

Managing Emergencies and Disasters: A Review of Key Literature

BACKGROUND PAPER

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NESD

An Chomhairle Náisiúnta Eacnamaíoch agus Shóisialta
National Economic & Social Council

An Oifig Náisiúnta um Fhorbairt Eacnamaíoch agus Shóisialta
National Economic & Social Development Office NESDO



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Executive Summary

This paper provides background to NESC's Report No 158, *The Covid-19 Pandemic: Lessons for Irish Public Policy* (NESC, 2022). It outlines key literature on responses to, and effective management of, disasters and emergencies. It also looks at literature describing the experience of managing Covid-19 to date in a variety of countries.

Key learning from the literature shows that emergency experience and recovery is shaped by pre-emergency conditions, and disaster is not inevitable. Levels of vulnerability (e.g. poverty, age, disability, ethnicity) have a strong impact on outcomes, with reduced vulnerability supporting better outcomes. Therefore, risk needs to be assessed not only with reference to impact and probability, but also with reference to vulnerability. Vulnerable groups should be identified in advance, and 'hidden' vulnerabilities sought out (e.g. migrant workers in low quality employment). This allows responses to support the vulnerable to be planned. Policies which mitigate vulnerability, both social and wider (e.g. social safety nets, good land-use planning), should also be in place prior to an emergency striking.

Planning for how to deal with a disaster is important, and both procedures and structures to be used should be designed in advance and tested. Such procedures and structures are likely, however, to need adaptation in the heat of a crisis. Disasters and crises are uncertain, and flexibility in rules and structures is important. Such flexibility needs to be fostered in advance.

A key aspect of dealing with an emergency or disaster is ensuring that resources are available, such as funding, infrastructure, technology, logistics and personnel. These can be sourced from the State, the private sector, and community and voluntary groups. Excess or buffer capacity is useful to provide, even where this is in conflict with the status quo.

Effective co-ordination of the various actors responding is another key element of managing a disaster. Vertical coordination is needed between levels of government, horizontal coordination across local governments, as well as coordination between public, private and third sector organizations.

Such co-ordination works most effectively where organisations and staff know and trust each other in advance. High levels of trust in society also supports effective responses to disasters and emergencies, as people trust that the resources they contribute will be well used to deal with the crisis. Good co-operative relationships can be developed where individuals and organisations trust each other, and trust government. It is difficult to 'switch on' good levels of trust during a crisis, and policies to support it need to be followed in advance.

A centralised decision-making process at national level is necessary to provide co-ordination of disaster responses, while allowing decentralised leadership for implementation at local level. Leadership needs to be capable (trained), transparent and able to coordinate other actors.

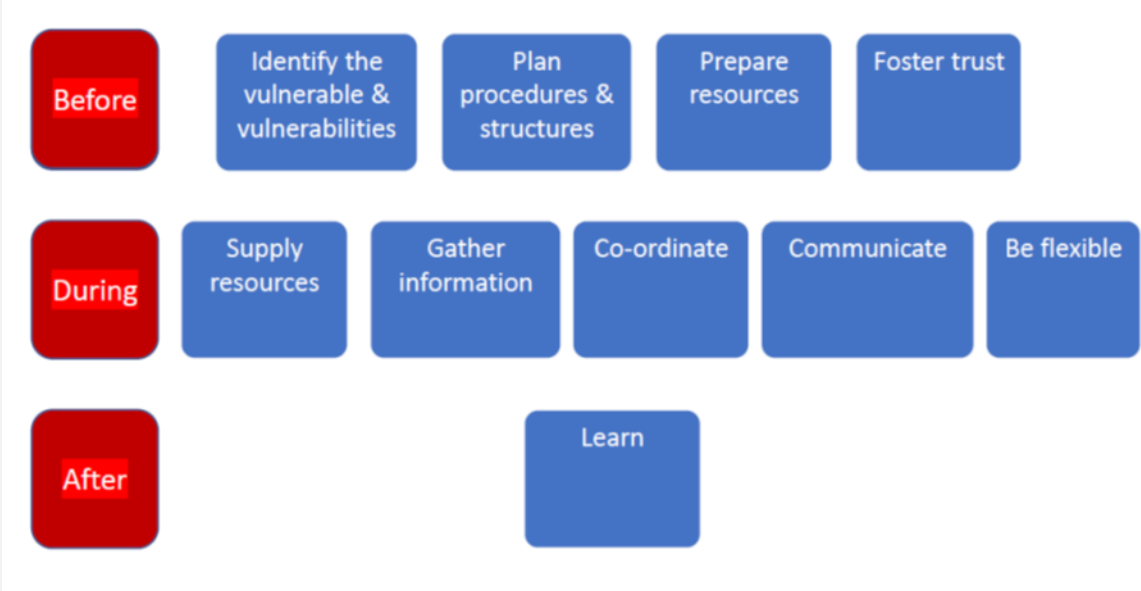
Communication is another key element of managing an emergency, with one strong central voice important. Information is needed to mitigate and respond to disasters, and so the flow of information up and down between organisations, and to the population, is essential. Governments need to listen, to enable dialogue, and to understand information. Technologies and protocols to gather information and allow it to be shared also need to be in place.

During Covid-19, the issue of balancing information from experts and from economic actors was evident, but there remains a need to listen to expert advice and prepare for a range of possible crises.

