



Rialtas na hÉireann
Government of Ireland

A National Risk Assessment for Ireland 2020



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Section 1 – Introduction

1. Introduction

The *White Paper on Defence (2015)* sets out the Government's commitment to maintain, and further develop, a robust strategic emergency management framework nationally. A *White Paper on Defence Update 2019*¹ was published in December 2019, which included an updated security environment assessment. This update noted that perceptions of real as well as possible or assumed risks combine to create the overall picture. Capturing this very complex picture will always be challenging given that there will always be a degree of subjectivity involved and there will always be unknown future risks. What may seem remote today can quickly emerge in the form of strategic shocks that have system-wide or transnational impact.

The production of this *National Risk Assessment (NRA) for Ireland 2020* by the Government Task Force (GTF) on Emergency Planning is a constituent part of this work and of the adopted emergency management paradigm outlined in the *Strategic Emergency Management National Structures and Framework*² (SEM) approved by Government in July 2017.

In line with good international practice, the GTF has repeated this NRA process at approximately three yearly intervals so as to capture new and emerging risks, changing trends, cross-border dependencies, and the impact of climate change. This NRA 2020 will also help inform the broader strategic level *National Risk Assessment: Overview of Strategic Risks*³ process undertaken by the Department of the Taoiseach. This separate annual consultative process sets out a specific list of strategic risks, both financial and non-financial, which Ireland also faces.

This NRA for 2020 also meets the EU reporting requirements underlined in the Union Civil Protection Mechanism⁴. In the context of the Union Civil Protection Mechanism legislation the EU Commission was tasked, together with Member States, to develop *Reporting Guidelines on Disaster Risk Management*⁵. These EU guidelines provided a non-binding template to be addressed in the national risk summaries including the following elements:

- National risk assessment, focusing on key risks.
- Risk management capability assessment, focusing on key risks.
- Description of priority prevention and preparedness measures addressing key risks with cross-border impacts and, where appropriate, low probability risks with a high impact.
- In addition, the guidelines sought information, where possible, on climate impacts.
- It is the prerogative of the Member States to define key national risks.

These new elements proposed in the EU guidelines have been taken account of in the process to develop this new National Risk Assessment.

¹ Available at: <https://www.gov.ie/en/publication/a519cf-white-paper-on-defence-update-2019/>

² SEM Published at: <https://www.emergencyplanning.ie/en/news/strategic-emergency-management>

³ More details at: <https://www.gov.ie/en/press-release/e8f9f0-government-publishes-top-strategic-risks-facing-ireland-national-ris/#>

⁴ EU Civil Protection Mechanism: https://ec.europa.eu/echo/what/civil-protection/mechanism_en

⁵ Available at: [https://eur-lex.europa.eu/legal-content/GA/TXT/?uri=CELEX:52019XC1220\(01\)](https://eur-lex.europa.eu/legal-content/GA/TXT/?uri=CELEX:52019XC1220(01))

2. Why conduct a National Risk Assessment

Risk identification and assessment are accepted internationally as essential steps in the process of identifying the challenges that may have to be addressed by society, particularly in the context of emergency management. The rationale for conducting such an NRA, which was derived from inputs provided by experts across a wide range of sectors and disciplines, is essentially to address the following requirements that have been identified and tasked by the Government Task Force (GTF) on Emergency Planning on behalf of the Government to:

- Underpin the SEM implementation;
- Contribute to creating a shared understanding of the national level challenges to be addressed;
- Build on the significant inter-agency work completed at the local and regional levels under the provisions of the *Framework for Major Emergency Management*⁶;
- Ensure compliance with the EU reporting requirements as underlined in the Union Civil Protection Mechanism Legislative provisions⁷ (*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*);
- Allow for the comparison and prioritisation of risks against pre-agreed criteria;
- Provide the basis for establishing priorities with regard to risk mitigation;
- Establish the baseline for assessing future national risk management capabilities;
- Inform the development of enhanced national and community resilience.

3. The National Context

3.1. The Population

Ireland's population has continued to grow over recent years with a population estimated by the Central Statistics Office⁸ to be 4.98 million in April 2020. Some relevant statistics include:

- The population increased by 55,900 (+1.1%) in the year to April 2020 compared to an increase of 64,500 (+1.3%) in the year to April 2019
- While 85,400 persons immigrated to Ireland in the year to April 2020, 28,900 (33.8%) of these were estimated to be returning Irish nationals. This is the highest number of returning Irish nationals since 2007
- In April 2020, 644,400 non-Irish nationals were estimated to be resident in Ireland, accounting for 12.9% of the total population
- The population of Dublin in April 2020 was estimated to be almost 1.42 million persons, 28.5% of the total population
- In April 2020, 720,100 persons were estimated to be aged 65 years and over, reflecting an increase of 90,200 persons (+14.3%), in this age group since April 2016

⁶ National Steering Group on Major Emergency Management; A Framework for Major Emergency Management, 2006, available at: <http://mem.ie/>

⁷ EU Civil Protection Mechanism: https://ec.europa.eu/echo/what/civil-protection/mechanism_en
Union Civil Protection Mechanism Legal Framework: https://ec.europa.eu/echo/who/about-echo/legal-framework_en

⁸ CSO Population References at: <https://www.cso.ie/en/csolatestnews/pressreleases/2020pressreleases/pressstatementpopulationandmigrationestimatesapril2020/>

3.2. General Risks and Vulnerabilities at a National level

Ireland's geographic position means it is less vulnerable to large scale natural disasters such as earthquakes, tsunamis and on-island volcanoes. It is also important to note, however, that certain risks are present by virtue of Ireland being an island nation. In recent times there has been an increase in the number of severe weather events, particularly those leading to flooding, coastal flooding and erosion, flash flood incidents and severe cold/snow events. Severe weather, therefore, poses one of the most common risks. The Department of Housing, Local Government and Heritage led the response at a national level to a number of severe weather events and published a detailed *Review Report on Severe Weather 2017 and 2018*⁹.

In common with all countries across the globe and as illustrated by the ongoing COVID-19 Global Pandemic, Ireland is vulnerable to a wide range of human and animal diseases and public health emergencies. However, like many other countries in early 2020, Ireland had not anticipated the severity of the COVID-19 pandemic. Due to the severity of the impact on public health and economic life presented by COVID-19, adapted structures were introduced to manage these risks as envisaged in the *Strategic Emergency Management (SEM) National Structures and Framework*. In the early months of the pandemic, the approach taken was one of emergency response. This changed to a medium-term approach to managing risks and repairing the damage that COVID-19 has inflicted on society through the adoption in September 2020 of the Government's *Resilience and Recovery 2020 – 2021: Plan for Living with COVID-19*.¹⁰ This roadmap was a move to "mainstream" the response and management of COVID-19 into daily processes and into the structures of all Government Departments, Agencies and providers with appropriate risk management and contingency strategies put in place. On a scale of national level risks experienced, the COVID-19 Pandemic represents the most serious challenge to the State. Other factors, such as BREXIT, large scale emergencies or political crises in another jurisdiction can also have cascading effects impacting on Ireland.

3.3. Risk Mitigation and Control

Mitigation as a risk treatment process involves reducing or eliminating the likelihood and/or the impact of an identified risk. Legislative controls are in place in relation to a number of significant risks. These legal controls are enforced by regulatory authorities or agencies overseen by the relevant Lead Government Departments. Decisions regarding prioritising and resourcing of appropriate mitigation measures are the responsibility of the relevant Department and/or relevant bodies under its aegis. This process informs the allocation of additional resources, if necessary, at all levels up to central Government funding. Progress on mitigation, i.e. risk reduction, is monitored and reported internally by each Lead Government Department.

3.4. Community Resilience

Strong community resilience is a key feature of Irish life and culture. Community resilience is the sustained ability of a community to mobilise available resources prepare for, to respond to, cope with, and then recover from adverse situations, such as emergencies. Resilient communities minimise disruption caused by an emergency to everyday life and their local economies. The high level of community resilience and engagement by the public in the responses to the COVID-19 pandemic has been tested, particularly during the periods of lockdown.

⁹ Available at: <http://mem.ie/wp-content/uploads/2020/01/Review-Report-on-Severe-Weather-Events-2017-2018.pdf>

¹⁰ Available at: <https://www.gov.ie/en/campaigns/resilience-recovery-2020-2021-plan-for-living-with-covid-19/>

Resilient communities are not only prepared to help prevent or minimise the loss or damage to life, property and the environment, that can arise from an emergency, such as COVID-19, but they also have the ability to quickly return citizens to work and everyday life, reopen businesses, and restore the community as a whole to normality when such an emergency or crisis has abated. A resilient community will therefore suffer less both during and after an emergency.

4. Emergency Management in Ireland

4.1. National Structures

The structures and arrangements for national emergency management are as set out in the *Strategic Emergency Management (SEM) National Structures and Framework* document and the associated Annexes.

The SEM identifies 50 different emergency/incident types across a range of Lead Government Department's responsibilities. It provides the basis for the national level strategic emergency management, risk management and the supports required should such emergencies occur were a national level response is warranted, including security related emergencies.

The Government Task Force on Emergency Planning, which is chaired by the Minister for Defence, is responsible for the oversight and coordination of national level emergency management. However, responsibility for the response to an actual emergency at a national level remains with the Lead Government Departments identified in Annex A of the SEM. The GTF oversaw the development of this SEM Framework based on extensive engagement with the Lead Government Departments.

However, emergencies should be dealt with locally wherever possible and the separate Major Emergency Management (MEM) Framework developed in 2006 and currently under review by the Department of Housing, Local Government and Heritage, guides the local and regional responses and inputs into the national level responses, which the SEM addresses through the convening of a National Emergency Coordination Group chaired by the Lead Government Department as identified in Annex A of the SEM.

4.2. Government Task Force (GTF) on Emergency Planning

The GTF is chaired by the Minister for Defence and comprises senior representatives of all Departments and key Agencies. The GTF, which is supported by the Office of Emergency Planning (OEP), coordinates and oversees the emergency management policy and activities of all Government Departments and Agencies under their aegis. The GTF provides political leadership and facilitates coordination of emergency management between Departments and Agencies on an ongoing basis. The GTF also provides support for the policy initiatives of its Chair, usually through specially tasked GTF Subgroups. It also provides a platform for the sharing of experience and best practices across Departments and Agencies.

4.3. Government Task Force (GTF) Subgroups

The GTF Subgroups are formed for specific purposes and can consist of representatives from Government Departments, Agencies and Public or Semi-State Authorities with lead or support roles in Government emergency plans as well as non-governmental organisations as required. The GTF Subgroup on Risk is comprised of members of the GTF and its work on the NRA is supported by the Office of Emergency Planning and the Dublin City University Business School.

The GTF charges these subgroups with carrying out specific studies and developing particular aspects of emergency management. The GTF Subgroups address emergency management matters with a view to minimising the potential consequences of any given emergency and report to the GTF as required.

4.4. Lead Government Departments

Each Lead Government Department has the mandate and responsibility to coordinate all national level activity for its assigned emergency types. Its role includes risk assessment, planning and preparedness, prevention, mitigation, response, and recovery. Annex A of the SEM sets out the Lead Government Department for each emergency type identified. Support Department and Agency responsibilities are also assigned.

