the allocation of funds based on scenario work (Ireland), risk and vulnerability assessments (Sweden), or feasibility studies (Latvia), and flexible funds transfer to special accounts (Türkiye). Bulgaria reports having a reserve for unexpected or urgent expenditure, which is planned annually under the State Budget Act for the prevention, containment, and management of the consequences of disasters. If necessary, both Finland and Norway make allowances for deficit expenditures.

Some countries mention budgetary allocations at **sub-national** level, particularly by allocating resource to regions to cover the initial phases of emergencies when local funds are exhausted

[202] BE, BG, CY, CZ, DE, DK, EE, FI, FR, HR, HU, IT, LU, LV, NO, PL, PT, RO, SE, TR.

(Czechia) or on the basis of territorial indicators (population, size, danger, risk) (Italy). Italy also has agreements between the state and the sub-national authorities on measures to be taken and Norway exercises burden-sharing. The reports also highlight potential budgetary gaps, underlining that if a new risk is identified, existing financial resources must be stretched more thinly to cover this risk. Belgium highlighted that, in the event of an emergency, additional budget needs to be requested.

Some countries reported risk-specific budgetary provisions, for instance in the event of flooding, there should be budget flexibility for their Länder (Germany). Ireland makes a clear reference to the flood relief schemes provided for under the **Floods Directive**.

6.3.2 Public sources of financing for disaster risk management

A total of 26 Member States and Participating States[203] refer to **public sources of financing** in the field of disaster risk management (DRM). Two thirds of the countries (21) reported having **national disaster funds** or funding schemes in place. Some 5 countries[204] explicitly link these funds to climate change.

Information on funding is provided for the four stages of the DRM process mentioned in the reporting guidelines, namely: risk assessment, prevention, preparedness, response, and to some extent recovery. The funding mechanisms reported mostly concern response measures (21 countries), followed by prevention (18) and preparedness (15). Only a few refer to funding to carry out risk assessments (5) and recovery (3).

Of the 5 countries[205] that referred to public sources of finance for **risk assessment,** Austria mentions earmarked funds from the national disaster funds and Sweden government grants allocated to funding risk assessment and other measures.

A total of 18 countries[206] referred to public sources of finance for risk **prevention**. Some countries reported public risk prevention funds that also support prevention (France, Italy, Finland), others mentioned finance directly from government budgets, both on national and sub-national scale (Bulgaria, Cyprus) and joint financing by the municipalities, associations, and cooperatives (Austria). In some cases, prevention funding is linked to tax revenue (Austria, Ireland).

Some 15 countries[207] referred to public sources of finance for **preparedness.** These funds are in some cases part of the budget of the state (Norway), the subnational authorities (Denmark), both state and subnational authorities (Sweden), or the civil protection authorities (Belgium).

One third of countries[208] referred to public sources of finance funding **response** measures. These funds can be part of the budget of state and civil protection authorities (Hungary), the

[203] AT, BE, BG, CY, CZ, DE, DK, EE, ES, FI, FR, HR, HU, IE, IT, LT, LU, LV, NO, PL, PT, RO, RS, SE, SI, SK, TR.
[204] FR, IE, IT, PT, SE.
[205] AT, FI, IE, PT, SE.
[206] AT, BG, CY, CZ, DK, FI, FR, HR, HU, IE, IT, LV, NO, PL, PT, RO, RS, SE.
[207] AT, BE, BG, CY, CZ, DK, FI, HU, IT, LV, NO, PT, RO, SE, TR.
[208] AT, BE, BG, CY, CZ, DK, EE, FI, HR, HU, IE, IT, LT, LU, LV, NO, PL, PT, RO, SE, TR.

civil protection agencies (Belgium), or the civil protection agencies but sourced from national and municipal agencies (Denmark). In Italy, emergency funds are allocated from resources established by law. Some countries refer to funding for response under a 'budgetary reserve' (Croatia), under the special accounts of a ministry (Türkiye) or activated if local authorities require exceptional support or resources (Ireland).

Only 3 countries[209] refer to public sources of finance funding **recovery** measures. They are funding for 'Build back Better' in Poland, compensation for damage in Norway, and public drought risk reinsurance in Lithuania.

A few countries provided information on how measures are **prioritised for funding**, e.g. via a forum for dialogue and coordination between the prerogatives of the state and those of self-government (Italy), and via risk assessments to identify priority measures at sub-national level before being eligible for prevention and preparedness funding (Sweden).

6.3.3 Private-sector sources of financing for disaster risk management

One third of countries (11) reported having **private financing** instruments for disaster risk management (DRM) in place[210]. 5 countries[211] refer to **disaster insurance**, focusing on recovery from disasters by providing compensation for damage and by playing a role in preventing disaster risk. Disaster insurance can be compulsory or voluntary. **Compulsory insurance** means insurance must legally be taken out in order to carry out an activity, as it is for housing in Romania, fire and natural perils in Norway, and for certain disasters in Cyprus. With high coverage of the market and a large pool of insured persons, this can help spread risk and reduce the overhead costs per policy, while limiting *ex-post* government relief. **Voluntary insurance**, which means there is no legal obligation to take out an insurance policy, is for example used in Türkiye.

The **disaster risks most commonly covered by insurance** are windstorms, floods, other extreme weather, wildfires and earthquakes.

Other sources of private-sector funding to manage disaster risks referred to in the report relate for instance to public-private partnerships (Denmark), operator responsibility for instance for nuclear safety and toll collection from the use of critical (transport) infrastructure.

6.3.4 Financial support from EU and international funds for prevention and preparedness

Over two thirds of countries (23) [212] mentioned allocating EU funds to disaster risk management. Multiple forms of EU financial support are available to serve countries, such as structural and cohesion funds, UCPM preparedness and prevention projects, LIFE funding

[209] AT, BE, BG, CY, CZ, DK, EE, FI, HR, HU, IE, IT, LT, LU, LV, NO, PL, PT, RO, SE, TR.
[210] AT, BE, BG, CY, CZ, DK, FI, FR, IE, NO, PL, RO.
[211] CY, FR, IE, NO, RO.
[212] BE, BG, CY, CZ, DE, DK, EE, FI, FR, HR, HU, IE, IT, ME, MK, MT, NO, PL, PT, RO, SE, SI, SK.

(Environment), pre-accession instruments for Participating States, research and security funds. Some countries refer to EU Solidarity fund, a post-disaster relief instrument that may provide cover the part of the costs of emergency and recovery operations incurred by public authorities.

Some 8 countries report on EU structural funds as being crucial for prevention and preparedness[213] and 7 countries refer to **UCPM preparedness and prevention projects** single-country grants (Track 1) funds[214] and financing of response modules under RescEU[215].

Some countries (7) [216] also mentioned use of **international funds**, including World Bank loans (Greece, Romania, Montenegro, North Macedonia), United Nations and NATO support (Hungary), Norwegian Financial Mechanism (Romania, Slovakia), Swiss Financial Mechanism (Slovakia), Open Partial Agreement on Major Risks of the Council of Europe (Portugal), and the International Monetary Fund (ME).

6.4 Infrastructure, assets and equipment (Q17)

Question 17: *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.*

Key findings (Q17)*:*

- *Only about one third of the Member States and Participating States reported having **procedures** in place to ensure that **assets are adequate**, which indicates under-reporting on this question. Procedures include **auditing procedures, inventories of assets or strategic reserves.***
- *In general, **human resources** form the core of the countries' response capacity. A few countries mentioned regular training, exercises, and preparedness planning of authorities and operational staff to boost their preparedness and response capacity.*
- *There is a recurring emphasis on **capacity gaps** and resources are needed to boost preparedness and response.*

Relatively few Member States and Participating States responded with the assets available to mitigate the impact of disasters and respond promptly to disasters. Just under half of the countries provided some replies to the question, but only a few respond to the specific questions on whether inventories are in place. About a third of respondents provide information on procedures to keep assets in good order and on preparedness capacities.

[213] BG, CY, CZ, EE, MT, PT, RO, SI.
[214] EE, FI, ME, PT, RO, SE, SK.
[215] FI, RO, SE, SK.
[216] EL, HU, ME, MK, PT, RO, SK.

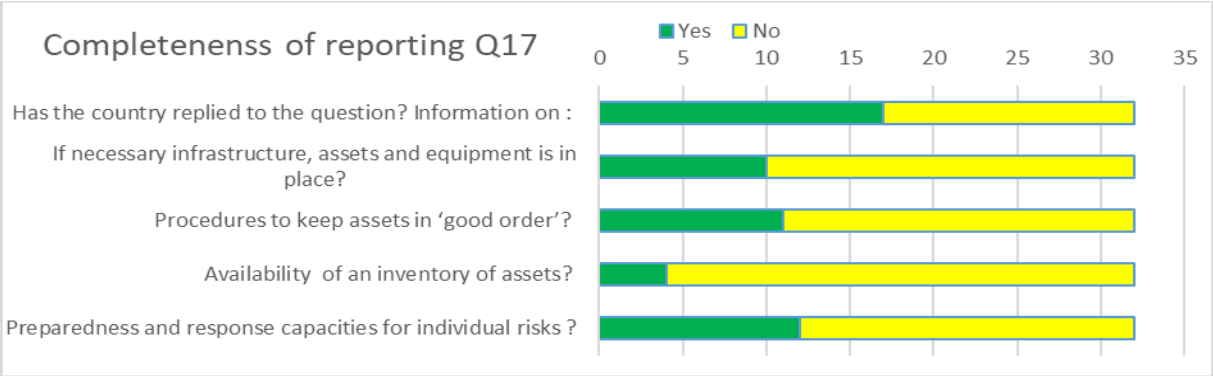


Figure 40. Number of countries that replied to Q17. *Source: 2020 DRM Summary reports (Q17).*

6.4.1 Procedures to keep assets in 'good order' and up-to-date, including inventories

Countries' reports give some insights into the procedures used to keep infrastructure, assets, and equipment in good order. The procedures reported focus on supply management and asset auditing, human resources training and preparation (particularly firefighting sources), and on sufficient financing to keep the required assets updated.

Only about one third of countries (10) reported having **procedures** in place to ensure that **assets are adequate.** This may indicate under-reporting rather than implementation gaps. Procedures include auditing procedures (Denmark, Ireland), inventories of assets (Denmark, Croatia, Romania), or strategic reserves (Denmark, Finland, Ireland, Portugal). Countries emphasised the importance of knowledge sharing of equipment inventories and needs (Denmark), sufficient financial resources to guarantee regular maintenance, updates, the purchase of physical equipment and investment in relevant activities (Austria), and investment plans for equipment (Belgium, Denmark).

6.4.2 Availability of required infrastructure, assets, and equipment for key risks or impacts of disaster events

In general, **human resources** form the core of countries response capacity, particularly fire brigades, emergency services, and armed forces. A few (4) countries[217] refer to regular **training**, **exercises,** and **preparedness planning** for authorities and operational staff to boost their preparedness and response capacity.