A final important element of managing a disaster or emergency is to learn from it. Analysis of the responses used will provide lessons to help better prepare for future crises.

Figure 1 below summarises the key elements outlined in the literature on managing crises and disasters.

Figure 1: Key themes in the literature on managing disasters and emergencies



1.1 Introduction

This paper provides background to NESC's Report No 158, *The Covid-19 Pandemic: Lessons for Irish Public Policy* (NESC, 2022). Report No 158 reviews international experience of responding to emergencies, including the Covid-19 pandemic; looks at examples of Ireland's response; and extracts emerging policy lessons for Ireland's national recovery, resilience and preparedness. This paper expands on the first element of Report No 158, by outlining the key literature on responses to, and effective management of, disasters and emergencies. It also looks at literature describing the experience of managing Covid-19 to date in a variety of countries.

Why literature on disaster management? The UN defines a disaster as 'a situation or event that overwhelms local capacity, necessitating a request to the national or international community for external assistance; an unforeseen and often sudden event that causes great damage, destruction, and human suffering.' Comfort (2005) sees a disaster as 'representing the interdependent cascade of failure triggered by an extreme event that is exacerbated by inadequate planning and ill-informed individual or organizational action'. The Covid-19 pandemic falls into such categories, with its potential disastrous impact varying by country, depending on the preparation and response of Government and wider society. A scan of the literature on effectively managing disasters quickly shows that the main features of successful disaster management were and are evident in the successful management of Covid-19 in many countries. Therefore this literature provides a useful outline of the key conditions which States need to have in place to manage a range of crises, pandemics or otherwise.

This paper will first outline those most at risk during a disaster, followed by a discussion of the 'hard' resources (e.g. infrastructure, technology and personnel) needed to manage a disaster or similar crisis. This is followed by consideration of less tangible, but equally key, background conditions for crisis management, such as co-ordination, communications and trust. Then some issues which were particularly salient in the Covid-19 response, such as the challenge of balancing health and economic issues, and the use of expert advice, are considered. The paper closes with a note on how learning from crises is absorbed into 'business as usual', and the lessons from the literature to consider, moving forward.

1.2 Disasters and the vulnerable

Disasters take many shapes. They can be sudden-onset emergencies (e.g. hurricanes, earthquakes), slow-onset emergencies (e.g. famines), or complex (humanitarian crises). They also take several forms, such as weather related (storms), hydrological (floods or avalanches), climate-related (drought or wildfire), earthquake or volcanic, and biological. There are also man-made disasters, such as those related to traffic or aviation, industrial accidents, and pollution. Covid-19 can be seen as a crisis with a biological origin, culminating in a complex, protracted, crisis.

A commonality is that the impacts of disasters are not inevitable, in the sense of being overwhelming, destructive and causing human suffering. Negative impacts happen when a community is not appropriately resourced or organized to withstand the impact, particularly when the hazard interacts with vulnerable populations. Support for the vulnerable is a key issue during disasters, as it is the vulnerable who are most at risk. As argued by the Red Cross, 'it is not inevitable that hazards become disasters'. Instead, 'risk = hazard x vulnerability' (Thompson, 2004). Wisner et al (2004) argue that 'too great an emphasis is typically placed on scrutiny of the natural hazard itself, while not enough emphasis is placed on underlying sociological root causes that make humans vulnerable to natural disaster events.' They argue that vulnerability "is generated by social, economic, and political processes that influence how hazards affect people in varying ways and with different intensities" (p. 7). Therefore, vulnerable groups are impacted by both social pressures that produce vulnerability AND the hazard itself. Another way to conceive of these concepts is that risk should be assessed with reference to impact and probability, but also with reference to vulnerability. Vulnerabilities in the environment are also important to consider, e.g. the resilience of infrastructure, landuse, and building codes (Thompson, 2004).

In relation to Covid-19, Tierney (2020) notes that, 'the capacity to cope with the Covid-19 risk and its economic fallout is a direct result of longstanding social inequities: those who remain on the payroll when working from home versus those who do not get paid unless they show up at a work site; salaried full-time versus gig workers; those with abundant access to healthy food versus the food insecure; those with health insurance versus those without; citizens and green-

card holders versus those who are undocumented; the securely housed versus the precariously housed and the homeless ... Like disasters, the pandemic is exposing the nature of the social fabric and seeking out its weaknesses.'

The vulnerabilities facing groups can vary, depending on the nature of the crisis/danger, but many are common. These include, for example, low income, low education, low political power, gender, ethnic group, physical and mental frailty, extremes of age, social isolation. During Covid-19, age and ill-health led to greater medical vulnerability. In a crisis, vulnerabilities which are relatively hidden may also become much more evident (e.g. food poverty in many disasters; digital exclusion during Covid-19; invisibility of those in nursing homes in arrange of countries – see Capano, 2020; Fitzpatrick et al, 2020; NESCS, 2021b). Woo (2020) notes that in some cases, the emergence of these hidden vulnerabilities arises from an already-known systemic problem that policymakers and society are unwilling to address.