4.5. Support Government Departments and Agencies

All Government Departments and the Agencies under their aegis will be prepared to act in a principal support¹¹ or in another support role¹². The Lead Government Department identifies the specific roles which it expects Support Departments/Agencies to undertake in an emergency, and works with them in the planning and preparedness phase.

4.6. National Emergency Coordination Group

The National Emergency Coordination Group (NECG) is the central Government platform established as part of the response to a threatened or ongoing national level emergency. It is convened by the OEP at the request of the relevant Lead Government Department, and is chaired by the Minister or a senior official of that Department. When an NECG is convened, all members of the GTF are obliged to attend the first meeting. Attendance at subsequent meetings is managed in light of the nature of the emergency, and at the discretion of the Chair. The Chair of the NECG may establish subgroups to deal with specific issues which arise, or are expected to arise in dealing with an emergency.

4.7. Office of Emergency Planning

The Office of Emergency Planning (OEP) is established within the Department of Defence and supports the Minister for Defence as Chair of the GTF. The OEP manages and operates the National Emergency Coordination Centre (NECC), maintaining the facility in a high state of readiness and facilitating its use by the Lead Government Departments in the conduct of emergency response and other emergency management-related activities. The OEP provides peer support to Government Departments and Agencies in identifying capability gaps and informing capability development.

The OEP acts as a focal point in matters of emergency planning and risk assessment specifically and emergency management generally. It also acts to improve coordination of emergency planning across the various Departments and Agencies. It also arranges training and education relating to emergency management and offers advice and assistance, if requested, to Government Departments in relation to their emergency management functions. In regards to the NRA, the OEP, with academic support from the Dublin City University Business School, prepares the NRA for adoption by the GTF and for Government approval. Once approved, the NRA is submitted to the EU and subsequently published.

¹¹ A Principal Support Role is one that is explicitly mentioned in a Department's emergency plans.

¹² Other support roles include non-specific assistance, which may be requested from any Department or Agency in an emergency.

4.8. National Security Committee

The National Security Committee (NSC) is chaired by the Secretary General to the Government. The NSC comprises senior representatives of the Departments of the Taoiseach, Justice, Defence, Foreign Affairs and Environment, Climate and Communications together with the Defence Forces and An Garda Síochána. The Committee's remit is national security and it is available as a high level resource during an emergency in which there is a security dimension.

4.9. National Security Analysis Centre

The Government established a National Security Analysis Centre (NSAC) during 2019 under the aegis of the Department of the Taoiseach. The purpose of the new centre is to coordinate between the various State bodies with national security functions and to provide a strategic analysis for the Government on security threats. As part of this ongoing work the Government is developing a National Security Strategy, which is being led by the NSAC. The new National Security Strategy will aim to set out a whole of Government approach for how the State can protect its national security and vital interests from current and emerging threats over the period 2020-2025. Like many other states, the security environment that Ireland now faces is broad and changing. Traditional threats from terrorism, for example, remain a concern while newer threats such as those arising in the cyber environment or from a changing geo-political landscape will present new challenges.

While a number of Government Departments and services have a central responsibility to protect the State, other Government and non-government services and bodies may increasingly have a role in the national security space and we may need to develop new capabilities to respond to the ever changing environment. As part of this NRA process, the NSAC, the Department of Justice, An Garda Síochána and the Defence Forces provided expertise separate to the Expert Focus Groups when assessing security related threats relating to terrorism.

4.10. National Cyber Security Centre

The National Cyber Security Centre (NCSC), which is part of the Department of the Environment, Climate and Communications, is the primary authority responsible for cyber security in the State, including incident response, promoting and overseeing cyber resilience and information provision. The NCSC maintains a significant threat intelligence capability and this is a key tool in the work of the NCSC in mitigating risks to the State and its people from cyber security threats. The NCSC works closely with An Garda Síochána and the Defence Forces in this regard. This is being done in line with the Programme for Government commitment to implement the National Cyber Security Strategy. Ireland's current *National Cyber Security Strategy 2019 – 2024*¹³ was published in December 2019 and follows on from the country's first strategy, which issued in 2015. There is a particular emphasis in the strategy on improving the protection of government ICT and other critical national infrastructure; on education, research and training, and on enhancing Ireland's international engagement.

4.11. National Directorate for Fire and Emergency Management

The National Steering Group on Major Emergency Management (MEM) is chaired by the National Directorate for Fire and Emergency Management at the Department of Housing, Local Government and Heritage.

¹³ Details available at: <https://www.gov.ie/en/publication/8994a-national-cyber-security-strategy/>

The *Major Emergency Management (MEM) Framework*¹⁴ sets out the arrangements to enable the Principal Response Agencies (PRAs – Local Authorities, the Health Service Executive, and An Garda Síochána) to prepare for and provide a coordinated response to major emergencies.

An extensive range of appendices and other guidance documents and protocols dealing with specific aspects of emergency management complement the MEM Framework. Both the SEM and the MEM Frameworks adopt an all-hazards approach to emergency management, which advocates a systems approach based around a five-stage emergency management paradigm, as illustrated below in Figure 1:



Figure 1: Five-Stage Emergency Management Paradigm

In conjunction with the relevant guidance documents, the MEM Framework details how a structured risk assessment must be completed initially by the PRAs and then by regional, multi-agency teams in each of the eight designated MEM regions within the country. As well as setting out how the PRAs work together, the MEM Framework also identifies how these plans link with other National Plans and with site or event-specific local emergency plans. These Regional Risk Assessments are carried out on a cyclical basis and feed into this NRA process. See Figure 2 below - Linking National Plans, MEM Plans and other Plans.

¹⁴ Available at: <http://mem.ie/>

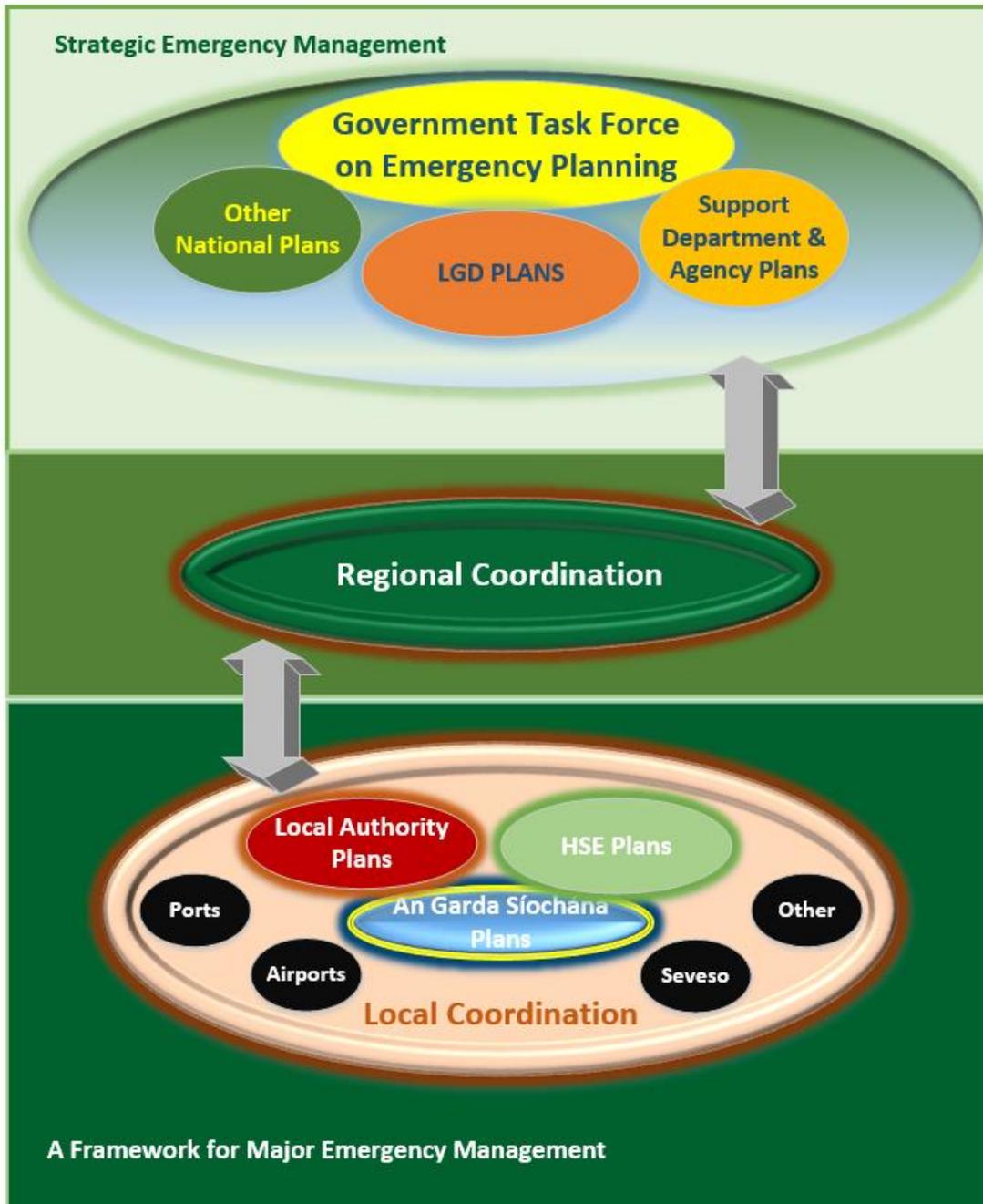


Figure 2: Linking National Plans, MEM Plans and other Plans

Section 2: The NRA Development Process

5. Methodology

5.1. Definitions

Risk: Any phenomenon with the potential to cause direct harm to members of the community, or damage to the environment, national infrastructure, the economy, or the fabric of society.

Risk Rating: The combination of the likelihood of a risk occurring and its potential impact.

Likelihood: The probability (or frequency) of a risk occurring. In this process, assessment of likelihood is made using Average Recurrence Interval (ARI) -"a statistical estimate of the average period of time (usually in years) between occurrences of an event of given scale." (Australian Government Attorney-General's Department 2015, p.70)

Impact: The consequences of a risk expressed in terms of a negative outcome for people, the environment, economic activity or societal structures.

Risk Treatment: A process to modify risk (ISO 31000: 2009). Risk treatment processes that address negative consequences are referred to as risk mitigation.