Regarding response capacities, 7 countries[218] reported having **emergency health response capabilities** in place, 3 countries (Belgium, Ireland, Hungary) reported **flood response** capabilities, 2 countries (Belgium, Denmark) reported **chemical, biological, radiological and nuclear (CBRN)** response capabilities. Sweden also reported having **search and rescue** capabilities and Germany reported having **wildfire response** capabilities in place.

[217] AT, DE, FI, SE
[218] BE, CZ, DK, HU, IE, PT, SE,

Other response capacities reported include infrastructure, assets, and equipment for critical infrastructure or supply disruptions, generators in case of blackout, power stations for energy-related disruptions, assets usable in different emergency situations, sheltering capacity and equipment, and transport infrastructure.

6.5 Focus on disaster loss data collection and procedures (Q18)

***Question 18**: State whether a system is in place to collect disaster loss data. Describe how data is collected on the key risks identified.*

***Key findings (Q18)**:*

- *The reports of Member States and Participating States show that **loss data collection** is still **not systematic and remains fragmented and unstructured** at national level. Loss and damage data is collected by different public authorities or private stakeholders, with no reported centralised system for data-sharing.*
- *Countries mentioned **several challenges** related to loss data collection, including a lack of digitalised data, no common system in place and restricted access to databases.*
- *Despite these challenges, many countries **recognise the use of collecting loss data** to improve disaster risk management strategies, to prioritise measures and to develop financial strategies. Therefore, countries are encouraged to improve their disaster loss data collection, as required by the UCPM (as of 2021) and the SENDAI Framework.*

Although 24 Member States and Participating States replied to the question on the collection of loss data, only a few provided information on whether key risks were covered, if data was collected by hazard, and how data is collected by type of loss (economic, social etc.). Less than half of the countries provided information on who collected the data and one third replied on if there is a system in place to share data or store the data for different type of hazards/sectors. Some also provide information on the purpose of collecting and sharing loss data. None of the countries reported that their data is provided to the Risk Data Hub. Though 7 countries referred to the Sendai obligations, only two Member States referred to obligations under other EU law obligations.

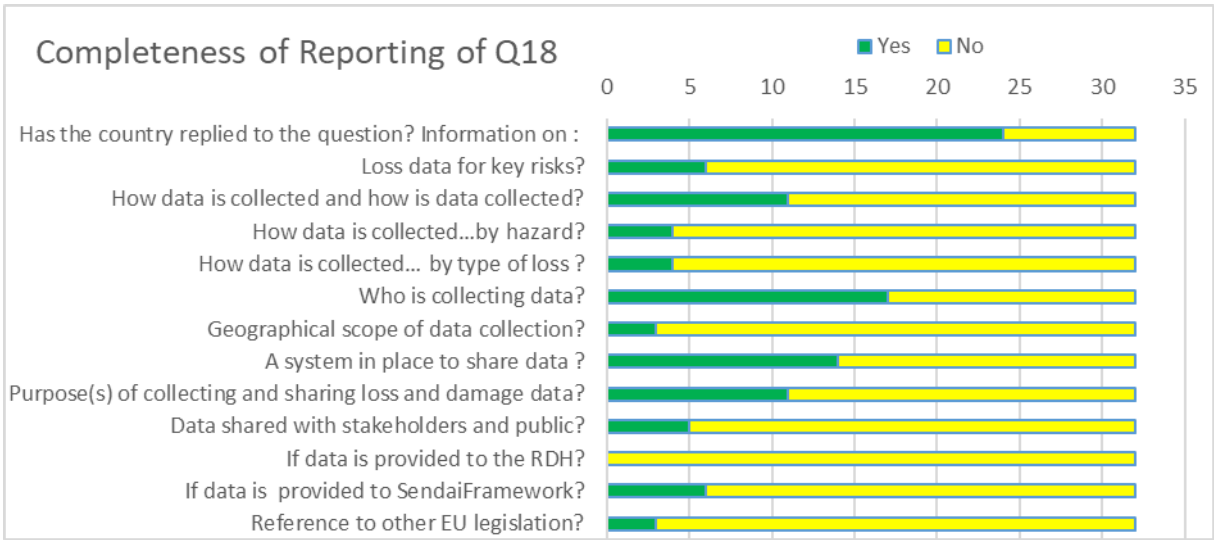


***Figure 41. Number of countries that replied to Q18.** Source: 2020 DRM Summary reports.*

6.5.1 Systems in place to collect loss data

Data on losses in terms of economic damage, human lives lost or injuries, infrastructure damage and environmental impacts of previous disaster events are important to feed into robust disaster risk modelling. This is essential to support future risk management strategies, including work to prioritise measures, to assessment acceptable risk and to plan financial strategies.

Countries reports, however, show that **loss data collection** is still **not systematic, and remains fragmented and unstructured** at national level. Only one country (Norway) reported that a national comprehensive platform is in place for the collection of loss data, and about a quarter of countries explicitly reported the lack of a central system to share and analyse loss data. At the time of reporting, no country report sharing data with the JRC Risk Data Hub.

Several countries provided insights into the practices and challenges related to loss data collection, particularly on who collects the data, how, when, and why data is collected. Loss and damage data is collected by different **public authorities** in half of the countries (15)[219] and by **private-sector stakeholders** (notably insurance companies) in a few countries (Denmark, Ireland, Norway).

About half of the countries (16)[220] report on the **different purposes** for collecting loss data and their use including to improve disaster risk management strategies, to carry out vulnerability and risk assessments, to develop emergency preparedness exercises, to assess the effectiveness of prevention measures and to improve the orientation of public investments.

The countries mention **several challenges** related to loss data collection. These include a lack of digitalised data (Czechia), and not having a common system in place (Hungary). 3 countries (Spain, Lithuania, Portugal) report that their **systems and practices are being developed** to improve loss data.

6.5.2 Collection of loss data by risk or by impact category

Of the 9 countries that shared information on risk-specific data collection, most mentioned floods, critical infrastructure related losses, followed by extreme weather, animal disease, earthquake and different accidents. The countries referred to loss data collection in general, but a few detailed that they collect data on specific impacts, such as human impacts (6), infrastructure (5), and economic damage.

[219] BE, BG, CY, EE, EL, ES, FI, HR, HU, IE, IT, PL, SE, RO, RS, TR.
[220] AT, CZ, DK, EE, EL, FI, IE, HR, HU, LV, MT, NO, PT, RO, SE, TR.

Risk \ Type of damage	General	Economic	Human	Environment	Infrastructure	Cultural heritage	Animal
Extreme weather	DK, IE	FI					
Floods	DK, IT, TR	HU	HU	HU		HU	
Animal diseases	DK, FI						IE
Transport accidents	DK	FI	FI	FI	FI		
Critical infrastructure	EE, HU	IE[221]			FI, IE[222]		
Fires[223]	DK, HU						
Miscellaneous accidents	FI, NO	FI	FI, IE, NO	FI	FI		
Cyber threats					FI		
Human health	FI, PL		PL		PL		
Earthquake	HU, TR		IT		IT	IT	
Mass migration			HU				
Terrorism			IE				
Mass movements	TR						

Table 7. *Overview of the risks for which countries reported disaster loss data collection systems. Source: 2020 DRM Summary reports (Q18).*

6.5.3 Sharing loss data with stakeholders and the public

Some information is provided on data sharing with stakeholders and the public, but the countries do not provide detailed information. 7 countries[224] stated that there is **no centralised national system for the sharing and analysis of data**.

For countries that mentioned having different databases, there is either significant difficulty in **accessing the data** in a format that enables assessment (Cyprus), or **differing methodologies** are used for data risk assessments (Estonia and Greece).

6.5.4 Links to EU and international frameworks

Both the UCPM (as of 2021) and the Sendai framework require improved and systematic disaster loss data. Only 9 countries [225] referred to the reporting obligations under the **Sendai framework** and to loss data collection and sharing based on its methodology.

[221] Supplies.
[222] Physical infrastructure.
[223] Miscellaneous fires.
[224] BE, BG, CY, DK, EE, EL, SE.
[225] BG, CY, CZ, IT, MK, RO, RS, SE, TR.

A few countries refer to loss data collection under **other EU legislation,** notably the obligation to regularly report on past flood events under the Floods Directive[226] (Cyprus, Ireland), despite the fact that all EU Member States have the obligation to report on past floods. Austria mentions that loss data is collected for the purpose of submitting an application to the EU Solidarity Fund.

No countries included any information on data shared with the Risk Data Hub[227] developed by the Joint Research Centre of the European Commission.

6.6 Focus on early warning systems equipment and procedures (Q19)

***Question 19**: 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.*

***Key findings (Q19)**:*

- ***Extreme weather, nuclear and radiological risks, then floods** are the top 3 **key risks** reported by almost all Member States and Participating States. However, only half reported that **early warning systems (EWS)** were in place for these risks.*
- *For other risks, fewer than a quarter of the countries reported having EWS available, showing possible implementation or reporting gaps.*
- ***Natural hazards** are hazards for which early warning systems are reported by most countries, whilst for fewer countries report on early warning systems for man-made and technological risks.*
- *About one third of countries report that their early warning systems are connected to **European and global** systems, and few report on **cross-border systems** connected to other EU countries.*
- *Some countries referred to future developments of early warning systems, developed on specific risks and suggest further work on **risks that are increasing due to climate change**.*

Some 26 Member States and Participating States reply to the question. Most countries indicate that systems were in place for early hazard detection for key risks, but less than half indicted that they have forecast methodologies integrated into their systems. Only a few indicated that they used Copernicus services. Less than half indicate that their national system is connected to early warning systems(EWS) at European or global level. One fourth indicated that they share their EWS with other countries. One fifth of reported information on links between the EWS authorities and between stakeholders and authorities. Of the 9 countries that provided no substantial information, one replies that the question cannot be answered at the national level, and that the answer varied by key risk, and by sectors concerned.

[226] OJ L288, 6.11.2007, p.27. The **Floods Directive** requires Member States to take past flood events into account in the cyclical implementation of the Directive. This entails providing a description past floods with significant adverse consequences. Such information on past flood events that took place in the past 6 years needs to be recorded and reported to the Commission**.**

[227] https://drmkc.jrc.ec.europa.eu/risk-data-hub.