Some groups which are not usually vulnerable may also become vulnerable due to the nature of the crisis (e.g. healthcare workers or school students during Covid-19). The impact of vulnerability is also mediated by an individual's or group's positive capacity to cope, withstand and recover from the impact of hazards (ISDR, 2004). Typically however it is those who are already vulnerable who are most severely impacted. For example, a low-income household during Covid-19 could experience a greater range of difficulties – lack of income, food poverty, digital exclusion, greater difficulties engaging in school or work – than for example a high income family, who have more resources to cover the costs generated by the dislocations of Covid-19. So systemic vulnerabilities exacerbate the new vulnerabilities linked to the crisis or hazard. Sometimes a response to reduce vulnerability (e.g. closure of congregated services for those with disabilities, or of schools) can trigger new vulnerabilities (e.g. regression of a range of skills, stress on household members caring for these groups). Some of the vulnerabilities experienced by a particular group can also lead to wider systemic vulnerabilities. For example, the low pay and living and working conditions of e.g. meat plant workers and some nursing home staff, helped to spread Covid-19 more widely (Wickham, 2022).

Much of the effective management of crises is about reducing vulnerability, during the four typical stages of a disaster or crisis - mitigation, preparedness, response, and recovery. In terms of preparation and mitigation, policies which reduce economic & social disparity before the crisis arrives help to reduce vulnerability during emergencies (Thompson, 2004; Gerber, 2007). For example, welfare and public health services reduce income disparities, improve health and provide access to health care supports. Pre-existing social safety nets allow states to quickly enact and extend public health measures (Liu et al, 2021), and to roll out support payments. Universal access to services also helps. Thompson (2004) notes that 'people [in Cuba] do not enter the service system when they were affected by a hazard; they were already part of the system'. Such policies also help to promote social capital, which is a key foundation of effective responses to crises (see below).

During a crisis, many responses are focused on the vulnerable. During Covid-19, a range of policy tools were adopted internationally in the following areas - health (e.g increasing capacity in healthcare facilities), public health (e.g. restrictions on movement and gatherings), economic (e.g. deferral of tax payments), and social (e.g. social security payments). These worked to support those previously vulnerable as well as those newly affected by vulnerabilities due to the pandemic, in households and businesses. Some of the supports focused particularly on the vulnerable include income replacement payments, enhanced sick pay, eviction moratoriums, accommodation for the homeless, free face coverings and antigen tests, specific supports for residential care centres, mental health supports, provision of food supplies, ICT supports, advice and information in various languages, enhanced visa processes for immigrants, and enhanced domestic violence supports.

Supports for the vulnerable are also needed during recovery. These include assistance to manage and pay back debt generated by business closures and rent/mortgage moratoriums, enhanced job search assistance, extra mental and physical health service provision, extra educational support, support for the care economy, support for the community groups which support the vulnerable, etc.

1.3 Responding to a crisis

In the thick of a crisis, a range of factors are both necessary and aid an effective response. A number will pre-date the crisis, and many are refined during the crisis. These factors are described below.

1.3.1 Pre-existing emergency plans

Having pre-prepared plans and procedures to deal with an emergency is an important aid when crisis hits. Thompson (2004) notes the value of comprehensive emergency plans based on local knowledge and experience of what worked and what did not, during hurricanes in Cuba. It is clear during Covid-19 that countries which had already encountered a coronavirus were better prepared for Covid (e.g. Singapore, Hong Kong, Canada) (Capano, 2020).

Putting these plans into action should also be practiced. During Hurricane Katrina in New Orleans, plans that had been put through a trial run were more effective (e.g. evacuation by car, which was revised following a simulation, and worked very well in practice). On the other hand, plans which were not practiced through a simulation left organisations in a vacuum on what they should be doing (Congress, 2006; White House, 2006). This delayed responses while organisations figured out their respective responsibilities and roles.

Similar problems occur when plans that are supposed to be in place have not been written, or have not been updated. Italy had a very good national plan against pandemics dating from 2005. However, it was never updated, and most of its relevant guidelines (including the provision on stocking up on PPE) were not implemented at either the national or regional level even though the plan assigned very specific pandemic preparation duties to each region. This greatly slowed Italy's response to Covid-19 (Capano, 2020).

Planning involves defined centralised decision-making structures for different phases (Thompson, 2004). During Hurricane Katrina, several statutory bodies in the US were not clear what their role was, which slowed responses (Congress, 2006; White House, 2006). This was a particular issue in the US, given the multiplicity of government levels involved there (federal, state and city). However it can arise in other countries also, and was evident in Italy during Covid-19 (Capano, 2020). It can be useful to have roles specified in legislation, depending on the context.

It is also important to ensure preparation for more than one type of emergency. The re-focusing of the US's FEMA (Federal Emergency Management Agency) on terrorism-related emergencies following 9/11 is considered to have reduced its ability to respond to non-terrorism emergencies (Congress, 2006). Royo (2020) argues that the focus on fiscal health post-2008 led to cuts to the Spanish healthcare system that helped push it to the brink. Woo (2020) notes that Singapore has a large 'rainy day fund', and during Covid-19 they were able to use this to support those unable to work due to lockdown restrictions, without having to borrow.

In relation to the vulnerable, clear guidance on how they should be managed during a crisis is important. This was lacking during for example the Chicago heatwave disaster, when hundreds of vulnerable people died (Klinenberg, 2015). As this group are most likely to be negatively affected in a crisis, it is key to have supports ready for them.

