

# The Manchester Briefing on COVID-19

## International lessons for local and national government recovery and renewal

7th briefing: Week beginning 18<sup>th</sup> May 2020

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### What is 'The Manchester Briefing on COVID-19'?

The Manchester Briefing on COVID-19 is aimed at those who plan and implement recovery from COVID-19, including government emergency planners and resilience officers.

Each week we bring together international lessons and examples which may prompt your thinking on the recovery from COVID-19, as well as other information from a range of sources and a focus on one key topic. The lessons are taken from websites (e.g. UN, WHO), documents (e.g. from researchers and governments), webinars (e.g. those facilitated by WEF, GCRN), and other things we find.

We aim to report what others have done without making any judgement on the effectiveness of the approaches, or recommending any specific approach.

### This week

We have provided four briefings:

**Briefing A: Focus of the week – Making decisions under deep uncertainty to recover from COVID-19**

**Briefing B: Lessons you may find helpful from across the world**

**Briefing C: Case Study - Measures to ensure the safe return of pupils to school**

**Briefing D: Useful webinars**

### Other information

Please register at [ambs.ac.uk/covidrecovery](https://ambs.ac.uk/covidrecovery) if you would like to receive future briefings. If this is the first briefing you have received and would like to be sent the previous ones, please email [events@manchester.ac.uk](mailto:events@manchester.ac.uk).

If you would be willing to contribute your knowledge to the briefing (via a 30-minute interview) please contact [Duncan.Shaw@manchester.ac.uk](mailto:Duncan.Shaw@manchester.ac.uk)

We also produce a blog series which you can access [here](#) along with other news about our team and our work.

## Briefing A: Focus of the week – Making decisions under deep uncertainty to recover from COVID-19

### Introduction

We focus here on decision-making and the challenges that have emerged through COVID-19, where governments' decision-making approaches have been scrutinised, and we suggest the integration of qualitative approaches for decision-making. Some government responses globally to COVID-19 have been challenged for being late, loose, unethical, or not respecting human rights:

*For example: the Italian government made a last-minute social lockdown decision, which people argued exposed the country to significant risk (the lockdown was announced only when a 100% increase in total deaths was observed in 48 hours before the decree<sup>1</sup>). The herd immunity strategy that was initially adopted in the UK was considered by some as poor<sup>2</sup>. And whilst a few governments sought to control the virus by adopting forceful measures early (e.g. China and South Korea), the long-term effectiveness of these measures is still unclear.*

At present, international organisations and analysts are exploring correlations between the response strategies in different countries and the impact of COVID-19. Although such correlations can be informative, in some contexts quantitative approaches to decision making are limited. In some countries the confused responses to COVID-19 may be a manifestation of a systemic weakness, rather than the result of decision-maker error. Since the 1950s, qualitative tools and techniques have been developed to address complexity and uncertainty and these are needed now during such challenging times.

This brief considers the uniqueness of pandemics, the suitability of the existing approach to making decisions, and suggests ways to integrate systems approaches that are more compatible with complexity and high uncertainty.

**There is a need to identify decision-making processes and strengthen them for the challenges of COVID-19 response, recovery and rebuild.**

### Pandemics are different

There are different types of problems<sup>3</sup>. Puzzle-like problems (also called complicated) are difficult to solve but everyone knows that *a solution* exists and when it is obtained everyone agrees that this is *the solution*. Complex problems of deep uncertainty (also called wicked problems) generate questions that can have only contingent answers and hence *no one right solution*. Even after the event, there will be no agreement that this, or any other option, was the best solution.

Existing systems can successfully predict the effects of some disasters (e.g. where flood waters will reach at different heights). Pandemics are different; they are mysteries because of biological and social phenomena.

- Biological because they are influenced by the bio-behaviour of the virus and hosts (e.g. infection rate and immunity).

<sup>1</sup> <https://www.nytimes.com/interactive/2020/04/05/world/europe/italy-coronavirus-lockdown-reopen.html>

<sup>2</sup> <https://www.ft.com/content/249daf9a-67c3-11ea-800d-da70cff6e4d3>

<sup>3</sup> <https://www.smithsonianmag.com/history/risks-and-riddles-154744750/>

- Social because their impact depends on human behaviours (e.g. habits and norms that influence infection rate).