5.2. NRA Process

Flowchart - The National Risk Assessment Process

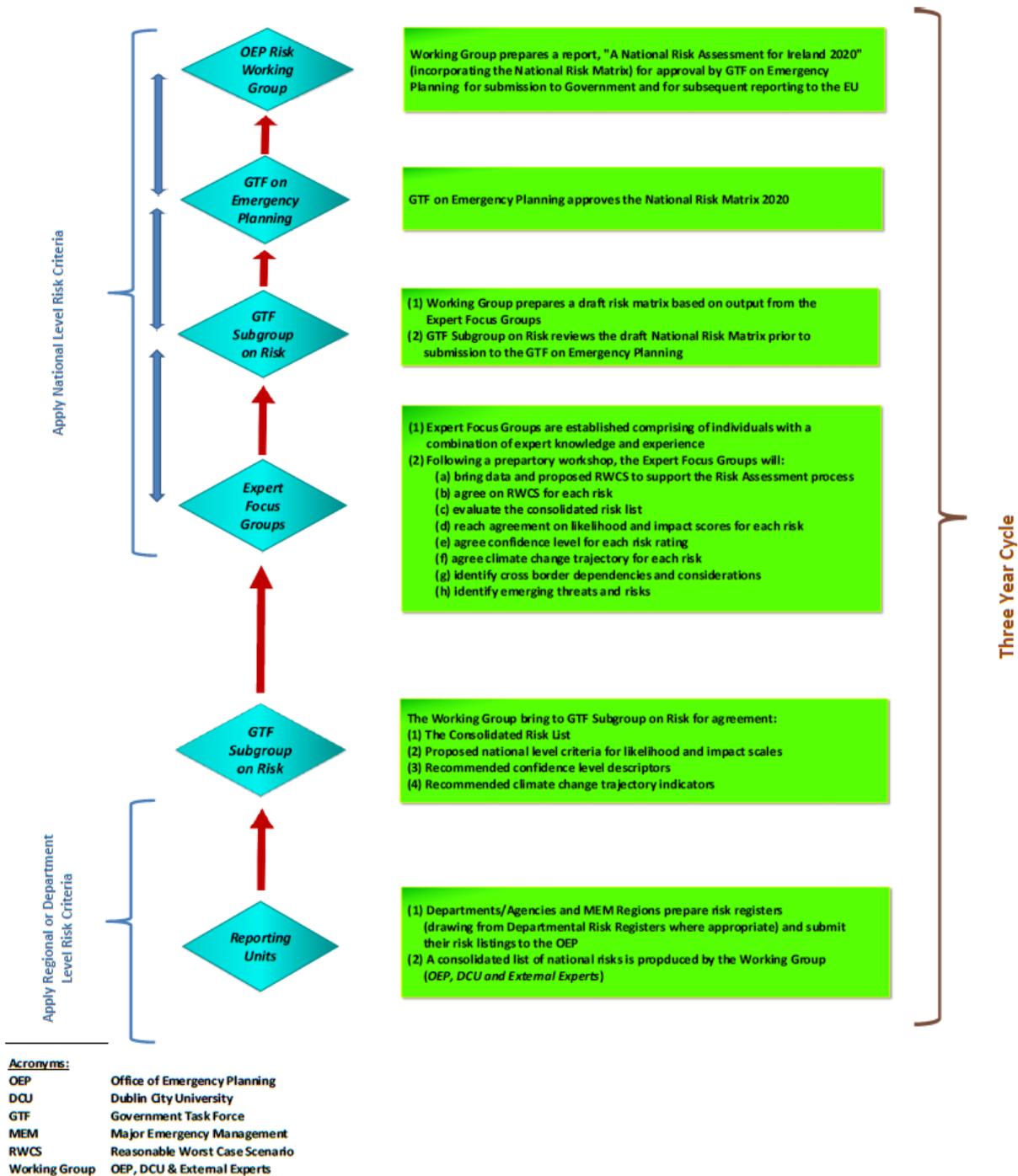


Figure 3: The National Risk Assessment Process (2020)

The stages in the NRA Process, as represented in Figure 3, are outlined below.

Stage 1 – Determination of Key Risks: All Government Departments and their Agencies (where appropriate) submitted to the OEP a listing of risks which, in their expert view, had the potential to trigger a national level emergency.

In addition, Regional Major Emergency Risk Registers, prepared by the Principal Response Agencies (PRAs) under the 'Framework for Emergency Management', were provided via the National Directorate for Fire and Emergency Management. A total of 182 risks were submitted for consideration.

The risks submitted were reviewed by the NRA Working Group. By taking account of the various inputs, identifying duplicate or overlapping risks, and eliminating those risks better described as consequences, a consolidated list of risks with the potential to trigger a national level emergency was prepared (38 risks).

The Working Group then completed a deeper review of all 38 risks. To ensure compliance with EU guidelines requiring a "focus on key risks", those risks which in 2017 were considered to be "below the threshold for inclusion" were excluded where the data and risk environment have not changed (these are referenced in Appendix 1). Risks judged as "low probability risks with a high impact" were similarly removed from the consolidated risk list at this point in the process.

Stage 2 - Consolidation: The 22 risks which emerged from Stage 1 were grouped, in accordance with the SEM (2017), into four categories:

- Natural
- Transportation
- Technological
- Civil

This consolidated list was reviewed by the GTF Subgroup on Risk. Risks judged to be Low Probability High Impact (LPHI) or lower tier risks (below the threshold for inclusion, i.e. capable of being managed at departmental, agency or regional level) were removed. Following this review, a total of 16 key risks were approved as the Consolidated List of National Risks (2020) for assessment by the Expert Focus Groups. These key risks are listed in Table 1.

The GTF Subgroup also approved revised criteria for assessing the likelihood of occurrence of each key risk (see Table 3).

Table 1: Consolidated List of Key Risks

<p><u>Civil</u></p> <ul style="list-style-type: none"> • Large Crowd Event • Pandemic • Water Supply Distribution & Contamination • Food Chain Contamination • Animal Disease • Terrorist Incident 	<p><u>Natural</u></p> <ul style="list-style-type: none"> • Storm • Snow and Ice (Including prolonged low temperature) • Flooding (Including pluvial, fluvial and coastal)
<p><u>Transportation</u></p> <ul style="list-style-type: none"> • Maritime Incident • Air Incident • Transport Hub (Includes Airports, Ports and Rail Stations) 	<p><u>Technological</u></p> <ul style="list-style-type: none"> * Structural Collapse (Including Dam, Tunnel, Building and Bridge) * Nuclear Incident (Abroad) * Cyber Incident * Disruption to Infrastructure and Utilities* (Including oil, gas, electricity and communications)

* *“Disruption to Infrastructure and Utilities” was further refined to “Disruption of Energy Supply” during the Expert Focus Group analysis, as reflected in Section 7.*

Stage 3 - Assessment: For each risk category (civil, natural, transportation, technological), the Expert Focus Groups of specialists drawn from the relevant Government Departments and State Agencies were established. Prior to attending, each participant consulted with appropriate colleagues to gather data and expert opinion relevant to the identified key risks. For each key risk, the Expert Focus Group carried out the following tasks:

1. Identified the reasonable worst-case scenario.
2. Assessed the likelihood (probability) of the scenario occurring.
3. Determined the impact on people, the environment, the economy and society.

The impact and likelihood criteria, outlined in Tables 2 and 3 below, were used as the basis for decision making with respect each key risk. All assessments were made taking account of the mitigation measures already in place. The level of confidence associated with each the outcome of each assessment was determined in accordance with the criteria outlined in Table 4.

In line with EU guidance¹⁵, the Expert Focus Groups also gave particular consideration to the potential impact of climate change (climate change trajectory), the interdependent nature of elements of critical infrastructure (the domino and/or cascading effect), and any cross-border considerations or dependencies. To complete horizon scanning each expert focus group identified emerging risks within their specialist area.

¹⁵ DECISION No 1313/2013/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 December 2013 on a Union Civil Protection Mechanism, available at: <http://eur-lex.europa.eu/eli/dec/2013/1313/oj>

Stage 4 - Analysis: Following an analysis of the data from each of the Expert Focus Groups, the NRA Working Group plotted each risk on category-specific risk matrices, noting the confidence level for each assessment, and the climate change trajectory. An overall National Risk Matrix was prepared along with a short narrative capturing qualitative data from the Expert Focus Groups including cross-border dependencies and emerging risks.

Stages 5 and 6 - Approval: The final stages in the process involved the approval of the *National Risk Assessment for Ireland 2020* by the Government Task Force on Emergency Planning and subsequent submission to Government, the EU Commission and publication.

Table 2: Classification of National Impact Criteria

Impact Category	1 Very Low Impact	2 Low Impact	3 Moderate Impact	4 High Impact	5 Very High Impact
People¹⁶	Deaths less than 1 in 250,000 people for population of interest OR Critical injuries/illness less than 1 in 250,000 OR Serious injuries less than 1 in 100,000 OR Minor injuries only	Deaths greater than 1 in 250,000 people for population of interest OR Critical injuries/illness greater than 1 in 250,000 OR Serious injuries greater than 1 in 100,000	Deaths greater than 1 in 100,000 people for population of interest OR Critical injuries/illness greater than 1 in 100,000 OR Serious injuries greater than 1 in 40,000	Deaths greater than 1 in 40,000 people for population of interest OR Critical injuries/illness greater than 1 in 40,000 OR Serious injuries greater than 1 in 20,000	Deaths greater than 1 in 20,000 people for population of interest OR Critical injuries/illness greater than 1 in 20,000
Environment¹⁷	Simple, localised contamination	Simple, regional contamination, effects of short duration	Heavy contamination localised effects or extended duration	Heavy contamination, widespread effects or extended duration	Very heavy contamination, widespread effects of extended duration
Economic¹⁸	Up to 1% of Annual Budget	Greater than 1% of Annual Budget	Greater than 2% of Annual Budget	Greater than 4% of Annual Budget	Greater than 8% of Annual Budget
Social¹⁹	Limited disruption to community	Community functioning with considerable inconvenience	Community functioning poorly	Community only partially functioning	Community unable to function without significant support

¹⁶ Injury or illness levels are determined by the extent of medical treatment required. Critical injuries pose an immediate threat to life. Serious injuries require significant medical care but are not expected to progress to life threatening status. Minor injuries require basic medical aid.

¹⁷ Environmental criteria are based on the EPA Environmental Impact Assessment Criteria - <https://www.epa.ie/pubs/advice/licensee/Guidance%20to%20licensees.pdf>

¹⁸ Includes financial and economic costs associated with an emergency. Research indicates there is no universally accepted approach to expressing economic impact on the State. Commonly used metrics include Percentages (%) of Government Annual Budget, Gross Domestic Product (GDP), Gross National Income (GNI) or Gross National Product (GNP). In selecting the approach for Ireland’s NRA, consideration was given to international practice, consultation with Government Departments and EU guidance, e.g. the EU Solidarity Fund threshold. A Percentage (%) of Government Annual Budget was adopted as the most suitable “Proxy” for economic impact.

¹⁹ Consideration was given to the impact on: Infrastructure; Community Services; Utilities; Evacuation/Quarantine; Property/Housing; Supplies of Food, Water, Medicines; Civil Unrest; and Public Dissatisfaction. The focus is on the community as a whole rather than impact on the individual (already assessed under the “People” criteria).