Although it is important and useful to have pre-emergency plans and structures, it is common for these to be adapted in the face of the actual crisis. The OECD (2020) found that many governments either set up new structures, or adopted hybrid approaches consisting of existing and new structures, to deal with the novelty, severity, and global nature of the Covid-19 pandemic. France, for example, did not rely on existing health agencies, but instead set up a new scientific council to advise the government directly on strategic decision making during Covid-19 (Hassenteufel, 2020). Ireland also set up a new advisory committee, NPHE, to deal with Covid. Such flexibility is stressed in disaster management literature also, with e.g. Janssen et al (2010) arguing that the usual co-ordination models may not be adequate for volatile and dynamic disaster situations, and so co-ordination mechanisms need to be flexible so that they can be customised the particular situation. Lai (2018) notes that plans need revisions according to circumstances, and goes further to say 'this could not be overemphasized in influenza pandemics – a complicated biosocial context full of unexpectedness and uncertainty'.

1.4 Resources

Another key requirement in responding adequately to a crisis is resources. These take the form of funds, infrastructure, supplies, IT, trained personnel, etc. These can be accessed from all sectors – state, business, and community. Various examples of how these are accessed are evident in managing Covid-19, and other emergencies.

1.4.1 State resources

In terms of State resources, Singapore was able to draw on new hospital capacity and contact tracing systems created following the SARS outbreak, as well as large financial reserves (\$370bn, of which \$52bn was spent on Covid-19) (Woo, 2020). Woo argues that this 'excess capacity' goes against the grain of New Public Management (NPM) which emphasises efficiency and resource optimisation, but is perhaps a key resource to have to cope with unexpected but inevitable crises. Cuba, through its centralised economy and State ownership of resources, is able to easily access many buildings (e.g. all schools), vehicles (boats and buses) and personnel to be re-purposed during emergencies (Thompson, 2004).

1.4.2 Resources from the private sector

Many countries, including Ireland, contracted private hospital facilities and other spaces, such as hotels and conference halls, to provide care during Covid-19 outbreaks, and later as vaccination centres (Woo, 2020). This access to resources is aided by good procurement practices. The latter were judged not to be in place in the US during Hurricane Katrina, leading to price gouging, and inflexible rules which blocked local companies from providing services (Congress, 2006; White House, 2006). Access to private sector resources is also aided by good relationships between the state, private companies and their communities, so that some supports are provided on a good will basis, e.g. the support provided by many supermarkets and pharmacies in Ireland during Community Call and since, to provide home delivery and other services to the vulnerable.

1.4.3 Logistics to manage and move resources

Modern logistics systems are necessary to access and move resources. This takes several forms. During a natural disaster, material needs to be moved into disaster zones, and the Hurricane Katrina experience showed that adequate logistical systems were not in place (Congress, 2006; White House, 2006). In many EU countries during Covid, new systems had to be put in place to ensure food and medical supplies were still moved between and within countries. At another level, various systems were set up to make food accessible to families reliant on school meals in different countries. This took a variety of forms, from vouchers and money being made available, to food that could be collected from schools, and food delivered to families (Sargiacomo et al, 2021).

1.4.4 Technology

Technology is another resource, and Covid-19 saw the development and use of digital technologies for pandemic planning, surveillance, testing and contact tracing. Examples include Singapore's fever screening system (Woo, 2020), and Ireland's contact tracing app. Taiwan was able to integrate data from immigration records with its national health insurance database, allowing individuals who had travelled to Wuhan to be identified for testing and tracking (Whitelaw et al, 2020). Existing technologies also saw high rates of adoption, with for example, moves to online medical consultations. Big data was used to track movement of populations and track the emergence of local infections, through e.g. mobile phone signals, credit cards usage, travel patterns, and internet searches (Nageshwaran et al, 2021). Technology also played an important role in communication about Covid-19, with the gov.ie website intensively used to provide up-to-date information in Ireland.

1.4.5 Personnel

Resources also include trained and experienced personnel who are able to manage the uncertain and fast moving work involved in dealing with a crisis. This was considered lacking during Hurricane Katrina in the US, when a number of key personnel first managing the crisis were political appointees with no experience in disaster management, while many of those experienced in such work had left FEMA, following its re-organisation and the re-targeting of its mission (Congress, 2006, White House, 2006). During the Covid-19 crisis in Ireland, many public sector staff were redeployed and retrained for new positions to deal with the demands of the crisis. A number of authors also argue that there should be ‘surge’ personnel who can expand response capacity during a crisis (White House, 2006; Woo, 2020). This is evident in Ireland, as the ‘day jobs’ of those who were redeployed could not be done, for significant periods of time in some cases.

1.4.6 Resources of the community and voluntary sectors

In addition, significant resources can be drawn upon in the community and voluntary sector, and wider community. As noted by Tierney, 2020, disasters do not bring out societal breakdown, but instead great levels of co-operation among ordinary people. ‘Volunteering and donations increase dramatically in crisis situations. New groups form spontaneously to meet the needs of disaster victims, and existing groups that previously had no disaster-related responsibilities shift their focus. Civil society groups and institutions mobilize rapidly at the local, regional, and national level.’ This is evident in all types of crises and disasters, with most of those saved in natural disasters saved by local people; and voluntary organisations moving in to carry out immediate responses and clean-up (Whitaker et al, 2015). During Covid-19, Irish community and voluntary organisations and many individuals signed up to support the vulnerable under Community Call, and similar responses were evident in other countries (see NESCC, 2021a; Coutts et al, 2020; Mackenzie, 2020).