Predicting the rise and course of a pandemic therefore requires a sophisticated model of key variables along with understanding of possible relationships between them.

*For example, a Chinese team discovered that the virus's ability to mutate was underestimated and reported 33 mutations since December 2020, which may partly explain the varying impact of the virus in different countries<sup>4</sup>.*

Even if a rough probabilistic estimate of, for example, possible future mutations was obtainable, it would be unlikely to be very helpful for decision-makers in knowing if it will happen or what to do<sup>5</sup>.

*For example, some national governments were taken by surprise by the virus, despite having experience of similar health emergencies (e.g. SARS, Ebola) and predictions of a pandemic by scholars and scientists<sup>6</sup>.*

As such, many decision-making practices during pandemics need to cope with *deep uncertainty* – they have many continuously changing influences which can produce a wide range of outcomes that cannot be accurately predicted<sup>7</sup>.

### Models used for making decisions

When making simple decisions, decision-makers can depend on predictions from mathematical models using assumptions and data inputs e.g. how much PPE to purchase.

*For example, Imperial College London have developed a hospital planning tool<sup>8</sup>. Planners use numeric inputs from survey data, users, and existing medical assumptions to model the spread of COVID-19 and use that to predict the need for hospital beds.*

However, some models are much more complex, enhanced by artificial intelligence (AI), algorithms, big data and sophisticated formulae, yet they can be used subjectively, with biases<sup>Error! Bookmark not defined.</sup>. Their inputs are based on historic data (or data from other contexts), which brings a risk when depending too heavily on their outputs<sup>9</sup>.

*For example, when AIDS spread the World Health Organisation (WHO) designed a complex model of the demographics in southern Africa. One parameter in the initial model was the average number of sexual contacts of a person per year, obtained from observations. However, an average of 50, for example, does not tell how many people were involved in the 50 contacts, which is critical for understanding and predicting the spread of the virus<sup>10</sup>.*

<sup>4</sup> <https://news.sky.com/story/coronavirus-has-mutated-into-more-than-30-strains-say-scientists-in-china-11976380>

<sup>5</sup> King, M.A. and Kay, J.A. (2020). *Radical uncertainty: decision-making for an unknowable future*. London: The Bridge Street Press.

<sup>6</sup> For example, Martin Rees predicted in 2003 that by 2020 there will be a biological event (Rees, M. (2003) *Our Final Hour: A Scientist's Warning: how Terror, Error, and Environmental Disaster Threaten Humankind's Future in this Century--on Earth and Beyond*, New York: Basic books.)

<sup>7</sup> Marchau, V.A.W.J. et al. (2019). *Decision making under deep uncertainty: from theory to practice*. Cham: Springer.

<sup>8</sup> <https://www.imperial.ac.uk/mrc-global-infectious-disease-analysis/covid-19/covid-19-planning-tools/>

<sup>9</sup> <https://www.gov.uk/government/publications/gad-using-models-in-decision-making>

<sup>10</sup> <https://www.who.int/bulletin/volumes/90/11/12-102574/en/>

### What do we need to consider for recovery?

COVID-19's deep uncertainty is likely to continue in the recovery and rebuild periods. The evidence on disasters, complexity management, and soft operations, as well as the learning from the current global response to COVID-19, offers insight to principles that can guide qualitative decision making, and how to mitigate the bias and subjectivity that may be associated with them.

Recovery during pandemics has two aspects:

- *Recovery* that aims to enhance the viability and capability of the response system in the short term. This is needed because the duration and the requirements of the response are unpredictable, so the system should be ready to recover the depleting response system (resources, staffing, improving operations) and maintain the basic wellbeing of the system that is under progressive pressure.
- *Rebuild* is longer-term and aims to build stronger, more resilient, and sustainable systems and societies.

**Error! Reference source not found.** depicts a response scenario to a random pandemic showing when to consider response, recovery and rebuild. The significance of this distinction is that decision-makers need to know what actions are appropriate in each stage of the pandemic.