Table 3: Classification of National Likelihood Criteria

Rating	Classification	Average Recurrence Interval*
1	Extremely Unlikely	100 or more years between occurrences
2	Very Unlikely	51 - 100 years between occurrences
3	Unlikely	11 – 50 years between occurrences
4	Likely	1 - 10 years between occurrences
5	Very Likely	Ongoing/Less than one year between occurrences

*a statistical estimate of the average period of time between occurrences of an event of given scale²⁰

Table 4: Confidence Level Descriptors²¹

Confidence Level	Criteria
High ***	Assessment based on expert knowledge of the issue and/or reliable, relevant, current data. Consistent agreement among assessors.
Moderate **	Assessment informed by significant knowledge of the issue and/or limited reliable, relevant, current data. Broad agreement among assessors.
Low *	Assessment informed by limited knowledge of the issue and/or insufficient reliable, relevant, current data. Limited agreement among assessors.

²⁰ Australian National Emergency Risk Assessment Guidelines (2020) Available at <https://knowledge.aidr.org.au/resources/handbook-national-emergency-risk-assessment-guidelines/>

²¹ The National Confidence Level Descriptors capture the reliability, relevance and currency of the evidence used to support the likelihood and impact assessments. They are also an indicator of the level of agreement between experts attending the Expert Focus Groups.

6. NRA Process - Continuous Improvement

In the interest of continuous improvement and line with the *EU Reporting Guidelines on Disaster Risk Management, Art. 6(1) d of Decision No 1313/2013/EU*²², a number of enhancements were introduced to the 2020 NRA process. These are outlined below.

6.1. Likelihood Criteria

The broad time intervals applied in the previous NRA in 2017 were considered to have impacted negatively on the granularity of the outcomes from the process. In order to generate a more nuanced plot of relative risk, the intervals were amended to split the "unlikely" classification (originally 10 to 100 years) in two. "Unlikely" was updated to 11 to 50 years between occurrences while "very unlikely" covered 51 to 100 years between occurrences. The "extremely unlikely" category, which previously covered 500 or more years between occurrences, was revised to 100 or more years. In an Irish context, given the NRA is updated every three years, a 100-year focus was considered more appropriate.

6.2. Climate Change

To encourage good practice in preparing for the impact of climate change, each key risk was reviewed by the specialist expert focus groups to determine the potential impact, if any, of climate change on the risk rating. Based on the data available, judgements were made as to whether each risk rating was likely to increase, decrease or remain unchanged.

6.3. Cross-Border Impacts

For each key risk, the Expert Focus Group determined if there was a significant cross-border dimension to be considered. Current levels of cooperation on risk mitigation and national resilience were examined and recorded.

6.4. Emerging Risks

Based on horizon scanning and prior consultation within their departments/agencies, the Expert Focus Group members identified risks likely to emerge in the future. The identification and recording of such risks within the NRA was undertaken to ensure ongoing monitoring for early warning signs which might trigger mitigation measures or require escalation into the NRA process.

6.5. Public Input

The public were invited to complete a Household Emergency Preparedness Survey designed, administered and analysed by the Business and Society Research Team at Dublin City University (DCU). This public participation helped enhance the communication of the NRA process, increasing risk awareness across the nation.

²² Available at the following link: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.C_.2019.428.01.0008.01.ENG&toc=OJ%3AC%3A2019%3A428%3ATOC

Section 3 – Assessment of Key Risks

7. Overview

The NRA process determines the key national risks which require "a higher level of management" and which risks "need not be considered further at this time" (BS EN 31010:2010 p.83). The matrix for each category of key risk (natural, transportation, technological and civil), as well as a summary of the rationale underpinning each individual risk assessment, are presented in Sections 7.1 to 7.4 below. It is noted that while 16 key risks were assessed by the Expert Focus Groups, a total of 15 scenarios were agreed as the same reasonable worst-case scenario was adopted for both Maritime and Transport Hub risks.

7.1. Natural Risks

In Ireland, emergencies related to severe weather events dominate the natural risk classification. The national meteorological service, Met Éireann, provides early warning of severe weather, usually several days in advance. Colour-coded weather warnings are issued where established criteria are met. The NECG, which coordinates the responses required of departments, state agencies, local authorities, industry and citizens, then convenes when appropriate.

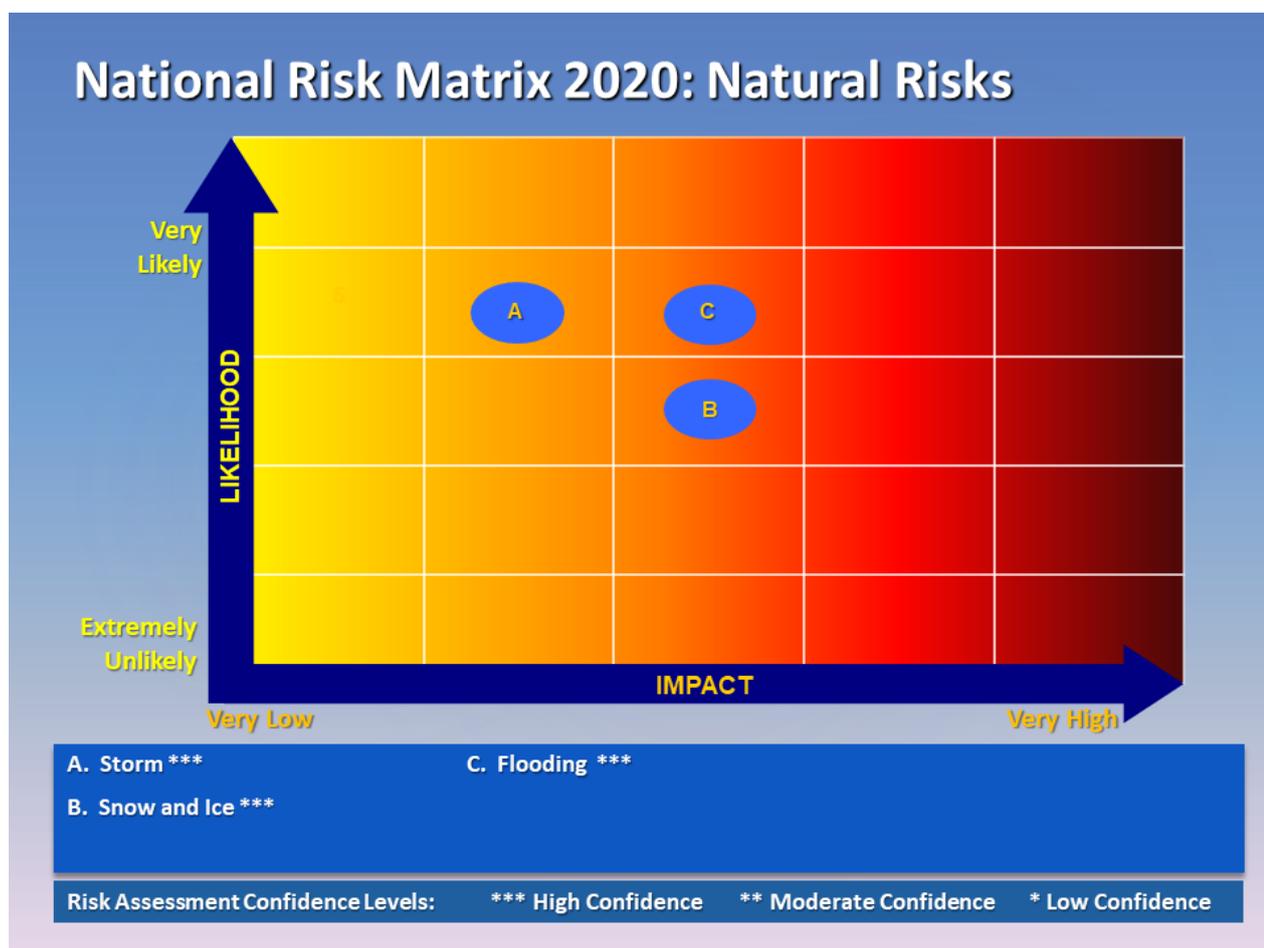


Figure 4: National Risk Matrix 2020: Natural Risks

7.1.1. Storm (A)

Storms occur when mean wind speeds exceed 65 km/h and gust speeds are in excess of 110 km/h. Such events are experienced in Ireland typically four or five times each year, with the west and northwest of the country most often affected. Storms normally impact at local or regional level, but more national impact may be experienced when higher wind speeds occur or when the areas affected are more densely populated. Storms are usually forecast three or four days in advance, allowing mitigating actions to be taken, but damage to infrastructure (e.g. buildings, power lines) and disruption to transport is usually unavoidable. Along with damage caused directly by the strong winds, storms can give rise to considerable damage in coastal regions caused by high waves, or by sea surge leading to flooding.

The reasonable worst-case scenario adopted by the Expert Focus Group was a storm equal to the magnitude of Storm Ophelia which triggered a nation-wide red level warning and made landfall over Ireland on 16 October 2017. Winds reached an observed wind speed of 156 km/h and a mean of 60 km/h.

The national weather services in Ireland and the United Kingdom work together to provide all-island weather warnings. National resilience is further enhanced through cooperation in areas such as power supply and health services both of which can be impacted by storm events.

7.1.2. Snow and Ice (B)

Due to the influence of the Atlantic Ocean, Ireland does not usually suffer the extremes of temperature experienced by other countries at similar latitude. Ireland has, however, experienced periods of severe weather – most recently in 2018 and previously in 2010, 1982, 1978/79, 1962/63 and 1947. Robust plans are in place to deal with severe weather emergencies at local, regional and national levels. In addition, the annual campaign, “Be Winter Ready”, is designed to build national resilience and to encourage individuals and communities to prepare for severe weather and to plan for mitigating the impact.

The agreed reasonable worst-case scenario was a snowstorm event of the magnitude of Storm Emma, which struck Ireland between 28 February and 4 March 2018. According to the analysis report of Storm Emma and the cold spell which struck Ireland by Met Éireann, this was one of the most significant snowfall events of recent years saw temperatures plummet with widespread snowfall across the country. Temperatures struggled to rise above freezing as bitterly cold easterly winds swept in over the country causing widespread disruptions to roads, rail and air travel, with work and school closures and significant impacts on water, power and food supplies. As with storm, there is considerable cooperation between the weather services in Ireland and the United Kingdom to provide all-island weather warnings. National resilience is further enhanced through cooperation in areas such as power supply and health services, both of which can be impacted by snow and ice events.

7.1.3. Flooding (C)

Ireland has experienced a number of significant flooding events in recent years. These floods have an impact on people, the environment, the economy and social fabric and infrastructure. Flooding was rated one of the most significant national level risks in the NRAs completed in 2012 and 2017. As a result, flood mitigation schemes are implemented on an ongoing and prioritised basis with funding of €940m allocated to flood risk management in the National Development Plan 2018-2027.

In relation to flooding, a number of scenarios were considered: (a) flash floods in urban settings, posing risk to life and resulting in significant property damage, (b) river floods of sustained duration and covering large areas of the country; (c) coastal/tidal flooding and storm surges impacting on the cities of Dublin and Cork.

The reasonable worst-case scenario adopted was a flood of the magnitude of the 2015/16 Shannon river flood, when one third of river-level gauges recorded their highest readings ever. The assessed impact reflected sustained duration flooding, impacting severely on communities with significant disruption to daily life and access to services.