Resourcing in a crisis also extends to the charity sector. During many crises, included the protracted Covid-19 crisis, many charity and voluntary groups in several countries were not able to operate as normal, leading to them losing fundraising and service provision income that would normally sustain them (Hutton et al, 2021). At the same time more demands were placed on them due to the cost of complying with Covid restrictions and the need to pivot services to respond to needs (Chen, 2021). Sudhipongpracha & Poocharoen (2021) argue that a well-funded and organized sector of community workers constitutes a critical component of a society’s capacity and resilience in a time of crisis.

1.5 Co-ordination

Co-ordination is of vital importance during a crisis. Gerber (2007) notes that managing disasters through different phases requires vertical coordination between levels of government, horizontal coordination across local governments, and coordination between public and private organizations.

1.5.1 Political co-ordination and cohesion

This begins with political co-ordination. A factor which supported a good response to the Covid-19 crisis was cohesion across political parties. This can be seen in the difficulties which occurred in countries which did not have such agreement. For example, in Spain, Royo (2020) argues that the 2008 global financial crisis intensified political polarization in Spain and led to the emergence of new political parties, with citizens moving from the traditional political parties to seek solutions in more radical parties. By 2020 the country had held two general elections within a year, resulting in a fragmented parliament, and the first coalition government since the 1930s. It took days for the disagreeing coalition parties to reach agreement on when to lock down, and on economic supports for those locked down. There were also differences between restriction decisions among the various regional governments in Spain, with, for example, Catalonia refusing to sign a joint declaration with the central government to coordinate Spain’s lockdown measures. Meanwhile in Belgium, co-ordinating nine ministers of health and their responsibilities delayed the response to Covid (Van Overbeke & Stadig, 2020).

In some countries, however, the Covid crisis united different political parties. These included Portugal, where opposition parties supported the country's minority Socialist government's response to the pandemic. This also happened to some extent in Belgium, where negotiations on forming a government after an inconclusive election had been taking place for 15 months by early 2020. However on 16 March 2020, all major parties agreed to an emergency government and a cross-party committee to govern through Covid (Van Overbeke & Stadig, 2020). In Ireland, a caretaker government was supported by all political parties for three months while negotiations on a new government took place until July 2020.

1.5.2 Co-ordination at regional level

Co-ordination then becomes important at regional government and regional organisation level. In both Spain and Italy, unco-ordinated regional decision-making meant that different parts of the countries shut down at different times, allowing people to leave one area and bring the virus to others (see also Capano et al, 2020). Woo (2020) sees a lack of co-ordination between the Ministries of Health and Manpower as a factor contributing to Singapore's failure to recognise the risk which migrant workers faced during Covid. Several authors have noted that poorly co-ordinated regional health care systems also had weaknesses when it came to managing Covid. For example, in Spain, collection of health statistics is only carried out by regional governments, and there is no central data source, making accurate comparisons of Covid management between regions essentially impossible to undertake (Royo, 2020). Crisis and disaster management literature over time shows similar findings, e.g. comparing the weak response of poorly co-ordinated levels of government, and government organisations, in the US during Hurricane Katrina to that of well co-ordinated systems for managing hurricanes in Cuba (see Congress, 2006; Thompson, 2004).

1.5.3 Co-ordination with key players outside the statutory sector

Co-ordination is also necessary with organisations outside government, as many community and business organisations play key roles in responding to immediate and on-going needs during crises (Sledge & Thomas, 2019). As noted earlier, several countries worked with private owners of hotels, convention centres, etc, to treat those with Covid. Meanwhile civil society groups and institutions mobilize rapidly at the local, regional, and national level, along with new groups which form spontaneously to meet the needs of victims, and existing groups that previously had no crisis-related responsibilities shift their focus (Tierney, 2020). It is essential that there is co-ordination with these groups, to avoid haphazard targeting of services and duplication of effort (Sledge & Thomas, 2019). In Ireland, Community Call structures provided this type of co-ordination during Covid-19, with a variety of groups co-ordinating under the leadership of local authorities to effectively provide supports to vulnerable groups (NESC, 2021a).

1.6 Leadership

Co-ordination (and indeed the whole crisis) requires leadership (Trainor & Velotti, 2013). The dimensions of leadership drawn upon during a disaster include flexibility, communication and networking abilities, decision making, teambuilding, sense-making, information seeking, accounting, learning, and planning, among others. A centralised decision-making process at national level also needs to work with decentralised leadership for implementation at local level (Liu et al, 2021). This is because command and control type management which works reasonably well in normal situations will not be effective during emergencies, as there isn't sufficient time to plan on how to adapt to uncertain circumstances. A mix of central command and decentralised decision-making is required (Janssen et al, 2010). An example is the nationally organised civil defense system in Cuba using local leaders to mobilise community grassroots to respond to hurricane crises (Thompson, 2004), and the Community Call system in Ireland during Covid-19 (NESC, 2021a).

1.6.1 An effective State

Linked to leadership is the importance of an effective State. Studies show the critical role of state capacity in achieving positive outcomes during the pandemic, with increased government effectiveness significantly associated with decreased Covid-19 fatality rates. Many things contribute to State capacity and effectiveness, for example, the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of

policy formulation and implementation, and the credibility of the government's commitment to such policies (Serikbayeva et al, 2021).

Woo sees State capacity as the 'set of skills and resources – or competences and capabilities – necessary to perform policy functions'. Moore (1995) argues that analytical, operational, and political skills and competencies are required for good policy design and implementation, at individual, organizational, and systemic levels. Good organisational learning is also important – the States which had experienced SARS were able to deal with Covid-19 more effectively than those which had not (Capano et al, 2020).