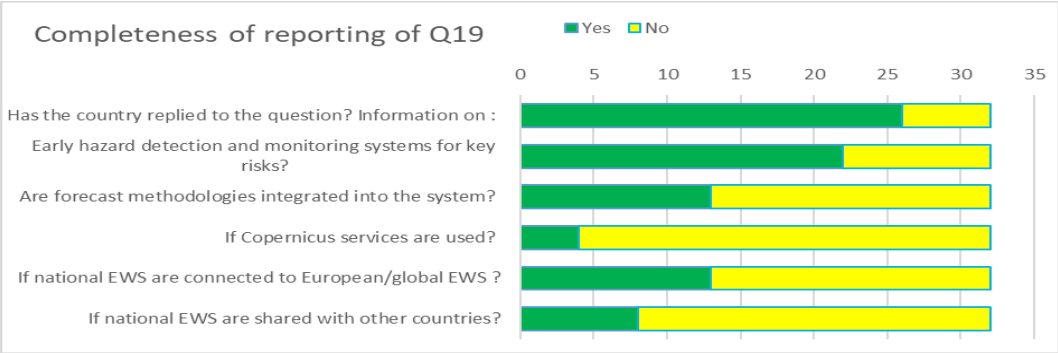


***Figure 42. Number of countries that replied to Q19**. Source: 2020 DRM summary reports (Q19).*

6.6.1 Key risks for which early warning systems are reported

Extreme weather, nuclear and radiological risks, then floods were the top 3 **risks** that were reported to be covered by early warning systems (EWS). But only about half of the countries that identified these risks as important, also reported having early warning systems in place. For instance, 29 countries identified extreme weather as a key risk, but only 15 reported that EWS are available for this hazard (52%).

For other risks, fewer than a quarter of countries reported having an early warning system available. And while 44 % of the countries that identified tsunamis as a key risk, only 4 reported having tsunami EWS in place. The gap between identified risks and a warning system in place could either be due to under-reporting or an implementation gap.

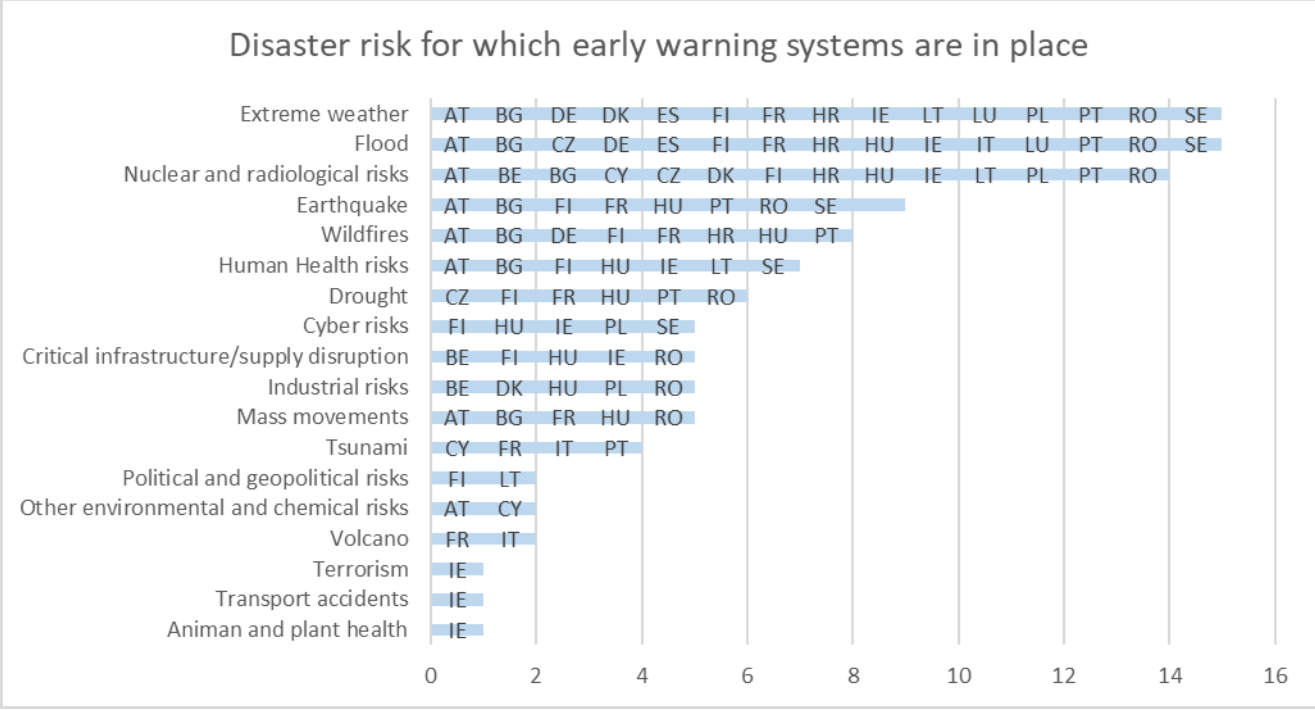


Figure 43. *Countries that reported having an early warning systems are in place for the key risks reported. Source: 2020 DRM Summary reports (Q19).*

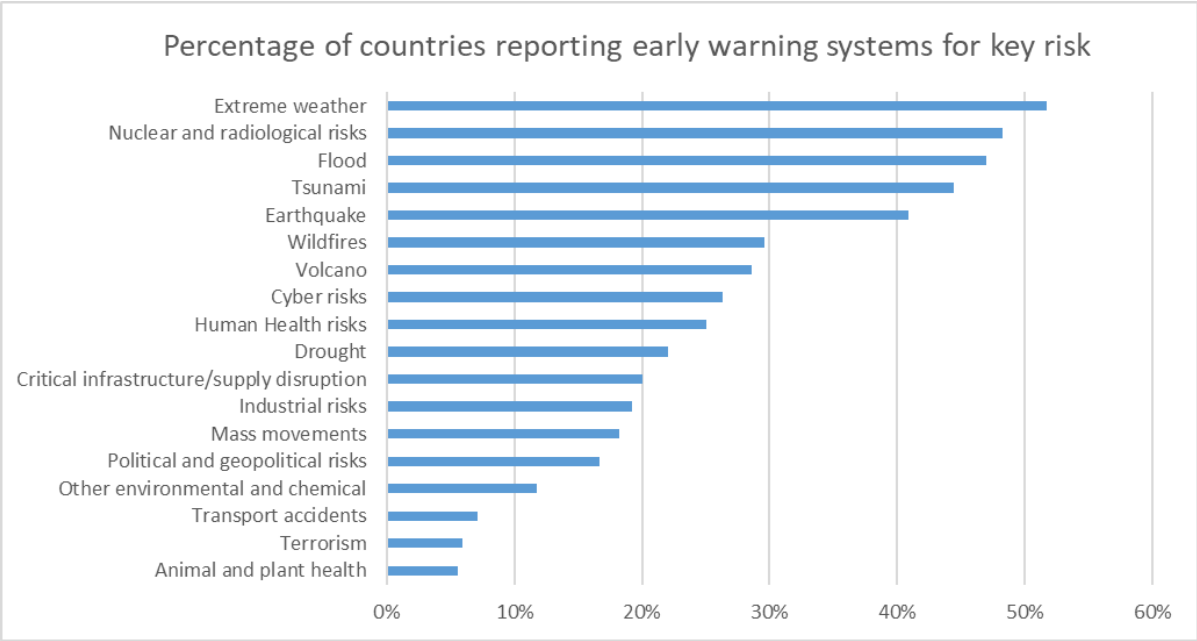


Figure 44. *Percentage of countries reporting a specific risk in Q3, and who also reported having an EWS in place for that risk. Source: 2020 DRM Summary reports (Q3, Q19).*

6.6.2 Entities involved in early warning systems, including consistent disaster tracking

Multiple entities are responsible for early warning systems. **Public authorities** are generally responsible for monitoring, detecting and forecasting risks and for alerting the population (see Q20). A wide range of **specialised institutes and agencies** specialising on specific risks are involved in the systems, for instance hydrometeorological institutes (in 10 countries), geophysics and seismology institutes (5), water administration entities (4 countries), and public health entities (4), alongside the civil protection authorities.

Early warning systems also **require 24/7 systems** able to detect threats and transmit warnings at all times. However only three countries (Denmark, Finland, and Poland) reported having such monitoring bodies.

Entities in volved in early warning systems	Countries	Numbers
Hydrometeorological institutes	CZ, BG, DK, ES, FI, HU, IE, RO, SE, TR	10
Institutes of Geophysics and seismology	BG, ES, HU, IT, RS, SE	6
Relevant departments and ministries	CY, FI, IE, LV, RS	5
Water administration entities	BG, ES, PT, RO	4
Public health entities	IE, PT, RS, SE	4
Civil protection entities	DK, IT, SE, SK	4
Forestry directorates	BG, IT, TR	3
Nuclear regulatory agencies	BG, RS, TR	3
Cyber security centres	FI, IE, SE	3
Critical infrastructure entities	RS, TR	2
Police	DK, IE	2
Atmosphere and sea institute	PT	1
National environmental protection agencies	IE	1

Committees and agencies on situation on supply	FI	1
Government situation centres	FI	1
National security service	HU	1
National directorate for fire and emergency management	IE	1
Information alert centre	RO	1
Inspectorate for emergency situations	RO	1
International organisations for cross-border activities	RS	1
Regions and autonomous provinces	IT	1

Table 8. *Overview of the EWS entities involved in early warning systems as reported by countries. Source: 2020 DRM summary reports (Q19).*

For certain technological risks (nuclear/radiological risk and industrial accident) the e**conomic operators** are responsible for continuous monitoring and alerts in 5 countries.

6.6.3 Connection between early warning systems (including international cooperation)

About one third (13) of countries reported that their early warning system (EWS) systems are connected to European (12) and to global (9) systems, such as the European Flood awareness system (EFAS), the North-East Atlantic and Mediterranean Tsunami Warning System (NEAMTWS) and the Global Disaster Alert and Coordination System (GDACS). Other countries reported that they intended to establish such links (Hungary).

The most commonly mentioned global entity referred to by 5 countries is the World Health Organisation (WHO).

A few countries[228] reported that they have EWS that are connected to other countries with cross-border systems, such as Bulgaria/Romania for earthquake warnings and Spain/Portugal inter-connected warnings for floods, fires and dam breaks. Only 3 countries **(**France, Sweden, Türkiye) referred to the use of Copernicus-related services.

Type of risks	European EWS	International EWS
Meteorological	Meteoalarm (AT**)** European Organisation for the Exploitation of Meteorological Satellites **(**EUMETSAT) (TR)	Global Disaster Alert Coordination System (GDACS) (FR)
Geological		Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North-eastern Atlantic (NEAMTWS) (Tsunamis) (CY) USGS Real Time Earthquake Monitoring (TR)
Hydrological	European Flood Awareness system (FR, HU) **AEWS –** Accident Emergency Warning System of the Danube River Basin) (HU, RO) including for pollution.	Global flood awareness system (FR, TR); GDACS (FR)
Climatological	EFFIS – European Forest Fire Information System (FR, HU) European and global drought observatories (FR) EDO – European Drought Observatory (HU)	GDACS (FR) NASA FIRMS Global Fire Information System (TR) Global forest fires information systems (FR)
Biological (health)	European Centre for Disease Prevention and Control (ECDPC) (HU)	World Health Organisation (WHO) (CY, FI, IE, HU, SE)

[228] BG, FI, HU, IE, RO.