There is considerable cross-border coordination, cooperation and communication with regard to the management of waterways to ensure that flood relief activities on one side of the border do not impact negatively on neighbouring communities. A cross-border Major Emergency Management Group meets regularly to plan for and deliver a more effective emergency response in both jurisdictions. Northern Ireland Water and Irish Water have agreements in place to support delivery of services across the island.

7.2. Transportation Risks

Road traffic accidents, such as bus crashes and multiple vehicle collisions, tend to impact at a local or regional level. Transport incidents, having national impact, are rare. A number of rail, maritime and aviation incidents have triggered national level responses in the past – examples include the Buttevant rail crash (1980) and the Air India disaster off the coast of Kerry (1985).

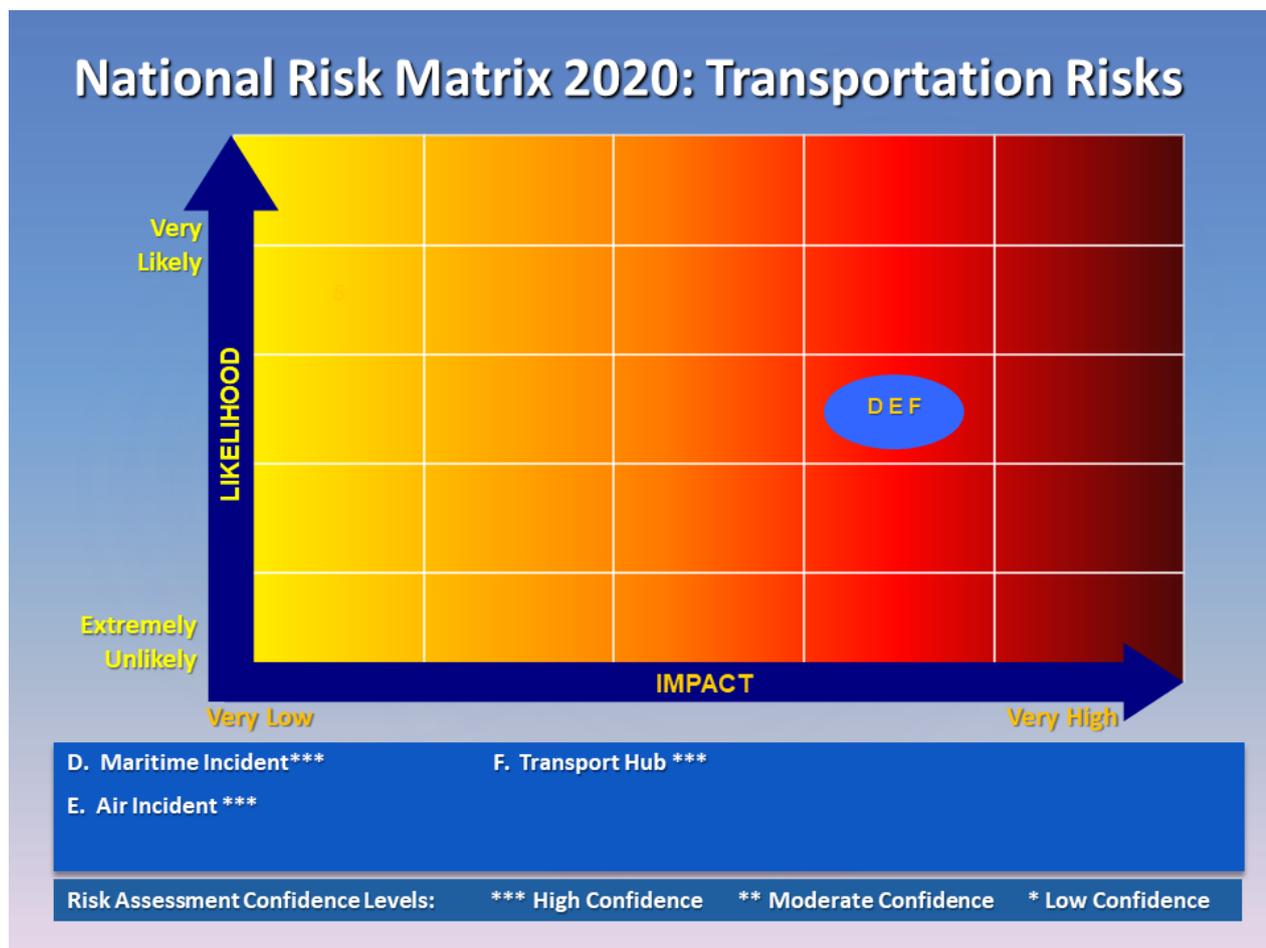


Figure 5: National Risk Matrix 2020: Transportation Risks

7.2.1. Maritime Incident (D)

Ireland has experienced maritime incidents such as the collision of the M.V. Kilkenny and the M.V. Hasselwerder (1991) in Dublin Bay and the oil spill from the Russian aircraft carrier, Admiral Kuznetsov (2009), off the south west coast. A major incident causing pollution could have significant consequences for aquaculture and the leisure and tourism sector.

The reasonable worst-case scenario adopted by the Expert Focus Group was the collision of a cargo vessel and a passenger ferry resulting in a blockage along the 10km channel at Dublin Port. This could also result in a spill of heavy fuel oil into the port and bay. Allied to the potential loss of life and pollution of the coastal area, the closure of Dublin Port would have significant negative impacts on business, manufacturing, and supply chains.

In the event of a maritime incident, the Irish Coast Guard may seek support from the Maritime and Coastguard Agency in the UK. During a major rescue incident, the Irish response would be supported by assets from other jurisdictions. Routine and long standing arrangements are in place to facilitate such cross-border cooperation. In addition, mitigation could require redirection of vessels to other ports, including Belfast Port.

7.2.2. Air Incident (E)

The risk associated with air travel is now extensively modelled, regulated and closely managed. In February 2011 a regional major emergency was declared when a Manx2 Flight with two crew and ten passengers crashed on landing at Cork Airport with the loss of six lives.

In line with international data, the reasonable worst-case scenario agreed by the Expert Focus Group was a major accident at a national airport involving an aircraft, with up to 400 passengers on board, crashing on take-off or landing. This would result in a major rescue operation and the closure of the airport for a period of time.

Cross-border arrangements are in place to assist in the event of air incidents. Such plans include provision for transferring the management of Irish air space to other jurisdictions and, in the event of an airport closure, flights may also be diverted to airports in Northern Ireland.

7.2.3. Transport Hub (F)

Transport hubs, including international airports, seaports, and major railway stations represent critical national infrastructure from an economic and social perspective. Regulatory measures are in place to mitigate and minimise risks. In addition, the Principal Response Agencies coordinate preparedness across the eight Major Emergency Management regions and conduct regular exercises to test the response and coordination arrangements for responding to transport related emergencies.

Once again, the reasonable worst-case scenario which emerged from the Expert Focus Group was the sinking or running aground of a vessel causing the blockage of the Dublin Port channel. Blocking this key logistical artery and the resultant closure of Dublin Port would have a significant impact on Irish imports and exports and on fuel supplies. The cross-border arrangements are as outlined in Section 7.2.1.

7.3. Technological Risks

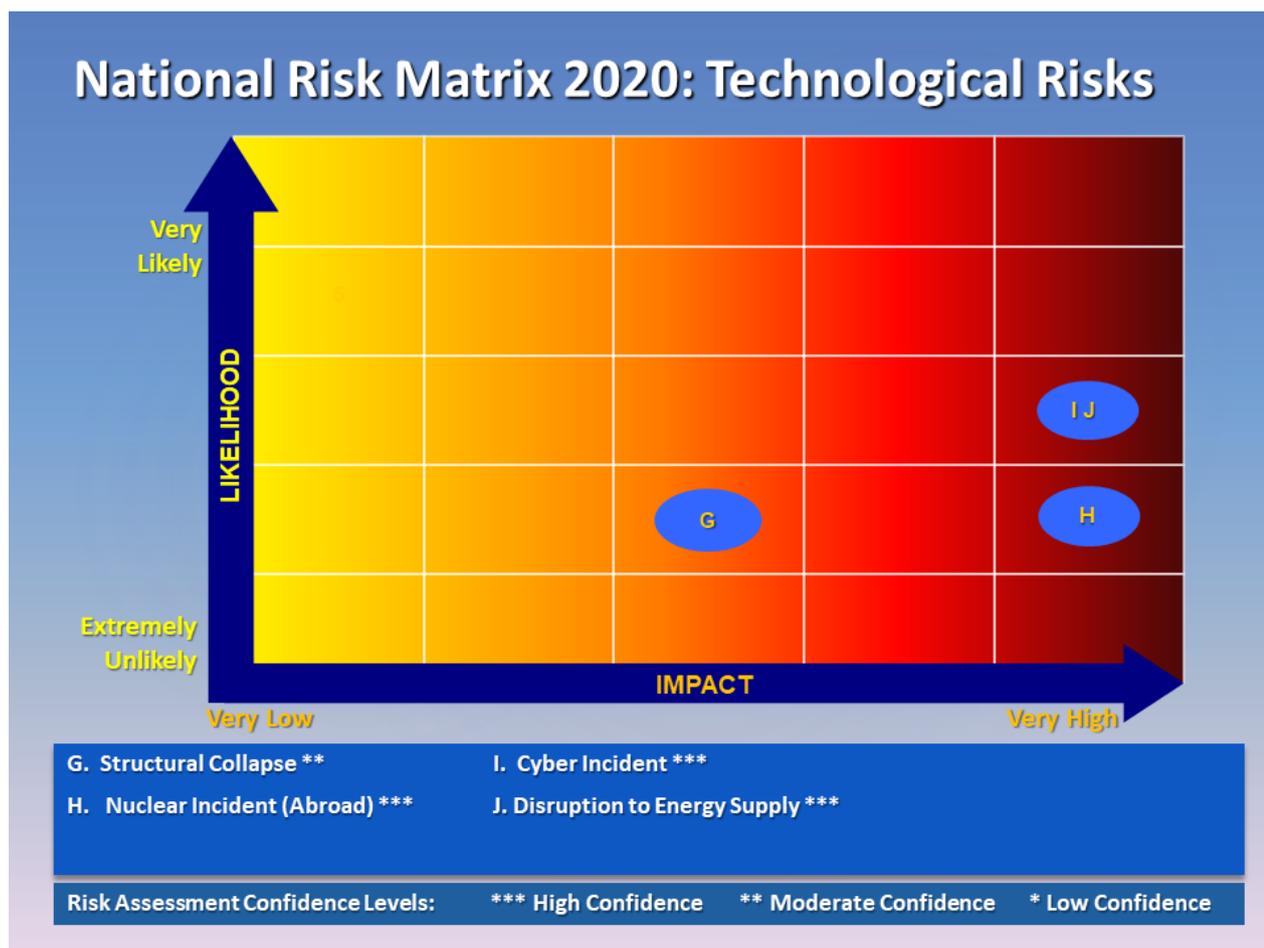


Figure 6: National Risk Matrix 2020: Technological Risks

7.3.1. Structural Collapse – Loss of Physical Infrastructure (G)

The collapse of a critical structure such as a bridge, hospital, dam, or tunnel has the potential to result in mass casualties and cause extended disruption to relevant services. Significant structural damage to the Dublin Port Tunnel, making the tunnel unavailable for an extended period of time, was the reasonable worst-case scenario agreed by the Expert Focus Group. The closure of Dublin Port Tunnel would impact severely on the resilience of transport and distribution networks, resulting in major economic impacts for the duration of the closure. The transportation of aviation fuel from the Port to Dublin Airport would suffer significant impact. As a sizeable number of the trucks using the Port and the Tunnel move freight to and from Northern Ireland, its closure would also have knock-on effects on exports to European markets and on critical imports to the region.