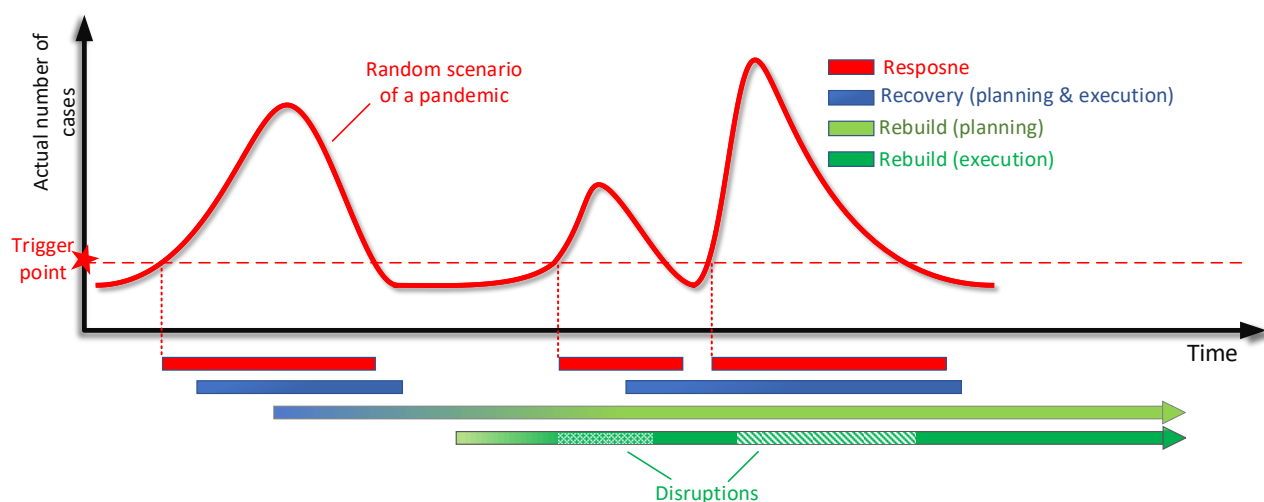


Figure 1: Response, recovery and rebuild in responding to a pandemic

Decision-making should be guided by:

#### ■ Vision

Short-term emergency response (without considering strategic consequences) may be necessary given their relatively short duration. However, a series of short-term decisions over a lengthy crisis may build a situation that makes rebuild more challenging.

*For instance, response decisions may result in depleting or losing resources crucial for rebuild (e.g. financial, equipment, staff, volunteers, infrastructure, skills, and knowledge); or establish behaviour, expectations, and norms that hinder a sustainable and resilient future.*

Decision-making in pandemics should therefore be guided by a **vision** during the response, recovery, and rebuild periods. Decision-makers can do this by asking the question ‘*of what, reasonably, are we trying to achieve? What is our vision?*’ The answer to this can be framed as a narrative that will form the goal and a guiding vision for the decisions made.

*For instance, the narrative for an emergency response may be: “We are maintaining the viability of our systems and society during COVID-19”, and for the recovery/rebuild may be: “We are building a society that is resilient to future crises”. A discussion can then be focused on how to achieve this vision considering the current context, regardless of a model’s predictions.*

#### ■ Criteria developed from the vision

Criteria are the main themes that inform how the vision can be achieved. Each criterion may be divided into manageable sub-criteria that contribute to achieving the relevant goals that are developed from the vision. The aim during the response as well as recovery stages is to continuously prioritise and enhance these criteria to ensure the system’s viability.

*For instance, to achieve resilience against COVID-19, the system may need to achieve sophisticated digital infrastructure, agile health services, robust voluntary sector, and strong coordination across public agencies. In a highly complex context, the number of criteria can be vast and should be identified and prioritised considering their relevant contribution to the vision.*

#### ■ Intuition as one aspect of the process

It is common to see leaders using their intuition to make decisions under pressure. Intuition can be an excellent complement to qualitative decision-making because it harnesses the knowledge and experience of people involved. However, this can also be criticised for being subjective or encouraging bias where people blindly follow intuition, ignoring contradictory advice.

#### ■ Contextual influences

Lessons learned from other countries and their practices are contextual and so their suitability should be evaluated for the relevant context. It may also be worth considering contextual differences within the same country or region, and to give local authorities the flexibility to adapt these measures according to their contexts.

*For instance, the phone tracking and data collection measures to enforce lockdown in China are not immediately applicable in England because of the differences in culture, policies, and social values. However, these lessons may be modified to fit the context, as was done in some countries where phone tracking was done voluntarily.*

#### ■ Ethics

Ethical decisions are considered in light of a set of agreed moral values, such as respecting people's wellbeing and dignity, the environment, justice, and protecting social solidarity. These values, however, are relative to context.