	World Organisation for Animal Health (WOAH) (IE) Early warning and Response system (EWRS) for infectious diseases (FI, HU, IE) EUROMOMO (mortality monitoring) (IE)	
Industrial accidents	Directive (EU) 2018/1972 (NIS Directive) in relation to the obligation to provide EU MS, the Commission, and the European Cybersecurity Agency (ENISA) with regular information on cyber incidents in the provision of services (repealed as of 18.10.2024).[229] (SE) Pan-European aviation safety regulatory system (IE) Emergency Response Coordination Centre (ERCC) (CY) – marine pollution	Industrial Accident Notification (IAN) (RO)
Radiation	European Community Urgent Radiological Information Exchange (ECURIE) (CY, HU, PT) Euratom[230] (FI) ERCC (CY)	International Atomic Energy Agency (IAEA) (CY, PT)
Food and feed	European Union Rapid Alert system for Food and Feed (RASFF) (BG)	
Supply disruptions	Alerts on **gas disruptions** are notified to the European Commission and neighbouring countries as per Article 11(1) of the Regulation 2017/1938[231] (BE)	
General EU level	ERCC (CY) UCPM/CECIS (MK, anticipated for end 2021) Galileo (FR) ARISTOTLE system (IT) Copernicus Emergency Management Service Mapping (SE) Common Emergency Communication and Information System (CECIS) (IE)	GDACS (FR)

Table 9. *Overview of the European and International EWS mentioned by countries. Source : 2020 DRM summary reports (Q19).*

[229] OJ L 194, 19.7.2016, p. 1
[230] OJ C 203, 7.6.2016, p.1.
[231] OJ L 280, 28.10.2017, p. 1–56

7. MEASURES TO RAISE RISK AWARENESS AND PRIORITY PREVENTION AND PREPAREDNESS MEASURES (ARTICLE 6(1)(B) AND (D))

7.1 Risk information and communication to raise public awareness (Q8 and Q20)

***Question 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.*

***Question 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.**

***Key findings (Q8 and Q20)**:*

- *Over half of the countries reported using **risk awareness campaign activities, communication channels and instruments** to inform citizens.*
- *Over half of the countries make **their national risk assessments (NRA) publicly available** on the websites of civil protection authorities, Ministry of Interior websites, or on national platforms for disaster risk Reduction.*
- *About half of the countries have **public warning systems** (sirens, mobile phone applications and social media) in place, and a couple of countries involve the population in **training and exercises**.*
- ***Emergency plans** are governed by **local, regional, and central levels of disaster management**, as are the emergency plans drawn up for specific risks. **Floods and forest fire awareness** campaigns are amongst the **disaster risks specific campaigns** most often referred to.*
- *Almost a third of the countries explicitly refer to **communication strategies and plans** to support the dissemination of national risk assessments.*
- *Only two countries reported on specific risk awareness actions to support **vulnerable groups**, indicating room for improvement.*

About two thirds of Member States and Participating States provide information on the role of communicating the result of risk assessments as a step in the general task to raise risk awareness among the public and to engage stakeholders (Q8).

Although (24) countries replied to Q20 on risk information and communication to raise public awareness, indicating a variety of activities, the information provided is often fragmented and details are not given. For instance, about half of the countries (17) provide information on the media used to reach out to the citizens, but only a few (6) provide information on whether communication needs of highly vulnerable risk groups' are taken into account.

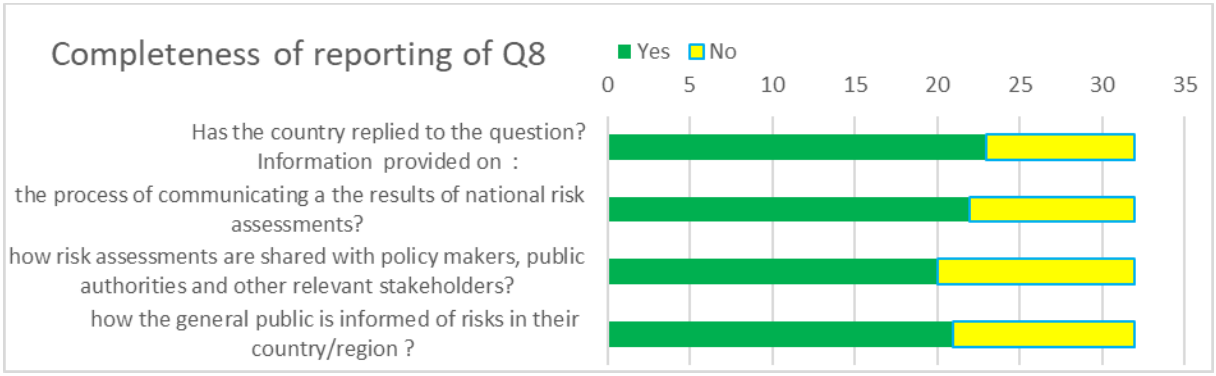


***Figure 45. Number of countries that replied to Q8**. Source: 2020 DRM summary reports (Q8).*

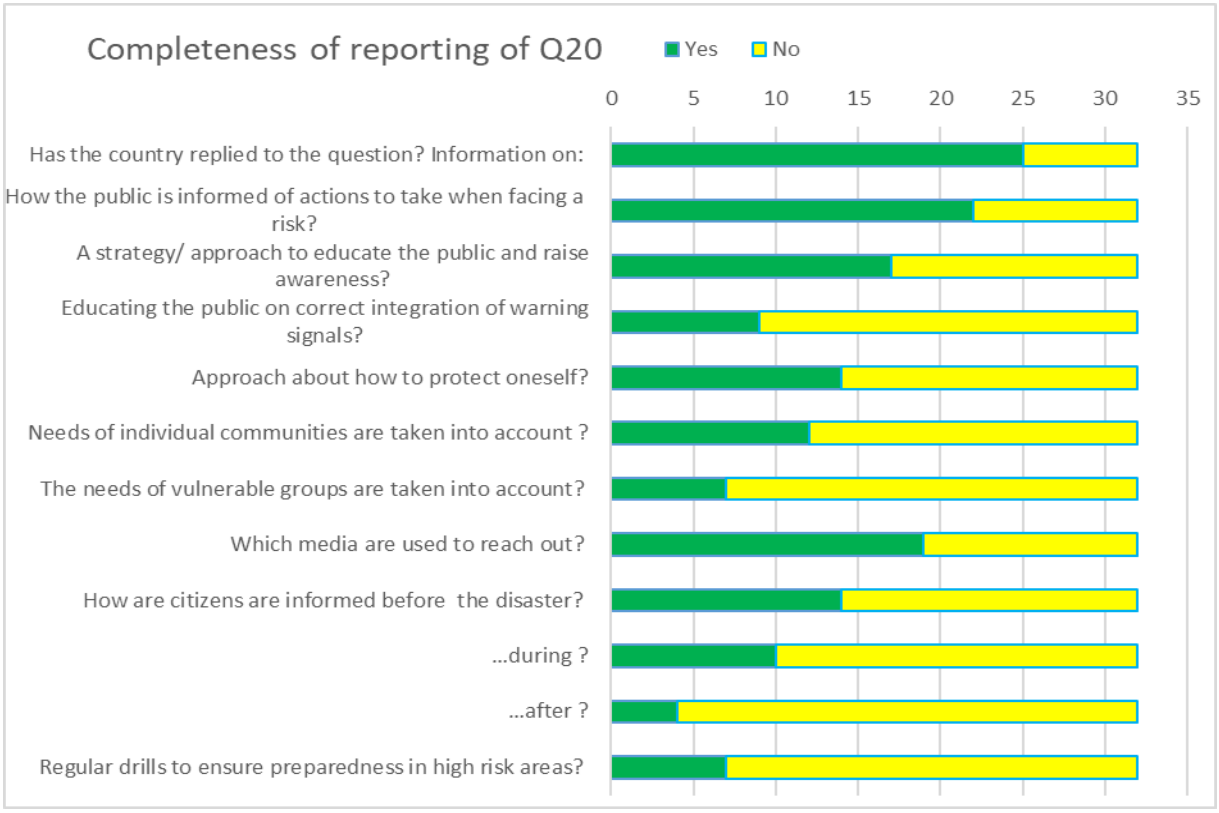


***Figure 46. Number of countries that replied to Q20.** Source: 2020 DRM Summary reports.*

7.1.1 Communication on risk assessments to the general public (Q8)

Half of the countries (16)[232] reported a transparent approach and make their **national risk assessments (NRA) publicly available** on the websites of civil protection authorities, Ministry of Interior websites, or on dedicated national platforms for disaster risk reduction. The results of risk assessments are made available to policymakers, inter-ministerial bodies with

[232] AT, BG, CY, DK, EE, EL, FI, HR, IE, IT, LT, LU, LV, NO, PT, TR.

representatives from all ministries, and to the public by the respective authorities, usually online or using other communication tools (e.g. publicity campaigns, leaflets). In some countries, risk maps are also available to the public in certain cases (as reported in relation to question 6)[233].

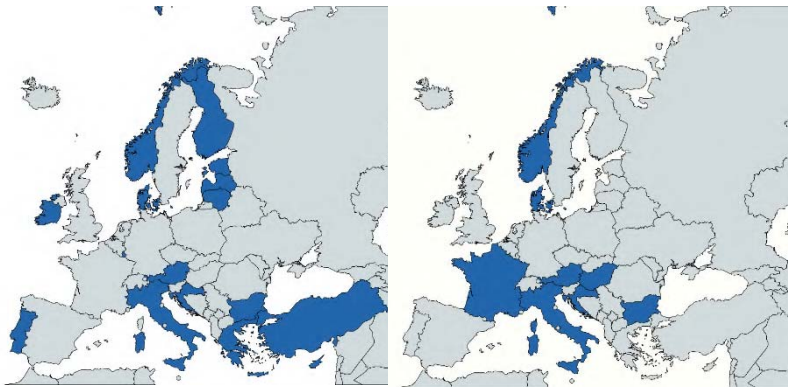


Figure 47. *Map of UCPM countries reporting publicly available risk assessments (on the left) and communication strategies and plans. Source: 2020 DRM summary reports (Q2, Q8 and Q20).*

Only 8 countries[234] referred explicitly to **communication strategies and plans** to support the publicise the national risk assessments, with results made available online, on national TV broadcasts, seminars, and conferences, as well as on social media profiles.

7.1.2 Communication on risk assessment to policymakers and other relevant stakeholders (Q8 and Q11)

Only 4 countries (Austria, Croatia, Latvia, Portugal) provided details (in response to question 8) on the **involvement of other policy makers and stakeholders in the assessment of risks** via national platforms for disaster risk reduction or online fora. Despite public consultation being a requirement for all EU Member States in the production of flood risk management plans and river basin management plans under EU water legislation for instance, this is not referred to in national reports, possibly indicating under-reporting.