7.3.2. Nuclear Incident Abroad (H)

The Environmental Protection Agency (EPA) plays a central role in assessing exposure to ionising radiation and monitoring developments relating to nuclear installations and radiological safety. An accident or terrorist attack at a nuclear installation abroad has the potential to cause widespread low level radioactive contamination of the environment in Ireland. The EPA report (2016, p.29) indicates the likelihood of a nuclear incident in Sellafield triggering an emergency in Ireland is low since: "For almost 90% of the time, the prevalent meteorological conditions in Ireland would result in any radioactive plume from Sellafield travelling in an easterly direction (away from Ireland)".

The economic impact of an incident close to Ireland in north-western Europe was assessed by the Economic and Social Research Institute (ESRI) in 2016. The minimum potential impact was assessed at €4 billion. A National Plan for Nuclear and Radiological Emergency Exposures and specific supporting sub-plans for the key Departments and Agencies involved in the response to a nuclear emergency are in place. The reasonable worst-case scenario remains as it was in 2017, a severe nuclear incident in the UK or north-western Europe. Given the nature of this risk, there is significant cross-border cooperation with European States on monitoring and sharing radiological data.

7.3.3. Cyber Incident (I)

Government, health, transport, manufacturing, banking and electronic payments, power generation, education and a myriad of other sectors, as well as commercial and social interactions, are underpinned by network and information systems and communications infrastructure. The Department of the Environment, Climate and Communications works with the Commission for Communications Regulation (Comreg) to regulate much of the State's telecommunications infrastructure. In compliance with the Network and Information Systems (NIS) Directive, the NCSC works closely with key stakeholders to oversee and manage this risk and significant national resources are allocated to mitigating this risk.

The reasonable worst-case scenario agreed by the Expert Focus Group was a cyber-enabled event causing disruption to the National Power Grid. Such an event may be caused by malicious attack, human error, or environmental issues. Regardless of the cause, a loss of power supply would have a significant impact on industry and communities.

There exists cross-border power supply interdependency with Northern Ireland. The second control centre for the island of Ireland is located north of the border, providing resilience should a cyber-enabled event result in a disruption to power supply. This redundancy and resilience is also important on an ongoing basis and in common with other cross-border dependencies it will require further consideration during the lifetime of this NRA.

7.3.4. Disruption to Energy Supply (J)

A secure, reliable and safe supply of electricity, gas and oil is critical to the economy and society. The Commission for Regulation of Utilities (CRU) has responsibility for monitoring and ensuring security of electricity and gas supplies in Ireland. The Department of the Environment, Climate and Communications (DECC), regulatory authorities and industry work to maintain secure energy supplies, manage distribution networks, and enhance emergency management and response arrangements. The DECC has overall responsibility for maintenance of the national oil reserves. Its role includes maintaining and updating contingency plans, liaising with other departments and with the National Oil Reserve Agency (NORA) as well as with the oil industry. Out of a total reserve supply of 90 days, NORA currently holds approximately two thirds of this in oil storage facilities in Ireland and the balance is held abroad.

Fifty percent of electricity generated in Ireland is from gas. Gas supply comes from two main sources, the Corrib gas field and the UK interconnector. The ESRI (2011) estimate that loss of gas fired electricity would cost the state up to €1 billion per working day. The Expert Focus Group determined that disruption to the gas interconnector with the UK during a period of cold weather represented the reasonable worst-case scenario. The impact on electricity generation was deemed critical.

There is a cross-border dependency with the UK as part of a Europe-wide integrated network stretching further east to Russia. This network is governed by EU Directives which will no longer apply to the UK after BREXIT. The governance of this cross-border dependency will therefore require further consideration during the lifetime of this NRA.

7.4. Civil Risks

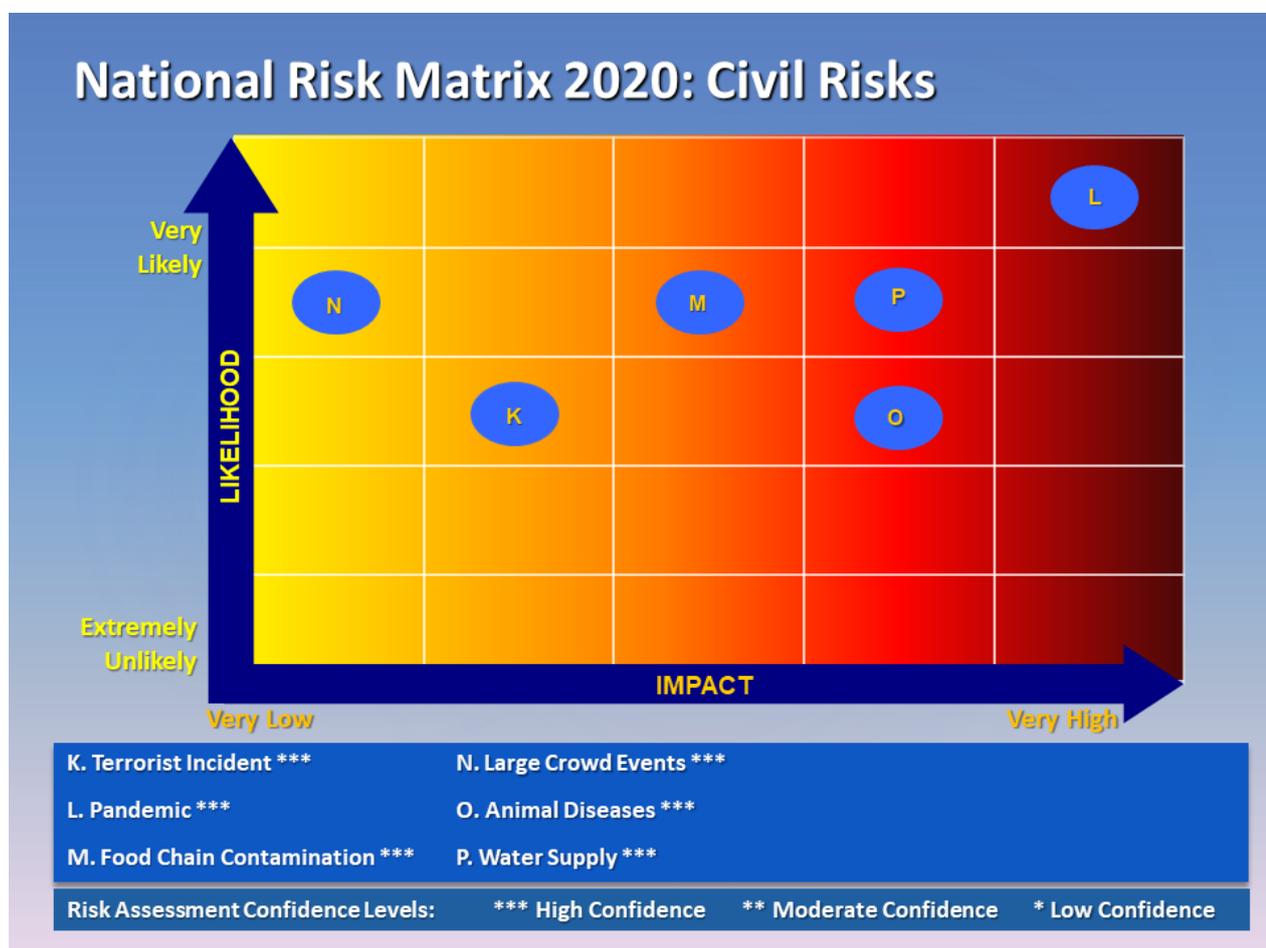


Figure 7: National Risk Matrix 2020: Civil Risks

7.4.1. Terrorist Incident (K)

Terrorism can be motivated by a variety of factors, but in general it is activity aimed at intimidating a population, subverting the fundamental structures of a state or unduly influencing government. Terrorist acts, which may be carried out by groups or individuals, can include but are not limited to bombings, shootings, knife attacks or other violent attacks on people or property, kidnap or hijack.

An Garda Síochána and the Defence Forces provide the Government with an assessment of the current security threat. The Department of Justice is the Lead Government Department and An Garda Síochána is the Lead Agency in responding to terrorist threats in Ireland.

The changing nature of the international terrorist threat, characterised by increased dispersion and individualisation of the threat, has been highlighted by terrorist attacks in Europe and internationally in recent years.

The response capacity and capability of An Garda Síochána and the Defence Forces has been significantly enhanced in a number of respects over the past number of years. Improvements in communications capability, including centralised emergency call centres, ensure an appropriate, coordinated response to incidents which may arise.

Based on this landscape, a reasonable worst-case scenario was assessed.

There is ongoing cross-border cooperation between Ireland and the UK on policing issues, with regular meetings held. Across Europe, international cooperation and information sharing channels are well established and continue to be enhanced.

7.4.2. Pandemic (L)

Historical evidence shows that pandemics have the potential to cause death and illness on a significant scale and to disrupt normal social and economic activity. The Department of Health and the Health Protection Surveillance Centre (HPSC) maintain close contact with the European Centre for Disease Control and the World Health Organisation (WHO). These close contacts are used to monitor, predict and mitigate the spread and impact of pandemic influenza or other infectious diseases.

The current COVID-19 pandemic presented the reasonable worst-case scenario. Ireland recorded the first positive case on 29 February 2020 and the WHO subsequently declared COVID-19 a pandemic on 11 March 2020. Public Health measures such as 2 metre social distancing, respiratory etiquette, and hand washing were advised, and restrictions on movement and gatherings were introduced to suppress the virus by breaking chains of transmission. While initially there were no proven medical counter measures to the virus, a vaccination programme commenced in late 2020. As the pandemic is ongoing at the time of writing, the final impacts on people, the economy, and society remain to be established. A number of cross-border dependencies were also identified:

- Availability and competition for PPE, medical equipment, medicines and vaccines in the global marketplace
- WHO and ECDC data, advice and rapid risk assessments used to frame public health measures
- International Health Regulations to control the spread of infectious diseases globally by early warning and surveillance systems.

7.4.3. Food Chain Contamination (M)

There are extensive measures in place to monitor food safety and prevent contamination of food products. The Food Safety Authority of Ireland (FSAI) is the national body with responsibility for enforcing food safety law. The Authority's principal function is to ensure that food consumed, distributed or produced in Ireland meets the highest standards of food safety and hygiene. The departments and agencies involved in food safety deliver a prompt coordinated response, as evidenced during food-related incidents such as the "horsemeat incident" of 2013.