For good policy design, policy formulators need to base their decisions mainly on evidence-based knowledge, learning, clear goals, and consistent and coherent policy tools; and governments need the political capacity or will to make or accept decisions in this manner (Capano et al, 2020).

Woo argues that states need political, economy, ideational, technical, infrastructural, military and fiscal capacities to deal with crises (and day-to-day management as well).

1.7 Flexibility and uncertainty

There is a need for flexibility in response, which is evident in a range of ways. All crises represent a level of uncertainty, which must also be dealt with under tight time pressure (Comfort, 2005; Janssen et al, 2010; Capano et al, 2020). In these circumstances, it is rational for emergency plans to be adapted (as outlined above), and for policy actors to adopt a mix of approaches to deal with the crisis. The mix of approaches may work in conflict with each other or even cancel out each other's impacts (Mei, 2020), and mistakes can be made (Capano et al, 2020). An example of trying a mix of approaches is the Community Call response in Ireland, which was adapted a number of times before finding the optimum leadership and co-ordination. Meanwhile, inflexible procedures among key bodies which followed usual procedures and red-tape during Hurricane Katrina in the US contributed greatly to delayed responses (Congress, 2006; White House, 2006). The ability to react with the necessary agility and flexibility needs to pre-exist the crisis and cannot be created overnight (Lai, 2018).

1.8 Communication

Co-ordination (and again the whole crisis) underlines the importance of communication, which works in several ways. The ability to share information within and between organisations during crises and disasters is key. First, mechanisms need to be in place to allow key crisis management organisations to be able to communicate with leaders at a high level. This was not the case in the US during Hurricane Katrina, with several arguing that the downgrading of FEMA from Cabinet level meant that increased levels of bureaucracy needed to be gone through for FEMA officials to communicate with leaders at a high level (Congress, 2006). Secondly, civil society and business also need to be able to communicate with those in public administration. Woo (2020) argues that the inability of civil society groups to gain the attention of policymakers and political leaders in Singapore contributed to the country's 'blind spot' re cases among migrant workers. During Hurricane Katrina, there were examples of cases where the private sector could not get in contact with key decision makers when offering assistance (White House, 2006). Overall, Dunlop et al (2020) argue that the ability of governments to listen, to enable dialogue, and to understand information, was important in ensuring success in Covid-19 interventions. At a practical level, communication also requires the right technology & protocols to share information (Congress, 2006, White House, 2006, Thompson, 2004, Janssen et al, 2010).

1.9 Information

The various phases of disaster or crisis management demand different types of specific information (Janssen et al, 2010). Research capacity is essential to have good data for the mitigation phase, as it can aid early detection (Thompson, 2004, Janssen et al, 2010). For Covid-19, this meant paying attention to the rise of cases nationally and internationally, which was done with varying success. For example, Cyprus benefited from paying attention to what was happening in China; but China and Spain both paid poor attention to the evidence being produced (Petridou et al, 2020;

Royo et al, 2020), which links to the importance of good communication channels between government and a variety of sectors and interests.

National risk mapping is carried out in Cuba, and this preparation helps identify vulnerabilities, and pinpoint key locations for assistance. Cuba also carries out local level community risk mapping before hurricanes hit, identifying those who are vulnerable and may need help to evacuate, as well as vulnerable buildings, etc. This work at local level is carried out by doctors, local women's groups, etc, and updated before each hurricane (Thompson, 2004). In Ireland, Gardai compile lists of vulnerable people locally, and during Community Call these lists were expanded, and other local organisations also put together such lists. This information allows support to quickly be targeted at those who are most vulnerable.

To respond during a disaster, relevant information needs to be collected from multiple sources, verified for accuracy, and shared with responding organisations, in a short time-frame. The right amount of information must be delivered, in a timely way (Janssen et al, 2010). An example of where this did not happen was in New Orleans during Hurricane Katrina. There, the National Weather Service had received reports of levee breaches, but it took 11 hours for this crucial information to reach FEMA, and four more hours for it to reach the White House, meaning much time was wasted in knowing the type of response needed (White House, 2006).

The information gathered needs to be digital. Responses to disasters can be supported by use of e.g. satellite photography of lands affected, GPS for person location, and big data which can help fill gaps in information from other sources (Yu et al, 2018). In Ireland during Covid-19, big data was drawn upon to gain knowledge of population movement, to identify areas where cases might soon grow (e.g. searches on the symptoms of Covid-19), etc. This helped to pinpoint the type of information which needed to be communicated to the population, and locations where particular support might be necessary.

Continuity plans are also needed to ensure that accurate information can be gathered when usual information gathering tech/personnel cannot gather or transmit it. While this was less of an issue during the conditions of Covid-19, it is an immediately pressing issue during natural disasters, when conditions can bring down telephone systems and electricity needed to charge mobile phones; and also prevent access to relevant areas by information-gathering personnel (White House, 2006, Congress, 2006).

Another key issue is one reliable central narrative, and rebuffing of inaccurate information (Congress, 2006). During Hurricane Katrina, when most existing communication systems were not operating properly, exaggerated, unconfirmed claims of crimes and lawlessness were believed in the absence of effective public information to counter them (White House, 2006). During Covid-19 there has been significant mis-information about, for example, possible medications, the side-effects of vaccines, etc. It is important to counter these, and also to consider the position of those who do not speak the predominant language, or who might not trust more reliable information sources.