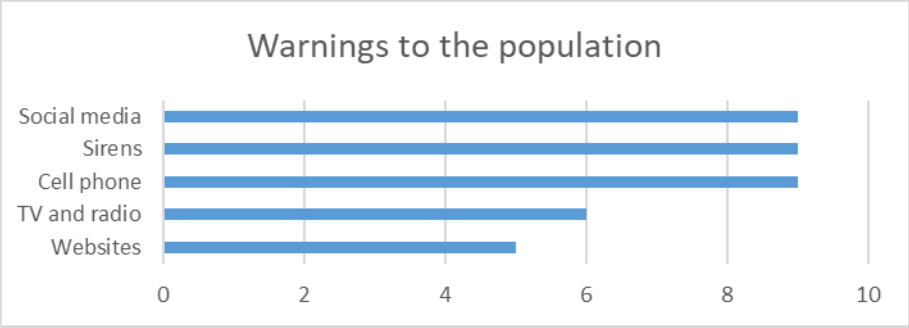
In Spain, citizens living in particularly disaster-prone areas are entitled to receive additional information on the risks they are exposed to. One country also pointed out that some of the information related to risk assessment is sensitive and therefore distribution can be restricted.

7.1.3 Early warning communication and alerting the population (Q20)

Some 17 countries indicated having **public warning systems** in place in line with the arrangements set out in their legislation. They provide for public warnings via sirens[235], mobile

[233] BG, CY, FR, PT, RO.
[234] AT, BG, DK, FR, HR, HU, IT, NO.
[235] CY, CZ, DE, DK, FI, FR, PL, RO, TR.

phone applications[236], and social media[237]. In some cases[238], emergency warnings are also published on the Emergency Response Centre Administration website or on the 112 application. In some countries[239], television and radio broadcasters have to announce when a state of crisis is declared and inform the public of related crisis-response measures. In the event of an

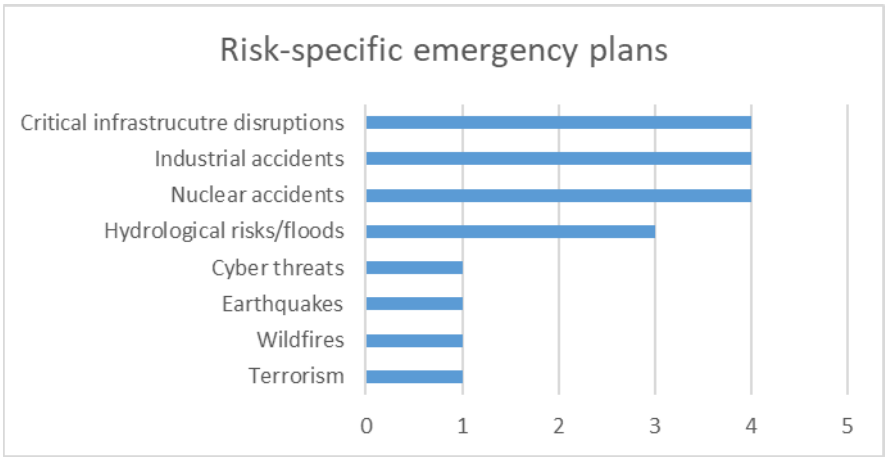


emergency, early warning messages are sent to public authorities and the public via the Emergency Warning System app and public alarm sirens.

Figure 48. *Methods used to warn the population reported by countries. Source: 2020 DRM Summary reports (Q19 and Q20).*

7.1.4 Emergency communication procedures and emergency plans (Q20)

Emergency plans are governed by **local, regional and central disaster management bodies**. Countries draw up emergency plans taking a risk-based approach: nuclear and radiological risk[240], industrial accidents[241], energy supply disruption risks[242], hydrologic risks[243], terrorism



[236] CY, CZ, DE, DK, EE, FI, LU, PL, RO.
[237] AT, EE, FI, LT, LU, PL, RO, SK, TR.
[238] DK, MK, FI, HR, RS.
[239] CZ, DE, DK, FI, RO, TR.
[240] AT, BE, BG, CZ.
[241] BG, DE, EE, EL.
[242] AT, CY, CZ, DE.
[243] AT, BG, DE.

(Bulgaria), forest fires (Germany), seismic risk (Bulgaria), critical infrastructure (Cyprus), ICT/cyber incidents and critical infrastructure (Denmark).

Figure 49. *Number of countries reporting risk-specific emergency plans. Source: 2020 DRM Summary reports (Q19 and Q20).*

Some countries[244] indicated how contingency planning exercises are organised to share procedures on how to cope with unexpected emergencies.

Only 9 countries[245] referred to the **involvement of the public in trainings and exercises** to ensure that communities at risk understand early warning signals and that they are aware of the steps they need to take to protect themselves. In those that did involve the public via local authorities and mayors, those actors are responsible for informing them and preparing them according to standard procedure.

7.1.5 Risk awareness communication activities: Online platforms and other means of communication (Q20)

Most countries (24) use a range of communication channels to communicate with the public: websites[246], training and exercises[247], TV[248] and radio advertising[249], social media[250], leaflets, brochures and other printed materials[251], national campaigns[252], text messages, mobile phones and applications[253], courses, seminars and workshops[254], press and printed media[255], publications (Portugal, Romania), excursions, fairs and visits (Czechia, Spain) and information centres and contact points (Italy, Romania). Some countries refer to other channels too: press conferences (Ireland), school materials (Spain), animated films, DVDs and advertisements (Czechia).

Online communication is very widely used. Some civil protection authorities integrate information on disaster risks on their websites[256], while others[257] have created specific disaster risk portals that act as a single point of contact for disaster risk in the country, covering a range of disaster risks.

Two countries (Austria and Belgium) outline specific practices to ensure that information and disaster communication is provided promptly to relevant stakeholders and the public.

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[244] BE, BG, CY, CZ, DK, EE, FI, NO, PT.
[245] AT, BG, CY, CZ, DE, IE, IT, RO, TR.
[246] AT, BE, BG, CY, CZ, DE, DK, ES, HR, HU, IE, IT, LU, PL, PT, RO, SI.
[247] AT, BG, CY, CZ, DE, IT, PT, RO, TR.
[248] BG, CY, CZ, DE, IE, PT, RO.
[249] BG, CY, CZ, DE, IE, PT, RO.
[250] CY, DK, ES, HU, IE, IT, PL.
[251] AT, BG, CZ, IE.
[252] BE, CZ, IT, PT, RO.
[253] CY, DE, PL, PT.
[254] BG, CZ, HR, PT, RO.
[255] ES, IE, RO.
[256] DK, CY, NO.
[257] IT, LU, BE.

Printed material is widely used to familiarise citizens with prevention and preparedness needs, including: publications; awareness-raising posters and pamphlets, educational materials, and short films on a range of topics for the purpose of consciously preparing and informing the public, targeting different age groups. At the local level, information is also provided at special events and opportunities for civic participation.

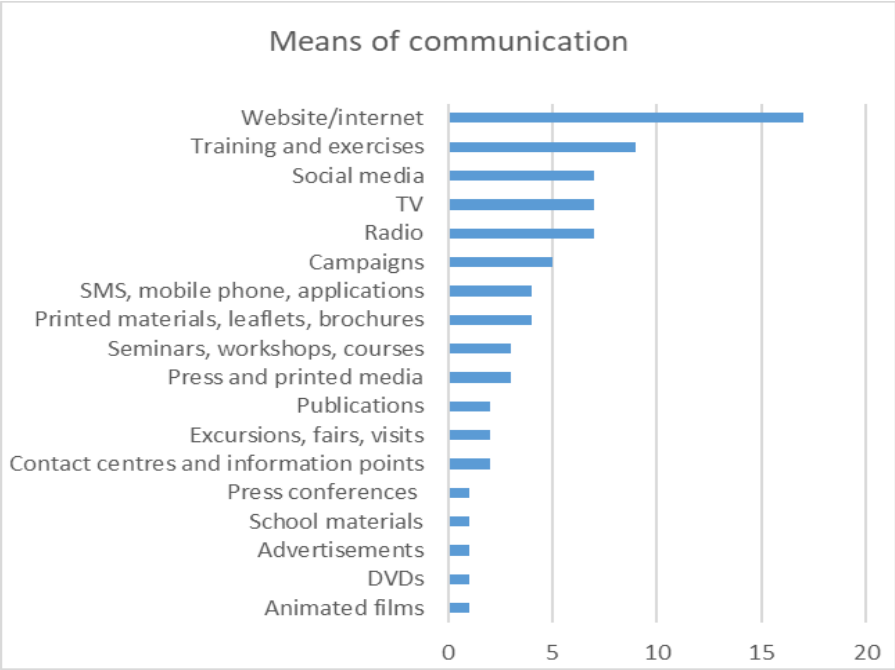


Figure 50. *Number of countries reporting means to communicate and inform on risks per type. Source: 2020 DRM summary reports (Q8 and Q20).*

7.1.6 Risk awareness communication activities: Risk awareness campaigns (Q20)

Over half of the countries[258] referred to risk awareness campaign activities that use a range of communication channels and instruments to inform the public. **Social media** use is explicitly mentioned by some countries[259].

Floods and forest fire awareness campaigns are amongst the main **disaster risk-specific campaigns** referred to.[260] Some countries promote **multi-risk awareness communication** activity via a comprehensive web portal (Italy, Belgium, Czechia). Some have developed **guidelines and other forms of communication to promote preparedness** (Finland, Ireland, Norway, Sweden, Serbia, Türkiye).

Some countries carry out **transboundary risk awareness campaigns**, for instance in the Mediterranean along with neighbourhood countries.

[258] BE, BG, CY, CZ, DK, EE, ES, FI, HR, HU, IT, NO, PT, SE, SI, SK, TR.
[259] CY, DK, EE, ES, HU, IE, ME.
[260] BG, ES, HR, PT.

7.1.7 Risk awareness communication initiatives in schools (Q20)

Some 11 countries reported disaster risk awareness and education in schools for kindergarten, elementary and high school children. Italy has brought disaster risk awareness and civil protection education in all types and level schools under a legislative act. Denmark are organising courses on preparedness planning at university level. Other examples include involving civil protection authorities in producing guides (Italy, Spain), training teachers and educators (Portugal), and collaboration with universities and carrying out research (Spain).

7.1.8 Specific care and attention for vulnerable groups

Only 6 countries[261] referred to **vulnerable groups** in the context of specific disaster risks, such as pandemics, heatwaves, floods and migration. Countries pointed out that it is essential to set out guidelines and to improve care for people with disabilities and other vulnerable groups[262], to provide for additional medical care and hospitalisation facilities,[263] and to draw up specific evacuation plans[264]. Only 2 countries[265] reported carrying out **specific risk awareness actions** directed to **vulnerable groups**.

7.2 Priority prevention and preparedness measures for key risks with cross-border impacts (Q21 and Q22) and risk with high impact but low probability (Q23, Q24)

Question 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:*

Question 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.

Question 23: Low probability risks with a high impact: *List any low probability risks with a high impact.*

Where appropriate:

Question 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.