Actual or perceived contamination of Irish manufactured dairy products resulting in significant reputational damage was adopted as the reasonable worst-case scenario. Reservations in relation to the safety of Irish dairy products internationally could have severe, long lasting economic impacts.

There is significant cross-border cooperation in relation to food safety. The FSAI is the contact point for the EU Rapid Alert System for Food and Feed (RASFF), which provides an early warning system for serious risks detected in food or animal feed internationally.

7.4.4. Large Crowd Event (N)

The organisation of large events, with in excess of 5,000 people expected to attend, is well regulated. Event management plans are prepared and shared with the Local Authority as part of the licensing process. Other stakeholders such as the health service and police are consulted as part of this process.

The reasonable worst-case scenario agreed by the Expert Focus Group was an unlicensed event, such as a local festival, protest or social media driven gathering, organised without consultation with the Principal Response Agencies. An incident at such an event could escalate and the absence of a comprehensive emergency plan may inhibit the response.

Cross-border intelligence and the sharing of audience profiling assists in the preparation of event risk assessment and the development of emergency response plans.

7.4.5. Animal Disease (O)

Given the importance of agriculture to the economic well-being and social fabric of Irish society, extensive national contingency plans are in place for the management of animal health and the prevention of animal disease. The National Disease Control Centre monitors transboundary diseases such as Foot and Mouth, Africa Swine Fever, Avian Influenza and Rabies. National contingency plans are in place for the management of such outbreaks.

An outbreak of foot and mouth was identified as the reasonable worst-case scenario. Such an outbreak would have a significant impact on the economy and cause major societal impacts on the farmers and those involved in the depopulating/culling of animals. Mitigation measures such as comprehensive animal tracking systems have helped prevent a national animal disease emergency in recent years.

As in the case of public health and food safety, transmissible animal diseases having the potential for serious impact and rapid spread are subject to European legislative controls. These control measures include animal tracking and disease surveillance systems, vaccination programmes, slaughter of infected herds/flocks, and the implementation of movement control zones.

7.4.6. Water Supply Distribution/Contamination (P)

The risk to water quality, supply and distribution was considered under various headings. Vulnerabilities in supply may occur as a result of drought, severe weather, or failure of treatment or distribution infrastructure. Water quality may be compromised by disruption to the effective operation of water treatment plants, overflow from waste water plants, or other sources of contamination. Significant upgrade works have been untaken while others are planned in water and waste water plants. Emergency arrangements are in place to ensure that a base line service is maintained.

The reasonable worst-case scenario agreed by the Expert Focus Group was a loss of water supply to a large urban area such as Dublin or Cork as a result of drought, prolonged severe weather or critical infrastructure loss/failure.

As outlined under Section 7.1.3, Northern Ireland Water and Irish Water have agreements in place to support delivery of services across the island of Ireland. There is considerable cross-border coordination, cooperation and communication with regard to the management of shared water courses and catchments. A cross-border Major Emergency Management Group meets regularly to plan for and deliver a more resilient supply and an effective emergency response in both jurisdictions.

7.5. The NRA Risk Matrix 2020

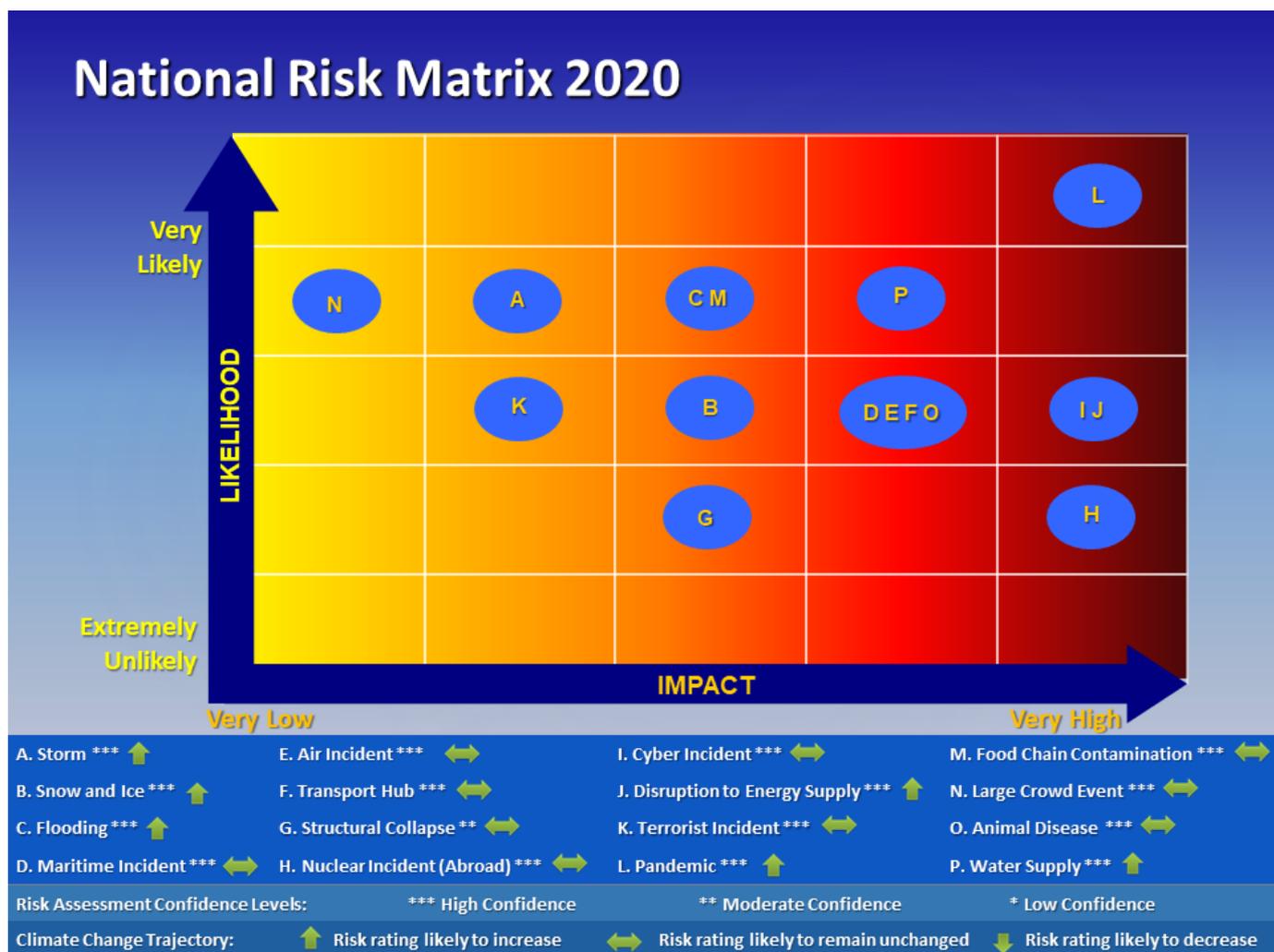


Figure 8: National Risk Matrix 2020

Table 5: Confidence Levels and Climate Change Trajectory

Key: Confidence Level		Key: Climate Change Trajectory	
High ***	Assessment based on expert knowledge of the issue and/or reliable, relevant, current data. Consistent agreement among assessors.	↑	Based on the data available, risk rating likely to increase.
Moderate **	Assessment informed by significant knowledge of the issue and/or limited reliable, relevant, current data. Broad agreement among assessors.	↔	Based on the data available, risk rating likely to remain unchanged.
Low *	Assessment informed by limited knowledge of the issue and/or insufficient reliable, relevant, current data. Limited agreement among assessors.	↓	Based on the data available, risk rating likely to decrease.

7.6. Low Probability High Impact Risks (LPHI)

As part of the *EU Reporting Guidelines on Disaster Risk Management*²³, measures addressing key risks with cross-border impacts and, where appropriate, low probability risks with a high impact were also considered as part of the NRA process.

In Ireland's case the only risk assessed as being a LPHI risk was a Tsunami. Such an event could also be considered as a potential cross-border risk impacting on a number of EU Member States.

7.6.1 Tsunami

Historical records and geological evidence indicate that, while tsunamis are unlikely to occur around Ireland, the Irish coast is vulnerable to tsunamis from submarine landslides and distant earthquakes. Levels of coastal flooding would be similar to that seen during storm surges, but with much more energetic inundation and much shorter reaction times.

The Geological Survey of Ireland commissioned a modelling study of coastal inundation resulting from a repeat of the Lisbon 1755 earthquake and tsunami, commonly regarded as the reasonable worst-case scenario. The study found inundation levels comparable to storm surge with strong currents in near-shore water. Based upon GSI data, the likelihood of occurrence of the reasonable worst-case scenario of a tsunami was assessed as very unlikely while the impact, if it were to occur, would be high. For this reason, the risk of tsunami in Ireland is included as a Low Probability High Impact (LPHI) risk which could also have cross-border impacts across a number of EU Member States.

Ireland is a member state of the Tsunami Early Warning and Mitigation System in the North-Eastern Atlantic, the Mediterranean and Connected Seas and receives tsunami messages from the French and Portuguese authorities, who are the designated Tsunami Service Providers for this system. There is currently no national system to convert these messages to warnings if required.

²³ Available at the following link: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.C_.2019.428.01.0008.01.ENG&toc=OJ%3AC%3A2019%3A428%3ATOC

7.7. Emerging Risks

Horizon scanning was introduced as part of the NRA 2020 process. Based on research and consultation within their Departments/Agencies, the Expert Focus Group members identified the risks likely to emerge in the medium to long-term. The identification and recording of such emerging risks within the NRA was undertaken to ensure ongoing monitoring for early warning signs which might trigger mitigation measures or require escalation into the NRA process. Risks identified as potentially requiring national level oversight are included in Table 6 below.