*For example, immigrant workers in Singapore live in high-density units with poor infrastructure compared to other urban areas. Equality issues and their consequences only surfaced after identifying these units as a main spread source of COVID-19<sup>11</sup>.*

#### ■ Engaging communities in the decision-making process

Communities are key stakeholders because they are directly affected by many decisions. They are also a rich source of data and ideas for decision making. Representatives of local communities should be involved in decision-making discussions and consulted on the feasibility of decisions. Digital platforms (e.g. social media) can be used to collect data and feedback from relevant communities.

*For example, Singapore made available chatbots (chat robots) to people to express their worries and get suggestions on how to deal with the issues they face<sup>12</sup>. Such chatbots can also be used to harness ideas and suggestion that can help in the decision-making process.*

#### ■ Bias

Subjectivity and bias may be an issue for qualitative decision-making because it involves people's intuition, personal values, and opinion. In the decision-making literature, bias is often seen as a hindrance to robust decision-making. Potential biases are reduced by adopting a holistic decision-making process, meaning that the bigger picture is considered. In practice, this may mean engaging a wide range of stakeholders because sustainable solutions are those that stakeholders agree are feasible<sup>13</sup>. The nature of these discussions, and the stakeholders to include, will depend on prevailing issues. For example, a short discussion between a small number of stakeholders may be necessary during the response phase, while a longer discussion with a wider range of stakeholders may help to plan rebuild.

In the short-term, qualitative decision-making techniques can overcome a reliance on models and predictions. In the long-term, policies can be developed to inform decision-makers on how to use qualitative approaches in disaster preparedness, response, recovery, and rebuild.

#### Key challenges

- There is a need to identify and address the systemic weaknesses in decision-making for a more effective response, recovery, and rebuild from COVID-19.
- Decision making should be guided by vision, not only predictions; using criteria derived from the vision; with intuition one aspect of the process, along with consideration of ethics and bias. The influence of context should be considered, along with identifying and engaging with a wide range of stakeholders in the decision-making process.

<sup>11</sup> <https://theconversation.com/this-is-why-singapores-coronavirus-cases-are-growing-a-look-inside-the-dismal-living-conditions-of-migrant-workers-136959>

<sup>12</sup> <https://www.tech.gov.sg/products-and-services/responding-to-covid-19-with-tech/>

<sup>13</sup> Checkland, P. and Scholes, J. (1999) Soft Systems Methodology in Action. Chichester, UK: John Wiley & Sons Ltd.



## Briefing B. Lessons you may find helpful from across the world

We provide the lessons under six categories, with sub-categories for ease of reference. We have selected lessons that are of specific interest to the recovery process although many also relate to the response phase, and the likely overlap between response and recovery.

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Recovery: Categories of impact	Actions	Country/ Region	Source
<b>Humanitarian Assistance</b>			
Preparedness	<p><b>Consider advising citizens to prepare for self-isolation in the event of a second wave of COVID-19, including:</b></p> <ul style="list-style-type: none"> <li>▪ <b>Advising citizens to remain prepared for a future lockdown</b> - provide information to citizens about 'preparedness kits' that they may still want to keep available. This kit can include non-perishable foods, hygiene and cleaning products, basic medical supplies, and entertainment items. Consider providing information on items to purchase based on age or gender</li> <li>▪ <b>Advising citizens not to panic buy</b> - if advising citizens to develop 'preparedness kits', provide clear information about how many items are reasonable per household, explain why over-stockpiling is not needed and detrimental</li> <li>▪ <b>Advising citizens about lockdown procedures</b> - if advising citizens to develop 'preparedness kits', provide clear information to reiterate lockdown procedures such as social distancing, self-isolation, monitoring of systems, access to services during a lockdown</li> </ul>	USA	Training Information Bulletin Governor's Office of Emergency Services
Health and wellbeing	<p><b>Consider that Testing, Tracking and Tracing will be pivotal in stopping any resurgence in the virus, including:</b></p> <ul style="list-style-type: none"> <li>▪ Dissemination of information about resurgence on a transparent website</li> <li>▪ Encourage private healthcare facilities to undertake free testing</li> </ul> <p>Use volunteers to distribute testing kits as widely as possible, considering their safety</p>	Iceland	Civil Defence