Key findings (Q21-Q24)*:*

- *All countries reported **cross-border risks** and most countries report **high impact low probability risks**. However, **not all countries reporting such risks reported on priority measures** to manage them.*
- *The top three identified **cross-border risks** (nuclear accidents, floods and wildfires) are also the main risks for which measures are reported. Several countries identify **high impact low probability risks** (human health risks,*

[261] AT, BG, CZ, ES, DE, LT.
[262] ES.
[263] BG
[264] LT, DE.
[265] AT, CZ.

*extreme weather, mass migration) without reporting any measures to manage the risks, indicating possible **reporting and implementation gaps.***

- *Most of the measures reported by risk concern in equal part **prevention** and **preparedness**, however, preparedness is the only disaster risk management (DRM) phase tackled for all of the identified risks.*
- *Countries mostly report **non-structural measures**, particularly education and trainings, generic early warning systems, and raising public awareness. **Structural measures** remain more limited, predominantly cover natural risks (particularly floods), and they are more geared to prevention than preparedness.*
- *Countries provide **limited information on the authorities responsible for the measures**, **implementation timelines and funding sources**, including on use of EU funding. This could be a case of under-reporting.*

While all countries reported cross-border risks and most reported high-impact low-probability (HILP) risks, about two thirds report information on related prevention and preparedness measures to manage these risks. Countries that followed the reporting guidelines have reported measures to a larger extent.

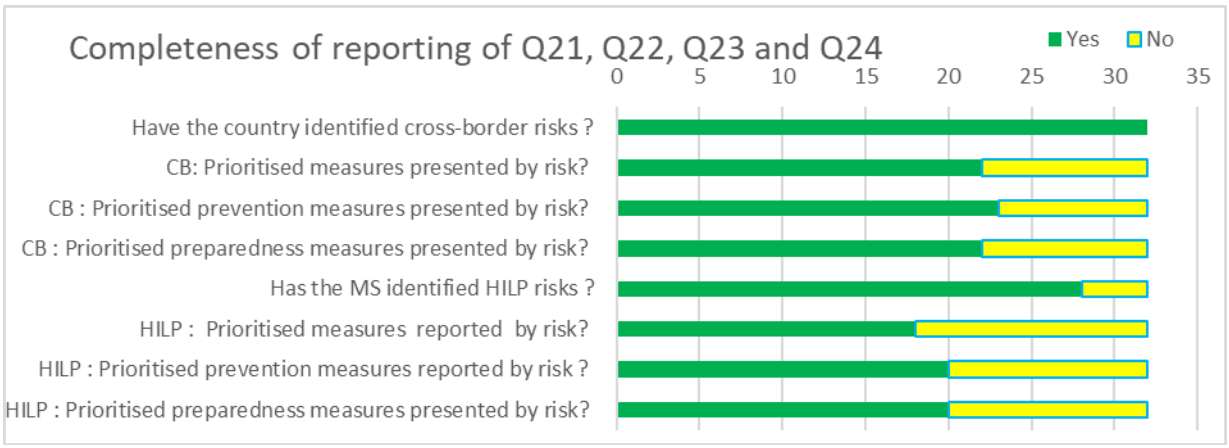


***Figure 51. Number of countries that replied to Q21-Q24**. Some reports included only partial information, which is further explored below. Source: 2020 DRM summary reports (Q21, Q22, Q23 and -Q24).*

7.2.1 Findings on priority measures

Certain key risks are considered **both as a cross-border risk** and a **high impact low probability (**HILP) risk. The top three cross-border risks identified (**nuclear accidents, floods and wildfires**) are also the risks for which measures are reported to the highest degree.

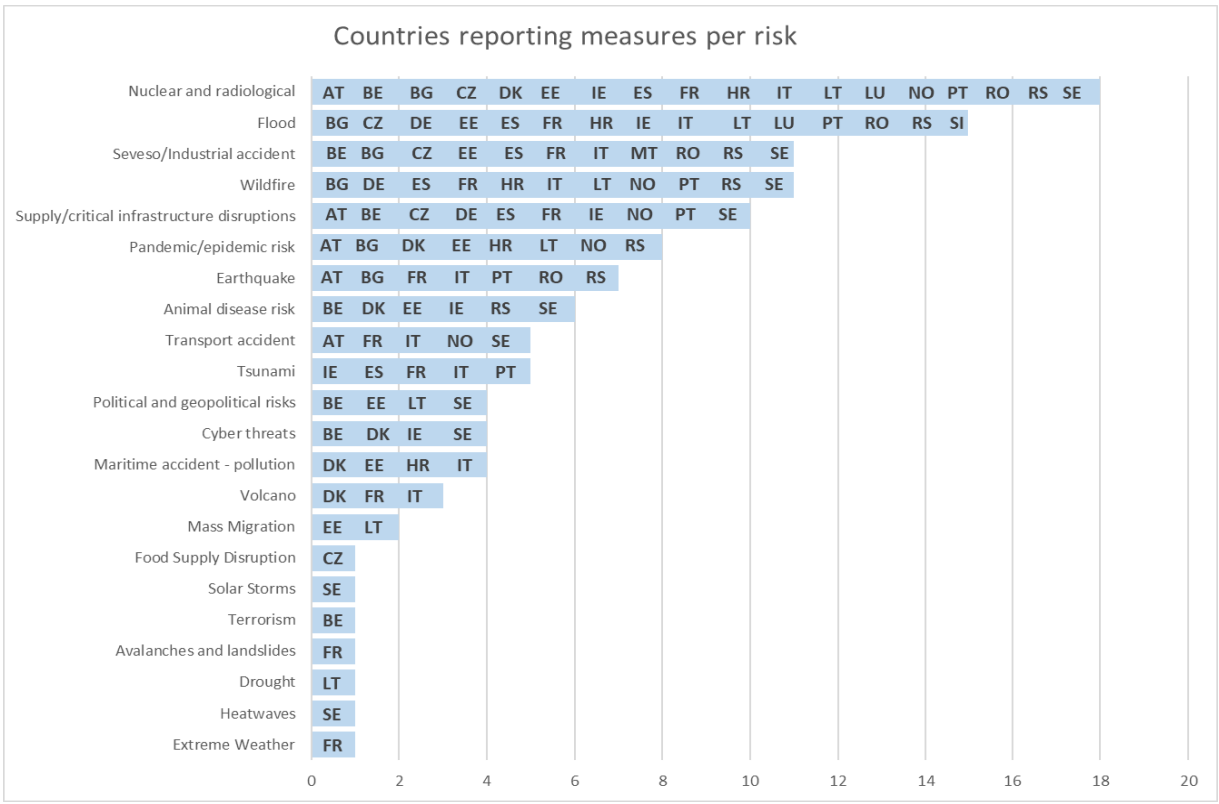


Figure 52. *Number of countries considering a specific risk as cross-border and/or HILP risks. Source: 2020 DRM Summary reports (Q3).*[266]

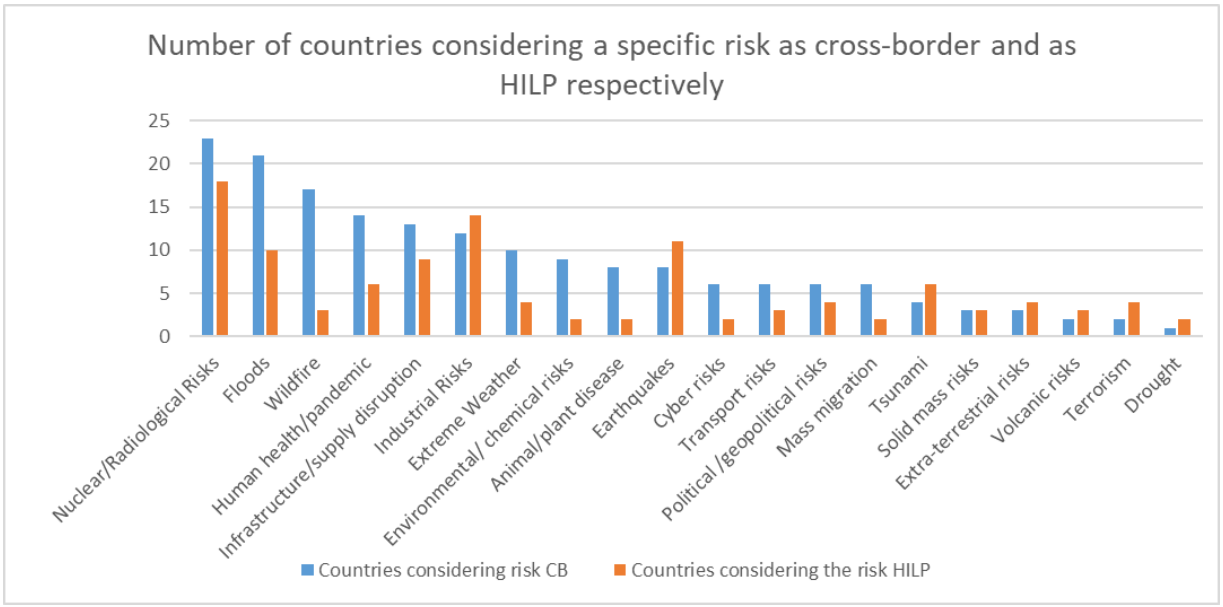


Figure 53. *Number of countries categorising a specific risk as cross-border(CB) and high-impact lo-probability (HILP) respectively. Source: 2020 DRM summary reports (Q 22, Q24 and Q13).*

[266] The measures reported and analysed address both cross-border cooperation measures and measures taken at national level to limit consequences on the own territory and in neighbouring countries and increase disaster resilience in the own territory.

However, most countries did not report measures for all cross-border risks they have identified. Several countries identified HILP risks but have **not reported any measures** on such risks.

Figure 54. *Number of risks (cross-border and HILP combined) tackled by specific countries' measures. Only countries that reported measures for specific risks are included. Source: 2020 DRM summary reports (Q22 and Q24).*

Most countries (21) reported prevention and preparedness measures. One third of the countries did not report such measures. There is a high correlation between the countries that did not use the reporting guidelines and those that did not report measures. Most of the measures reported by risk concern **in equal part prevention and preparedness**. However, preparedness is the only Disaster risk management (DRM) phase tackled for all identified risks.

Few countries provide information on the **prioritisation method** applied for selected measures, such as risk-specific prioritisation studies (Sweden). Only a few analysed the **effectiveness of measures** or the **capacity gaps** and what is needed to improve the set of DRM measures. For instance, capacity and capability gaps for each key risk in terms of infrastructure and equipment (Lithuania).

7.2.2 Reporting of priority measures for cross-border and high-impact and low-probability risks

Nuclear accidents, floods and industrial accidents, which are identified as the highest cross-border risks are also the risks with the highest number of measures. Just over half of the countries reported measures for most risks. This could be either due to under-reporting, or due to the fact that measures are not planned or implemented.

The share of countries reporting measures for **high impact low probability** (HILP) risks is lower than cross-border risks, although fewer countries identify risks as HILP in the first place. Several countries identified HILP risks but did not report any measures to manage these risks. These include human health risks, extreme weather, other environmental and chemical risks, mass migration, drought, cyber risks, and animal and plant diseases. Again, these discrepancies could either be due to under-reporting, or to the fact that measures are not planned or implemented.