Equally, good and consistent information needs to be provided to all on what actions to take. Cuba has good, consistent public education on what local residents should do during hurricanes, which is disseminated using schools, workplaces and media (and a centrally controlled media) (Thompson, 2004). In contrast, such information was not consistent in the US during Hurricane Katrina, with for example, wide and confusing variation in evacuation advice in New Orleans, including "precautionary", "voluntary", "recommended", "highly recommended" and "highly suggested" evacuations. Some local authorities in New Orleans never issued a mandatory evacuation order, while others did (Congress, 2006). In Ireland, the gov.ie website provided a central repository of information on Covid-19 restrictions and guidance, along with communications through broadcast media, social media and newspapers.

Consistent information also needs to be used between organisations, with for example, different statutory organisations having different definitions of a person with special needs in New Orleans in 2005. This led to some statutory organisations considering nursing home residents to have special needs, while others did not; and overall inadequate preparation by local agencies to meet their needs. During Covid-19, the variation in health figures collected by regional authorities in Spain meant that no clear national picture of hospital and regional performance was available (Royo, 2020). Inter-operable data communication systems, and data sharing protocols are also necessary. During Covid-19, inter-operable Revenue Commissioner and Department of Social Protection ICT systems in Ireland were helpful in providing financial support to individuals not at work due to lockdown. More widespread data-sharing protocols would

also have been useful. For example Community Call was established to provide support to over 70s, but data sharing protocols meant that it was difficult for organisations with records of those aged over 70s to share this information with others.

1.10 Trust

Trust is another, albeit less tangible, resource which is very important in drawing people together to respond to a crisis. As shown earlier, trust between politicians is important, as is population trust in politicians, and trust between organisations and sectors. Key responder organisations need to trust each other, otherwise they will not work well together (Congress, 2006). Janssen et al (2010) note the importance of what they term ‘boundary spanner’ staff in these organisations, at all levels, who can link their organisation and its information with others, and are trusted by both organisations.

Within society more widely, Wisner et al (2004) stresses the importance of trust between authorities and civil society, which helps mobilise society to react during a crisis. Good levels of social capital in a society provides a good foundation for trust in emergency situations. Putnam (1993: 167) refers to social capital as “features of social organizations, such as trust, norms, and networks, that can improve the efficiency of society by facilitating coordinated actions”. Social capital supports resource sharing, as people trust that the resources they contribute will be well used to deal with the crisis; and it supports the development of co-operative relationships, as organisations trust each other, and trust government. Finally, it helps create high levels of compliance with government guidance, as citizens trust the guidance (Thompson, 2004).

The importance of trust can be seen during Covid-19, with organisations that trusted each other co-operating well (Community Call in Ireland – see NESC 2021a), while the opposite was the case among groups that did not trust each other (some regional governments in Spain). Countries with high levels of trust also had higher vaccination rates, and lower death rates from Covid-19 (Thornton, 2022). At a national and sub-national level, Liu et al (2021) note the importance of culture, social norms, and community-layer organizations in the adoption and implementation of Covid-19 policy responses. For example, in Hong Kong, which was experiencing unrest in 2020, businesses and colleges brought in home working and citizens began wearing masks before direction on this came from Government. This can be linked to the community experience of SARS (Hartley & Jarvis, 2020).

Trust is usually higher in countries where governments deliver economic growth, create jobs, provide access to education, and provide services in an easy and transparent manner. Good political performance on issues of security and corruption are also strongly associated with increasing trust. This is supported by an open society where citizens are able to debate and question government policies, and can have a sense of making a difference in decision-making processes (Blind, 2007). Such conditions are usually built over time, developing trust, and it is difficult to ‘switch on’ good levels of trust during a crisis. However actions during a crisis also contribute to trust. For example, Colfer (2020a) links higher levels of trust in Ireland versus England to issues such as the non-resignation of politicians who broke Covid restrictions in England, while the opposite occurred in Ireland.

1.11 The challenge of balancing economic and health pressures

Some aspects of managing Covid-19 were particular to it, and not as evident during other crises. For example, under Covid-19, governments faced challenges balancing health and economic needs, but the extent to which public policy responses were based on health, political, or economic imperatives varied considerably across Europe, and had a major bearing on the nature and timing of decisions (Colfer, 2020b).

In Switzerland, during the spring 2020 lockdown, the Swiss Federal Office of Public Health took on an intermediary role between epidemiologists and business, and helped to mediate and provide one expert voice, which was helpful. However as summer approached, pressure from two lobby groups representing restaurants led to restaurants re-opening three weeks earlier than first planned, long before other gatherings of similar size (e.g. 5 people gathering in a public place), and before churches. This was linked to the lobby groups exerting pressure on politicians favourable to them, and criticising those who were not. As a result the debate moved away from expert groups and back towards

Parliament. The authors argue that is a move back towards ‘business as usual’ in Switzerland (Sager & Mavrot, 2020), or towards what Mei (2020) would call the normal policy style.

Royo (2020) also argues that officials in Spain moved too quickly in summer 2020 to reopen bars and nightclubs, and to allow tourists back into the country without restrictions. This resulted in a rapid increase in cases that led to the introduction of more stringent restrictions.