Recovery: Categories of impact	Actions	Country/ Region	Source
Health and wellbeing	<p><b>Consider activities that promote compassion.</b> In Louisville a city of 800k people in the USA, the Mayor led three activities to promote compassion in dealing with the effect of COVID-19. This has been underpinned by a value-based renewal of the city:</p> <ul style="list-style-type: none"> <li>▪ Respect for each other</li> <li>▪ Compassion for everyone to protect people</li> <li>▪ Equity so that everyone feels connected to a bright and hopeful future</li> </ul> <p>Three important actions to facilitate this were:</p> <ul style="list-style-type: none"> <li>▪ Donations which generated \$10m USD which could be allocated to good causes</li> <li>▪ Digital equality for all</li> <li>▪ The “Lift Up Lou” campaign; a morale building initiative to help the city to focus on working together. ‘Lift Up Lou’ involved shared online activities that citizens could jointly participate in and a community song produced collaboratively by 30 local, notable musicians</li> </ul>	USA	<a href="https://www.youtube.com/watch?time_continue=262&amp;v=AcsiqH5AZ7g&amp;feature=emb_logo">https://www.youtube.com/watch?time_continue=262&amp;v=AcsiqH5AZ7g&amp;feature=emb_logo</a>
Mental Health	<p><b>Encourage people to take care of themselves and reduce their stress</b> by taking the following steps:</p> <ul style="list-style-type: none"> <li>▪ Take deep breaths, stretch, or meditate. Try to eat healthy, well-balanced meals, exercise regularly, and get plenty of sleep</li> <li>▪ Take breaks from watching, reading, or listening to news stories, including social media</li> <li>▪ Make time to unwind. Try to do some activities you enjoy</li> <li>▪ Connect with others while practicing social distancing. Talk with people you trust about your concerns and how you are feeling</li> <li>▪ Call your healthcare provider if stress gets in the way of your daily activities for several days in a row</li> <li>▪ Only share accurate information about COVID-19 with others, and understand the actual risk that you and the people you care about face</li> </ul>	USA	<p>The Centres for Disease Control and Prevention (CDC)</p> <a href="https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/managing-stress-anxiety.html">https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/managing-stress-anxiety.html</a>

Recovery: Categories of impact	Actions	Country/ Region	Source
Vulnerable people	<p><b>Consider how the gender pay gap and composition of leadership positions impact wage earners.</b></p> <ul style="list-style-type: none"> <li>Women are more likely to carry out unpaid work or serve as care givers. The pandemic is likely to negatively impact their livelihoods and dramatically increase their unpaid care work</li> <li>Women constitute over two-thirds of workers in the health and social sector globally, placing them on the frontlines of the pandemic response, but with a persistent gender pay gap and fewer leadership positions than their male counterparts</li> <li>These issues can restrict access to resources, decision making and the ability to take preventive measures</li> </ul> <p>Close consultation is needed with women's organisations i.e. groups for mothers, carers, women's rights, domestic violence</p>	Asia- Pacific- UNDRR	
<b>Economic</b>			
Business Regeneration	<p><b>Consider support for small/medium sized enterprises (SMEs) to help regenerate the economy and livelihoods.</b> In Korea, SMEs are being supported through national campaigns. Consumers are encouraged to purchase local products through drive-through stations. This supports local vendors selling their products direct to the consumer, and helps consumers who may be able to purchase items at lower prices due to lower overhead costs. Corporate buyers are supported by government through virtual meetings to match buyers to supplier SMEs, in consultation with the Korea SMEs and Startups Agency and Korea International Trade Association. The government will hold virtual consultations online for 400 SMEs at least twice a month (total of 10 times), over the period of 4 months (April to July 2020). The government will invite 30-40 buyers from abroad and 30-50 SMEs per session to match corporate buyers to Korean SME providers. The government will also provide consultation and follow up measures.</p>	Korea	<a href="http://ncov.mohw.go.kr/en/infoBoardView.do?brdId=15&amp;brdGubun=151&amp;dataGubun=&amp;ncvContSeq=2180&amp;contSeq=2180&amp;board_id&amp;gubun">http://ncov.mohw.go.kr/en/infoBoardView.do?brdId=15&amp;brdGubun=151&amp;dataGubun=&amp;ncvContSeq=2180&amp;contSeq=2180&amp;board_id&amp;gubun</a>