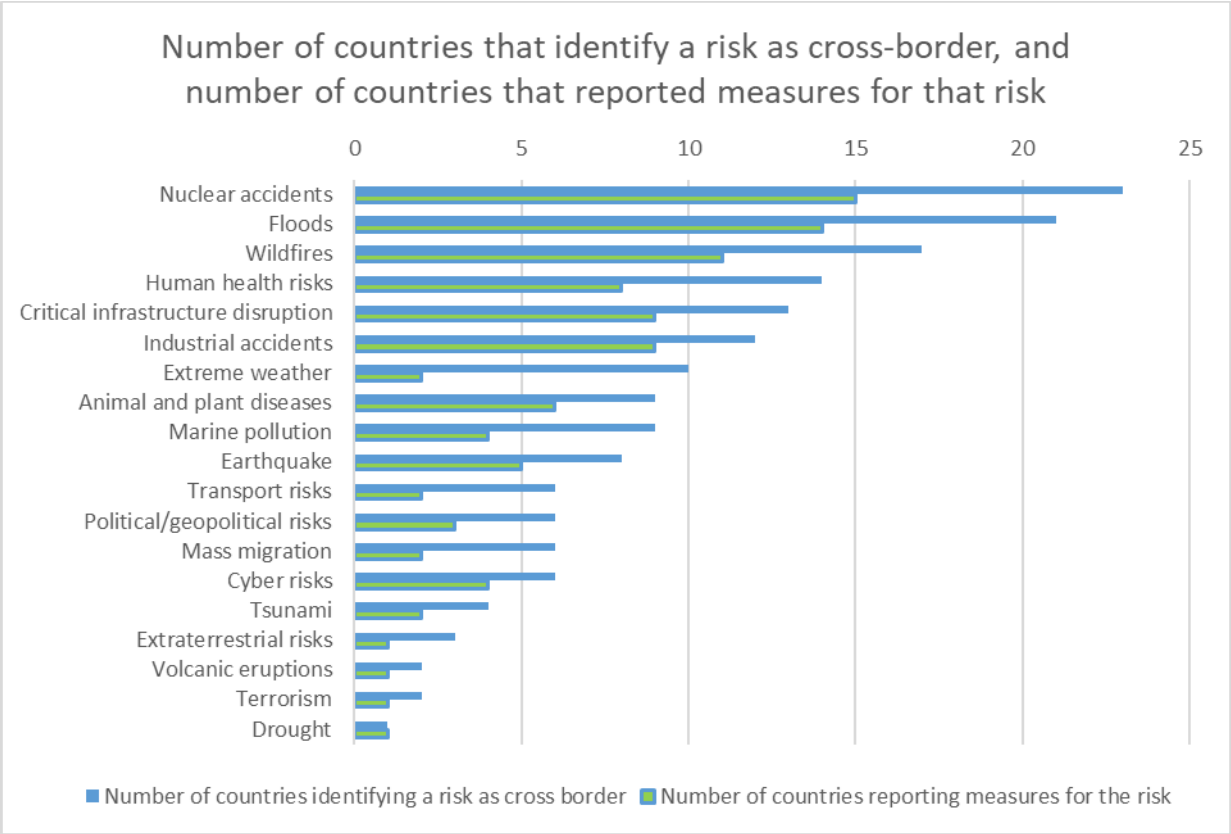


Figure 55. *Number of countries that identified a specific risk as cross-border risk and that also reported measures to manage that specific risk. Source: 2020 DRM Summary reports (Q3, Q21, Q22, Q23 and Q24).*

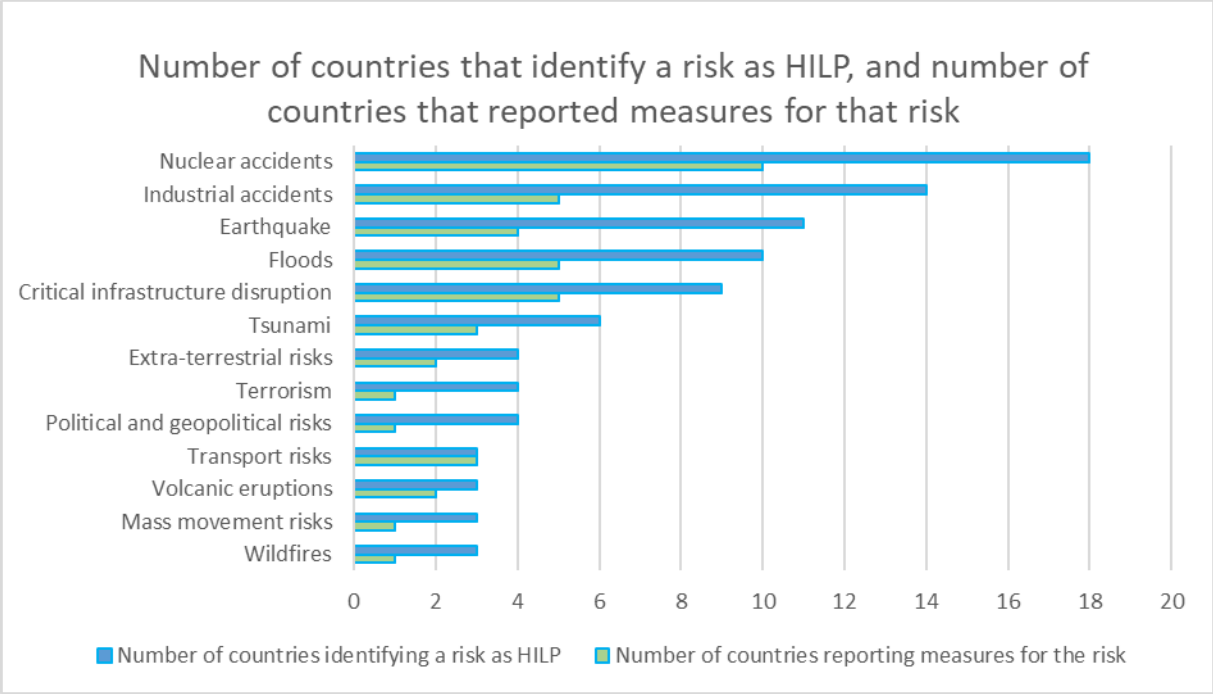


Figure 56. *Number of countries that identified a specific risk as a high-impact low-probability (HILP) risk and that also reported measures to manage that specific risk. Source: 2020 DRM Summary reports (Q3, Q21, Q22, Q23 and Q24).*

7.2.3 Reporting of prevention measures compared to preparedness measures

Most of the measures presented by risk cover **both prevention and preparedness**, with less reporting of prevention measures. In addition, preparedness is the only disaster risk management (DRM) phase that is addressed for all of the identified risks. Most countries that reported measures report both prevention and preparedness measures.

In addition, some measures also cover **risk assessment** and **response**, with risk assessments predominantly reported for floods and earthquakes, and response measures mainly reported for nuclear accidents, industrial accidents, and wildfires.

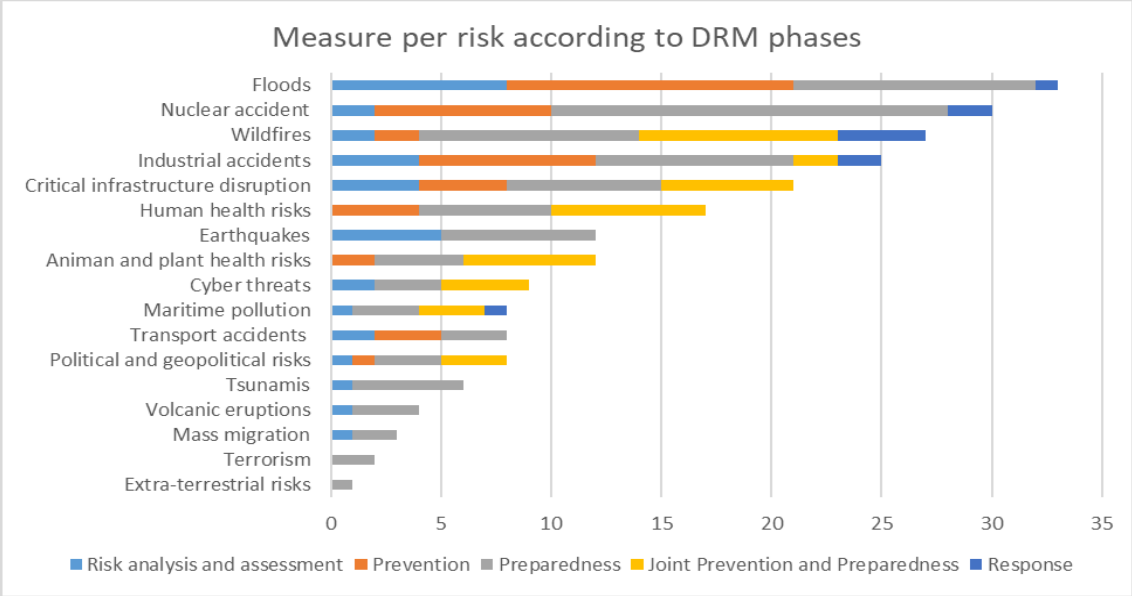


Figure 57. *Number of countries reporting measures for different phases of disaster risk management for each identified cross-border and HILP risk. Several countries reported measures that relate to more than one phase. Source: 2020 DRM Summary reports (Q21, Q22, Q23, Q24).*

7.2.4 Reporting of structural and non-structural measures[267]

To manage each of the risks identified, countries **mostly reported non-structural measures**, particularly education and trainings, generic early warning systems, and raising public awareness to. Fewer countries reported **structural measures,** and they mainly cover natural risks (particularly floods) and are more geared to prevention than preparedness.

[267] There is not always a clear division between structural and non-structural measures; some structural elements serve non-structural measures and vice versa. For example, early warning systems require physical infrastructure, assets and equipment, but early warnings are per se a non-structural measure because their main aim is to alert the public and authorities.

There are three main types of **reported non-structural measures**: training and education involving the public and the responsible authorities[268]; early warning systems and related activities[269]; and public awareness raising. Most non-structural measures relate to preparedness, rather than prevention.