1.12 The use of expert advice

The Swiss example shows the tension that existed at various times between medical experts, business and politicians. The extent to which experts were relied on in the management of Covid-19 varied by country. Petridou et al (2020), argues that privileging expert involvement was an important factor in keeping Covid transmission and deaths very low in Cyprus in Spring 2020. He argues that using experts de-politicises management of the crisis, and also saves lives. Colfer (2020a) is of a similar view, arguing that Ireland paid more attention to and gave more airtime to experts, which led to a faster lockdown and lower death rates in Ireland, compared to the UK. However, past experience has an influence here. The UK had relied heavily on experts during the H1N1 flu epidemic in 2008, leading to what was later considered a costly over-reaction to H1N1, and so dependence on these experts was reduced (Colfer, 2020a). A similar experience occurred in France, where vaccination against the H1N1 flu virus in 2009 was estimated to have cost €1 billion, while the virus caused only 342 direct deaths. This led to significant weakening of France’s institution for preparation and response to health emergencies (EPRUS), with its budget divided by 10 between 2007 and 2015 (Hassenteufel, 2020). This shows the political fallout which can occur where the view of experts is considered not to have been effective. On the other hand, the need to be flexible and to plan for a range of risks has to be borne in mind.

1.13 Learning from emergencies and crises

Liu & Geva-May (2021) note that ‘policy scholars need to study crisis policy responses to draw lessons from these ... Such crises are major tests of existing public policies designed to protect communities from harm.’ Capano et al (2020) (among others) note that countries that learnt policy lessons from SARS were better prepared to deal with Covid (e.g. Canada, Hong Kong). There is some evidence that such learning has happened already from Covid-19 – e.g. Beland et al (2020) note that policy windows have already been opened by the pandemic to change healthcare financing in Canada. The OECD has also found that several innovations adopted during Covid-19 have been continued – see Box 1.

Box 1: Changes in centres of government during COVID-19 and planning of the recovery

	<i>Expected to remain in recovery</i>	<i>Changes since COVID-19</i>
Change in staff skill set	15%	19%
Change in the number of staff	0%	23%
Change in CoG resources	12%	27%
Change in the number of topics in CoG portfolio	23%	38%
New protocols to support better data management	23%	46%
Special CoG COVID-19 unit or co-ordinator	26%	46%
New or increased responsibilities (e.g. risk management, policy analysis)	34%	46%
New protocols/guidelines on communication and to combat mis- and disinformation	30%	65%
More stakeholders join CoG co-ordination meetings	54%	73%
Greater number of cross-ministerial co-ordination instances supported	38%	77%

Key: CoG – Centre of Government

Source: Presentation created for Government at a Glance 2021 using data from OECD (2021), Building a Resilient Response: The Role of Centre of Government in the Management of the COVID-19 Crisis and Future Recovery Efforts

There are a range of mechanisms which can be used to draw learning from previous emergencies. For example, following SARS, Singapore set up a Centre for Strategic Future, which is a strategic foresight and horizon scanning unit, located in the Prime Minister's department. It is tasked with collecting and processing extensive data to separate the signal from the noise, and building capacity for addressing future crises (not just pandemics) (Woo, 2020). Woo also argues that states should build up spare/excess capacity, and rethink their reliance on NPM approaches, in order to have the excess capacity needed to deal with crises. This is considered to provide organisational flexibility and a competitive advantage. As noted earlier, Singapore had a reserve of over \$300bn to support them during a crisis.

Meanwhile, in Cuba, all information gathered in community and national risk mapping before a hurricane is used to update the national emergency plans each year. There is a national plan, alongside provincial, ministry, business and community plans. Updated risk-mapping data gathered by a range of local actors is centralised by the local civil defence group before a hurricane (Thompson, 2004).

1.14 Summary

The literature outlined in this chapter suggests a number of lessons which are particularly pertinent for Ireland to consider to prepare for future crises. Summarised, these can be listed as follows:

1. Assess policy against experience of prior emergencies.
2. Recognise that emergency experience and recovery is shaped by pre-emergency conditions. Crisis is not inevitable (i.e. that 'risk' becomes 'disaster'). 'Risk=hazard x vulnerability'.
3. Identify the vulnerable (broadly defined) now and seek out 'hidden' groups.
4. Install policies to mitigate vulnerabilities (risk mapping, social safety nets, land use planning etc.)
5. Hone emergency planning. Ensure clear roles; up-to-date and practised; and focus on the vulnerable.
6. Provide for resources (fiscal, infrastructural, personnel, good procurement and logistics, technology).
7. Involve the community, charity and private sectors to supplement the State's capacity.
8. Provide excess or buffer capacity, challenging the status quo.
9. Provide leadership - capable (trained), transparent and able to coordinate other actors.
10. Recognise uncertainty. Flexibility in rules and structures must be developed in advance.
11. Centralise decision-making, alongside decentralised implementation and links.
12. Co-ordinate effectively. Organisations/staff should know and trust each other in advance.
13. Prepare for communications to the population, between organisations, and 'flow up' of information.
14. Recognise the vital role of information and data for mitigation, preparedness, response and recovery, including an awareness of the risks posed by misinformation.
15. Actively develop and support trust in Government, and organisational trust also.

The relevance of these lessons to Ireland's management of Covid-19 are examined in NESC Report No 158, The Covid-19 Pandemic: Lessons for Irish Public Policy (NESC, 2022).

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