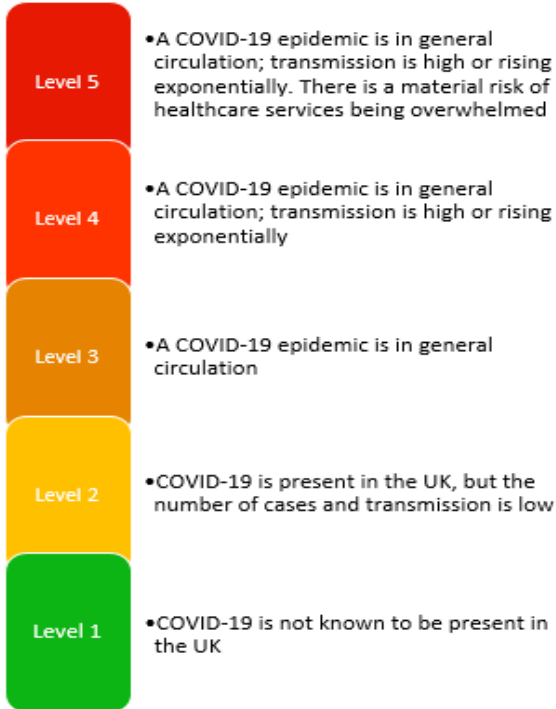
Recovery: Categories of impact	Actions	Country/ Region	Source
Business Regeneration	<p><b>Consider how to support labour markets for recovery.</b> The World Economic Forum suggests 5 key areas which businesses should focus their recovery:</p> <p><b><i>Reskilling and upskilling deeply human skills as well as digital skills</i></b></p> <ul style="list-style-type: none"> <li>It is critical that employers emphasise retraining workers and that governments build upskilling and reskilling into the fiscal stimulus they are injecting into economies</li> </ul> <p><b><i>Supporting the jobs of tomorrow</i></b></p> <ul style="list-style-type: none"> <li>Employers should focus on professions that care for people, support the planet, manage new technologies and communicate products and services</li> </ul> <p><b><i>Prioritizing redeployment and re-employment</i></b></p> <ul style="list-style-type: none"> <li>Rapidly redeploy furloughed workers to high-demand roles, such as logistics and care provision</li> <li>Provide job market insights, job market intermediation (match-making services), and job-search assistance</li> </ul> <p><b><i>Re-evaluating essential work and improving the quality of jobs.</i></b></p> <ul style="list-style-type: none"> <li>Consider increasing the payment of essential workers and improving their job security</li> </ul> <p><b><i>Resetting education, skills and jobs systems for post-pandemic recovery</i></b></p> <ul style="list-style-type: none"> <li>Critical collaboration between employers, governments and workers both nationally and globally is essential to reskilling and upskilling individuals- especially those in low paid precarious jobs</li> </ul>	WEF-All	<a href="https://www.weforum.org/agenda/2020/05/the-future-of-work-is-here-5-ways-to-reset-labour-markets-after-coronavirus-recovery/">https://www.weforum.org/agenda/2020/05/the-future-of-work-is-here-5-ways-to-reset-labour-markets-after-coronavirus-recovery/</a>
<b>Infrastructure</b>			
Opening Schools	<b>Consider measures to reopen schools. See Briefing C: Case Study - Measures to ensure the safe return of pupils to school</b>		