Table 6: Emerging Risks 2020

Emerging Risk	Description
Long COVID	The long term future impact on physical and mental health and are not yet clear
Societal Impacts of COVID-19	The long term impacts of the pandemic on society remain uncertain.
Increase in Exotic and Zoonotic Disease	Incidences of exotic and zoonotic diseases may increase due to increased movement of animals and popularity of exotic pets
Vaccine Hesitancy	For a vaccination programme to be effective, a significant percentage of population must be vaccinated.
Antimicrobial Resistant Microorganisms	The potential for increasing antimicrobial resistant infections as a result of excessive and / or inappropriate use of antimicrobials, including antibiotics.
New Invasive Species (Animal or Plant)	Invasive species, either through competition for survival or through microorganisms such as viruses and bacteria, can negatively impact indigenous species, crops and the environment
Major Emergency Management impacted by BREXIT	The potential for BREXIT to disrupt cross-border agreements, memoranda of understanding and Service Level Agreements with respect to Major Emergency Management
Supply Chain Dependency	Raw materials and critical components for essential machinery and equipment may be reliant on single points of failure abroad
Cloud Storage Security	The move towards cloud storage of information may increase security, privacy and data protection risks
Increased Dependence on Renewable Energy	Increased dependence on renewable energy (solar/wind) may lead to the need for additional monitoring and planning for the fluctuation in energy supply

7.8. Public Risk Rating

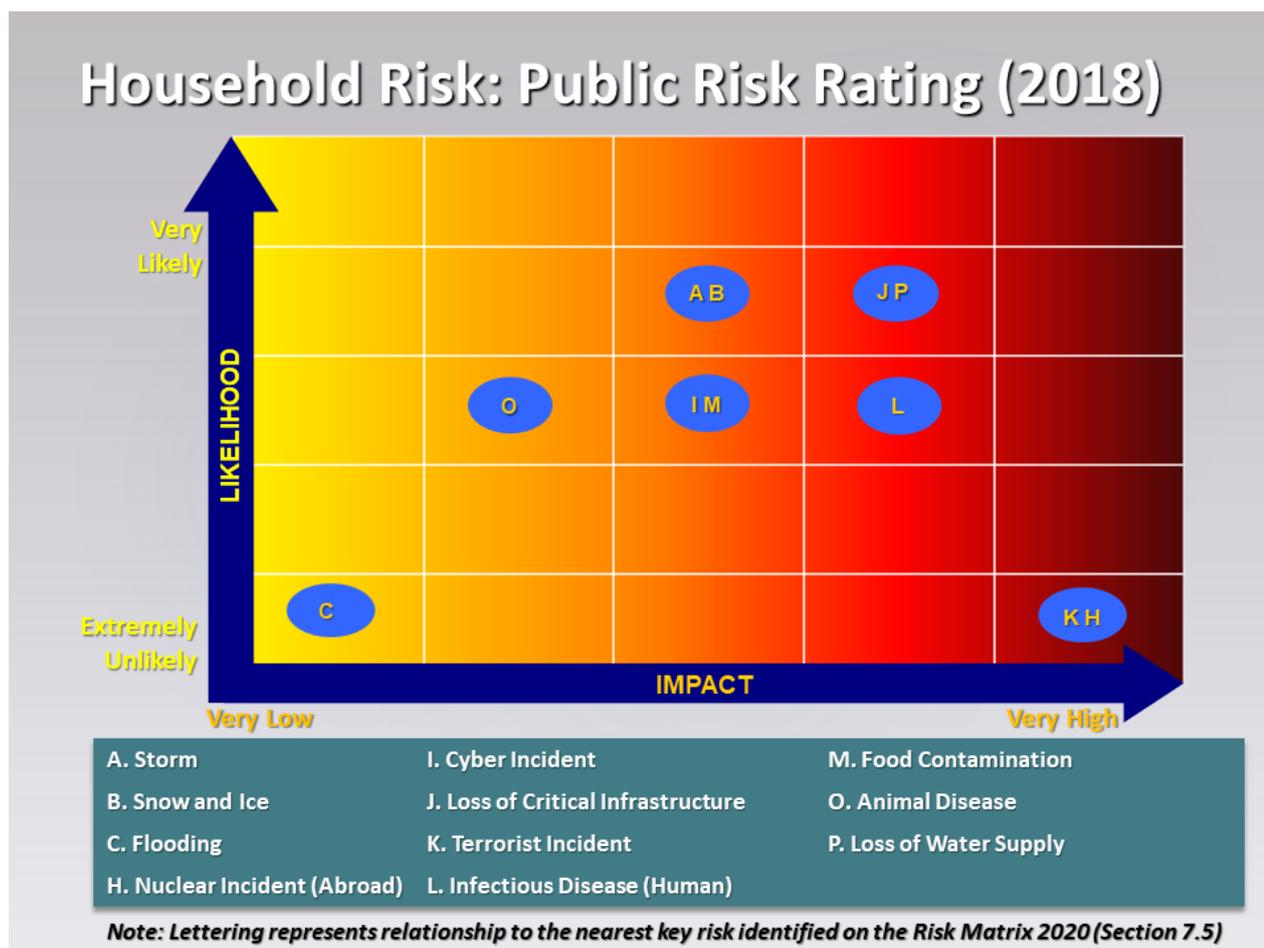


Figure 9: Household Risk – Public Risk Rating (2018)

Using a Household Emergency Preparedness Survey designed, administered and analysed by the Business and Society Research Team at DCU Business School, the public were presented with a listing of risks considered to have potential for direct impact on their households and were invited to rate each risk on this basis. This public participation feeding into the NRA process will assist with awareness-raising, public information and education.

To ensure the outputs from the survey were available to the NRA 2020 process, the data was collected in 2018. The timing is significant as the survey was completed before the COVID-19 pandemic. The online data collection software “Qualtrics” was used to gather the data. Social media was used to promote the questionnaire, with a combination of paid advertisements and participants encouraged to re-share the link. Government and public agencies, such as the Office of Emergency Planning, Met Éireann, County Councils, and Fire Brigades encouraged public participation. Responses were received from 6,497 households.

The survey outcomes contributed to the framing of the NRA and will be used by government to inform risk communication and promote national resilience in the future.

Section 4 - Process Post the NRA 2020

8. Process Post the NRA 2020

Following endorsement of the NRA 2020 by the Government Task Force on Emergency Planning and notation by Government, the NRA 2020 will be submitted to the EU Commission as part of Ireland's reporting requirements under the EU Civil Protection Mechanism and will be published.

The NRA 2020 will inform the overview carried out by the EU Commission of Member States' national level risk assessments, concentrating particularly on cross-border and EU wide key risks identified by Member States.

The Government Task Force on Emergency Planning will continue to oversee and review the national risk assessment process on a three year cycle, which will address how future assessments of our national level key risks; assessments of our risk management capabilities and the associated prioritisation of emergency planning, response preparations and mitigation of such key risks should be carried out and reported upon.

Nationally, the NRA 2020 will inform the collective and individual prioritisation of the risk management of these key risks, particularly by the Lead Government Departments and other State Agencies responsible.

The next step in this process will be to commence an assessment of risk management capabilities in 2021 on the key risks identified in the NRA 2020. This will be a follow-on to the first such assessment carried out in 2018, which resulted in a *Summary of the National Risk Management Capabilities Assessment – 2018*²⁴ report submitted to the EU Commission and published in October 2018. This work will further inform the prioritised training and exercising programmes on the emergency management of these key risks.

Finally, the next National Risk Assessment process will commence in early 2023 with the intention of it being completed by the end of 2023. This will be subject to any changes in the EU reporting requirements from the current revision of the EU Civil Protection Mechanism and any associated developments relating to proposed EU Directives that may have an impact on Member States' risk management processes.

²⁴ Available at: <https://www.emergencyplanning.ie/en/summary-national-risk-management-capabilities-assessment-2018>

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Appendix 1 - Risks below the threshold for inclusion in the NRA 2020

To ensure compliance with the EU guidelines requiring a "focus on key risks", the GTF Subgroup on Risk reviewed the risks which were judged as being below the threshold for inclusion in the National Risk Matrix (2017). It was agreed that where the risk environment had not changed, the risks would not be included as key risks.

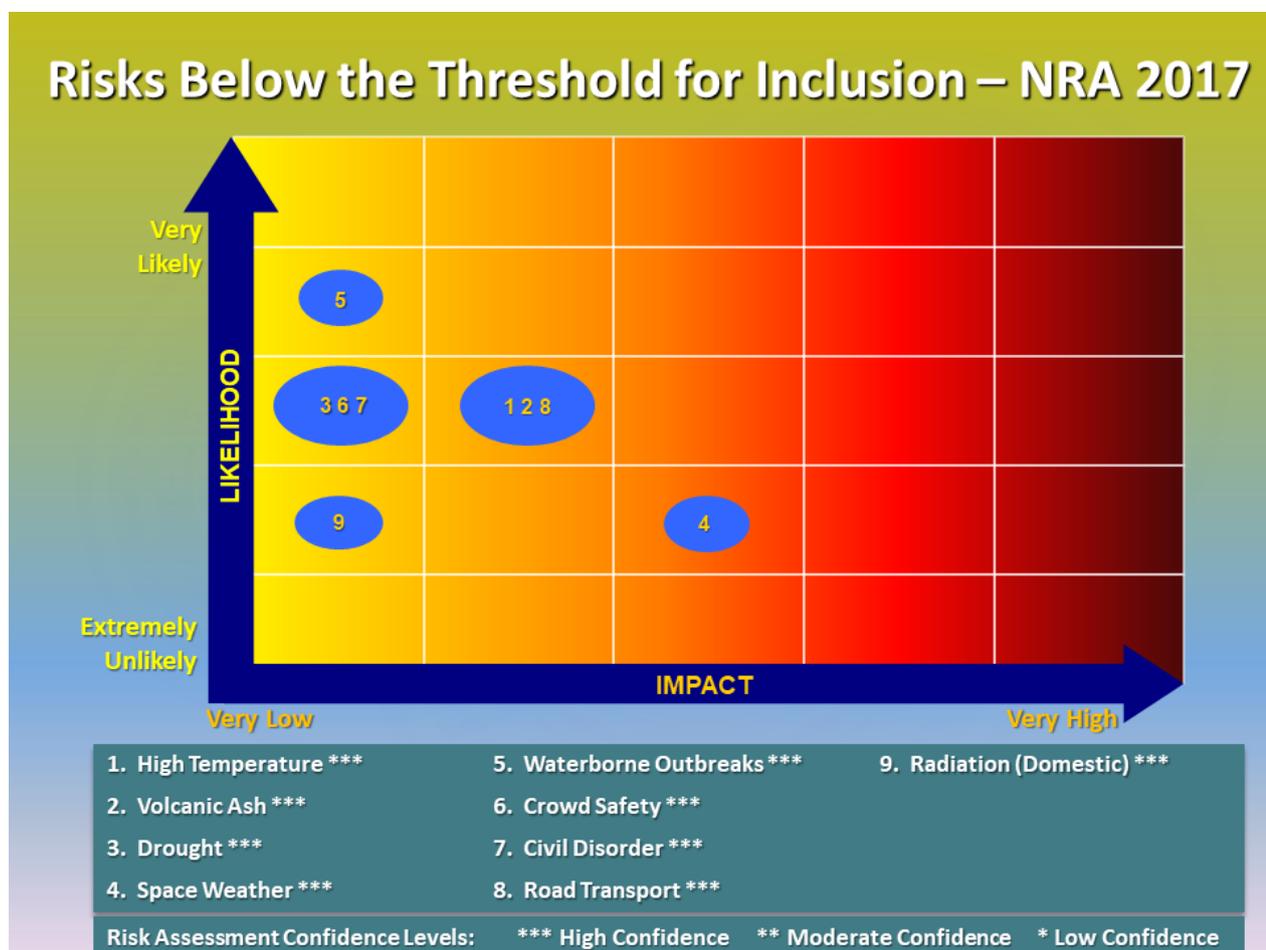


Figure 10: Risks below the threshold for inclusion in the National Risk Matrix (2017)

In addition to the risks listed in Figure 10, the GTF Subgroup on Risk considered two further risks, fire (including wildfire) and railway incidents, which were judged to be below the threshold for inclusion. As new trends in relation to the organisation of events and the management of crowd safety had emerged, "Crowd Safety" was re-categorised as a key risk and assessed under the NRA 2020 process. The remaining risks will continue to be managed at departmental, agency or regional level.





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