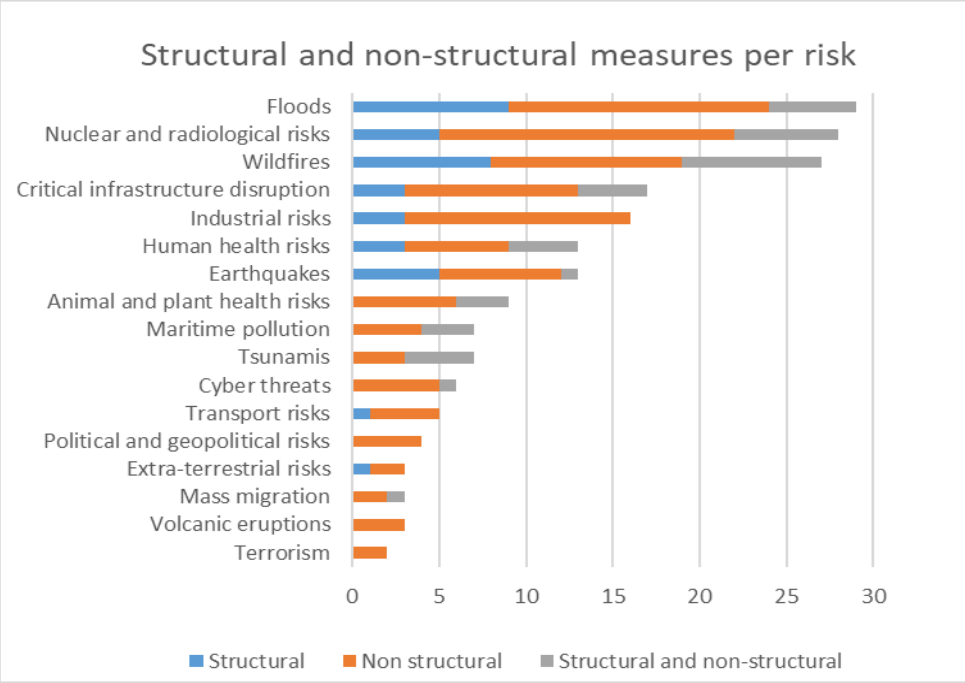
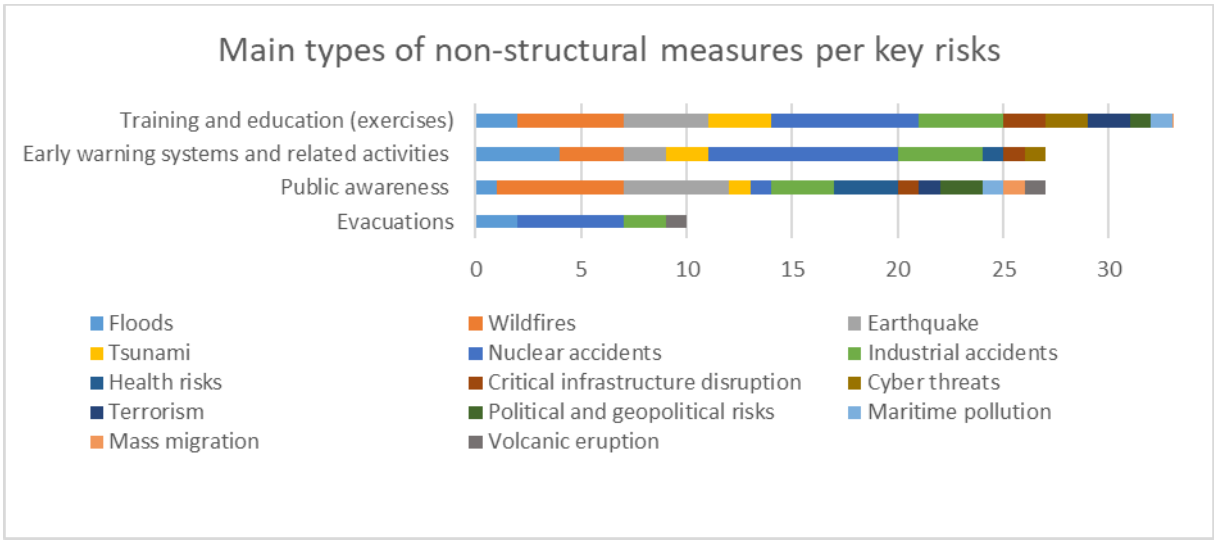


Figure 58. *Number of countries reporting structural, non-structural and measures that are both structural and non-structural components by type of risk. The category "structural and non-structural measures" means either that it cannot be distinguished or that a combination of the two has been reported. Source: 2020 DRM Summary reports (Q21, Q23, Q24, Q13).*



[268] AT, BE, BG, CZ, DE, DK, EE, ES, FR, HR, LT, NO, PT, RS, SE.
[269] BE, BG, CZ, DK, EE, FR, HR, IE, LT, PT, SI.

Figure 59. *Main type of non-structural measures identified by the number of countries reporting the measure, by key risk. Source: 2020 DRM summary reports (Q22, Q24).*

7.2.5 Reporting of authorities, timelines and funding arrangements for measures

Countries provide limited information on the authorities responsible for the measures, and most frequently do not report information on the implementation timelines and funding sources, including on the use of EU funding. This could be a case of under-reporting.

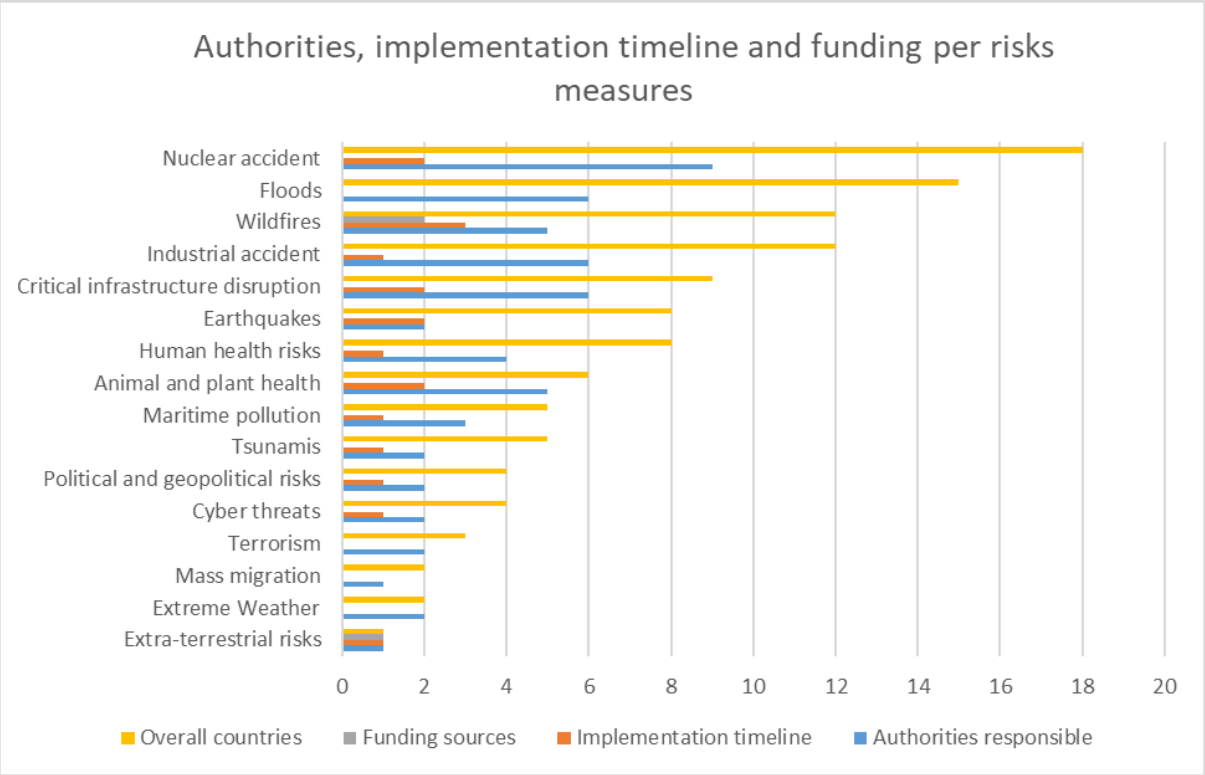


Figure 60. *Number of countries that report funding sources, implementation timeline and authorities responsible for each measures reported, compared to the number of countries (overall countries) identifying cross-border or HILP risks (aggregated) and reporting measures tackling those risks. Source: 2020 DRM Summary reports (Q21, Q22, Q23 and- Q24).*

ANNEX 1: ABBREVIATIONS

Abbreviation	Explanation
AEWS	Accident Emergency Warning System of the Danube River Basin
AT	Austria
BE	Belgium
BG	Bulgaria
CBRN	Chemical, biological, radiological and nuclear
CCA	Climate Change Adaptation
CECIS	Common Emergency Communication and Information System
CEI	Central European Initiative
CER	Critical entities resilience
CID	European Critical Infrastructure Directive
CY	Cyprus
CZ	Czechia
DE	Germany
DK	Denmark
DRGs	Disaster Resilience Goals
DRM	Disaster Risk Management
DRMKC	Disaster Risk Management Knowledge Centre
DRMPD	Disaster Risk Management Planning Document
DRR	Disaster risk reduction
ECDC	European Centre for Disease Prevention and Control
ECIs	European Critical Infrastructures
ECURIE	European Community Urgent Radiological Information Exchange
EDO	European Drought Observatory
EE	Estonia
EFFIS	European Forest Fire Information System
EL	Greece
ENISA	European Union Agency for Cybersecurity
ERCC	Emergency Response Coordination Centre
ES	Spain
EU	European Union
EUMETSAT	European Organisation for the Exploitation of Meteorological Satellites
EWRS	Early Warning and Response System
EWS	Early warning system
FI	Finland
FR	France
GDACS	Global Disaster Alert and Coordination System
HILP	High impact low probability
HR	Croatia

HU	Hungary
IAEA	International Atomic Energy Agency
IAN	Industrial Accident Notification
ICDO	International Civil Defence Organization
IE	Ireland
INSARAG	International Search and Rescue Advisory Group (UN)
IPCC	Intergovernmental Panel on Climate Change
IT	Italy
LT	Lithuania
LU	Luxembourg
LV	Latvia
MD	The Republic of Moldova
ME	Montenegro
MK	North Macedonia
MS	Member state
MT	Malta
NAPs	National adaptation plans
NASs	National adaptation strategies
NATO	North-Atlantic Treaty Organisation
NIS	Network and Information Systems
NL	Netherlands
NO	Norway
NRA	National risk assessment
OCHA	UN Office for the Coordination of Humanitarian Affairs
OECD	Organisation for Economic Co-operation and Development
OSCE	Organisation for Security and Co-operation in Europe
PL	Poland
PPP	Prevention and preparedness projects
PRAF	Peer Review Assessment Framework
PS	Participating state
PT	Portugal
RAPs	Regional adaptation plans
RASFF	Rapid Alert System for Food and Feed
RDH	Risk Data Hub
RMC	Risk management capabilities
RMCA	Risk management capabilities assessment
RO	Romania
RS	Serbia
SAPs	Sectoral adaptation plans
SDGs	Sustainable Development Goals
SE	Sweden
SI	Slovenia
SK	Slovakia

SWD	Staff working document
TR	Türkiye
UCPM	Union Civil Protection Mechanism
UN	United Nations
UNDRR	United Nations Office for Disaster Risk Reduction
UNFCCC	UN Framework Convention on Climate Change
WHO	World Health Organisation
WOAH	World Organization for Animal Health