Recovery: Categories of impact	Actions	Country/ Region	Source
Supply Chain Management	<p><b>Consider develop a dedicated taskforce to stabilise the supply of personal protective equipment (PPE).</b> In Korea, specific measures were taken to stabilise the supply of face masks in particular. The government developed an emergency joint meeting of relevant ministries and a joint inspection team to conduct daily inspections and to handle reports on unfair sales of masks.</p> <ul style="list-style-type: none"> <li>▪ The Ministry of Economy and Finance set up its own taskforce, independent of the joint government inspection team, to inspect the mask supply chain</li> <li>▪ The Ministry of Economy and Finance formed a 64-person taskforce within a day. They visited: manufacturing companies to listen to their difficulties; stores authorized to sell masks; factories, and the distribution hubs to inspect the situation on production and distribution, and difficulties in the supply and demand of raw materials</li> <li>▪ The taskforce inspected 751 sites from February 28 to March 9, and allowed the onsite inputs to be appropriately reflected in policies which ultimately stabilised supply.</li> </ul>	Korea	<a href="http://ncov.mohw.go.kr/en/infoBoardView.do?brdId=15&amp;brdGubun=151&amp;dataGubun&amp;ncvContSeq=2180&amp;contSeq=2180&amp;board_id&amp;gubun">http://ncov.mohw.go.kr/en/infoBoardView.do?brdId=15&amp;brdGubun=151&amp;dataGubun&amp;ncvContSeq=2180&amp;contSeq=2180&amp;board_id&amp;gubun</a>
<b>Environmental</b>			
Urban Planning	<p><b>Consider environmentally-friendly strategies that can support job creation.</b> This could include:</p> <ul style="list-style-type: none"> <li>▪ Retrofitting programmes to make buildings more energy-efficient</li> <li>▪ Mass tree planting</li> <li>▪ Investment in solar and wind power</li> <li>▪ Building infrastructure required for increased consumption and use of electric cars such as improved electricity networks, and public and personal capacity for charging stations</li> </ul> <p>Additionally, due to lockdown these measures may not be as disruptive to people's daily lives compared to, for example, offices being retrofitted while in constant use</p>	Italy, Australia,  Hong Kong, Portugal, Colombia, USA, Korea	Chief Resilience Officers  <a href="https://www.straitstimes.com/world/cities-step-up-bid-for-green-pandemic-recovery">https://www.straitstimes.com/world/cities-step-up-bid-for-green-pandemic-recovery</a>

Recovery: Categories of impact	Actions	Country/ Region	Source
General Environmental	<p><b>Consider how to reduce landfill and maintain recycling projects.</b></p> <p>While COVID-19 has had positive impacts on pollution levels, the creation of additional plastic waste from PPE and disposable items is going to landfill. Consider:</p> <ul style="list-style-type: none"> <li>▪ Campaigns to remind people and businesses of the disadvantages of single-use plastics, and the benefits of reusable containers i.e. water bottles and carrier bags</li> <li>▪ Campaigns to educate and remind people and businesses of the environmental impact of non-recyclable takeaway food packaging</li> <li>▪ What can be done to mitigate the environmental impacts of increasing medical waste that is contaminated or not economical to recycle</li> </ul> <p>PPE for recycling plant workers will be required to reduce waste going to landfill and consideration will need to be given to mitigate the impacts of dropping oil prices limited on the economies of recycling.</p>	USA	<a href="https://www.wired.com/story/coronavirus-pandemic-recycling-crisis/">https://www.wired.com/story/coronavirus-pandemic-recycling-crisis/</a>
General Environmental	<p><b>Consider how long-term environmental impacts can be realised.</b></p> <p>This may include:</p> <ul style="list-style-type: none"> <li>▪ Reimagining how cities are built and organised e.g. Brussels is creating 40km of new cycle paths; France is providing cyclists with subsidies; UK has announced a £2bn infrastructure scheme to encourage more walking and cycling</li> <li>▪ Accelerating environmentally friendly projects such as increased investment in electric vehicle infrastructure</li> </ul> <p>Also consider the unintended consequences of green infrastructure solutions. In the case of battery production for electric vehicles, consideration should be given to the environmental degradation caused by mining for battery components for electric vehicles, the ethical considerations of using mines in developing countries, the lifecycle of batteries and how they will be recycled in large quantities.</p>	Europe	<a href="https://www.theguardian.com/environment/2020/may/17/after-the-covid-19-crisis-will-we-get-a-greener-world">https://www.theguardian.com/environment/2020/may/17/after-the-covid-19-crisis-will-we-get-a-greener-world</a>  Business Continuity, Security & Risk Management Expert

Recovery: Categories of impact	Actions	Country/ Region	Source
<b>Communication</b>			
General Communications	<p><b>Consider communicating strategies with the public about how to stay safe for any type of disaster.</b> Strategies should broadly include:</p> <ul style="list-style-type: none"> <li>▪ Sending alerts to the public so they know what to do</li> <li>▪ Encouraging the public to make a plan to protect and connect with people close to them</li> <li>▪ Educating the public about getting to safety with key items they would need</li> <li>▪ Educating the public about staying safe at home when they can't leave</li> <li>▪ Encouraging the public to help friends and neighbours get ready</li> </ul>	USA	<a href="https://www.vall eyvision.org/wp-content/uploads/Disaster-Ready-Guide-Digital-SelfPrint-Eng.pdf">https://www.vall eyvision.org/wp-content/uploads/Disaster-Ready-Guide-Digital-SelfPrint-Eng.pdf</a>
Pandemic reporting	<p><b>Consider how to encourage evidence-based media policies around pandemic reporting:</b></p> <ul style="list-style-type: none"> <li>▪ Clearly identify authoritative sources</li> <li>▪ Encourage social media companies to correct disinformation</li> <li>▪ Develop policies on media use of traumatic footage</li> <li>▪ Mitigate individuals' risk of misinformation</li> <li>▪ Improve health literacy and critical thinking skills</li> <li>▪ Minimise sharing of misinformation through fact checking</li> </ul>	UK	<a href="https://www.the Lancet.com/pdfs/journals/lanpsy/PIIS2215-0366(20)30168-1.pdf">https://www.the Lancet.com/pdfs/journals/lanpsy/PIIS2215-0366(20)30168-1.pdf</a>
<b>Governance and legislation</b>			
Legislation	Consider re-evaluating legislation around business applications. Government may consider an industry-led recovery that draws on close partnerships with industry leaders to re-evaluate local, regional and national legislation on business applications to facilitate recovery. This may include making applications for businesses easier, easing legislation and increased legal support for businesses to expedite business renewal.	Australia	Risk Manager



Recovery: Categories of impact	Actions	Country/ Region	Source
Easing Lockdown	<p>Consider the criteria used to ease lockdown restrictions. In the UK, five tests must be met:</p> <ul style="list-style-type: none"> <li>Protect the healthcare system and its ability to cope so it can continue to provide critical care and specialist treatment</li> <li>The daily death rates from coronavirus must come down.</li> <li>Reliable data must show the rate of infection is decreasing to manageable levels.</li> <li>Have confident that testing capacity and PPE are being managed, with supply able to meet not just today's demand, but future demand.</li> <li>Have confidence that any changes made not risk a second peak of infections</li> </ul> <p>Five alert levels are developed to guide the level of lockdown restrictions:</p>  <ul style="list-style-type: none"> <li><b>Level 5</b> • A COVID-19 epidemic is in general circulation; transmission is high or rising exponentially. There is a material risk of healthcare services being overwhelmed</li> <li><b>Level 4</b> • A COVID-19 epidemic is in general circulation; transmission is high or rising exponentially</li> <li><b>Level 3</b> • A COVID-19 epidemic is in general circulation</li> <li><b>Level 2</b> • COVID-19 is present in the UK, but the number of cases and transmission is low</li> <li><b>Level 1</b> • COVID-19 is not known to be present in the UK</li> </ul>	UK	<a href="https://www.gov.uk/government/speeches/gavin-williamson-speech-on-covid-19-response">https://www.gov.uk/government/speeches/gavin-williamson-speech-on-covid-19-response</a>

## Briefing C: Case Study - Measures to ensure the safe return of pupils to school

The impact of school closures, especially nursery and primary schools, carries high social and economic costs as learning is interrupted, parents are unprepared for home schooling and for the impacts this has on childcare<sup>1</sup>. Working parents may have no choice but to leave children alone when they have to work, or to miss work to take care of their children. This can impact child nutrition, social isolation and increase children's exposure to violence and exploitation<sup>2</sup>. Schools in Denmark, China, Korea and Taiwan, have begun to open. In Korea, the government has incorporated the concept of digital classrooms into current educational legislation to develop a 'future-orientated' approach to online education<sup>3</sup>.

### A number of measures for adjusting the school day have been identified:

- Consider staggering the school day so children arrive in different time blocks. In Denmark the start and end of the school day is split into three 15-minute windows, and the day finishes at 2pm to reduce risk of new rules feeling oppressive<sup>4</sup>. This helps reduce crowding at the school gates.
- Parents are not allowed inside the building and must collect their children at outside while observing social distancing rules- consider marking lines, and creating one-way systems for parents to collect children in playgrounds.
- Consider rotating year groups into schools for a week at a time<sup>5</sup>
- Consider changes to lesson delivery e.g. restrict movement of teachers one teacher per class. Consider how this may impact which classes teachers will need to deliver and how this can be effectively timetabled. Also consider making class sizes smaller by splitting classes in two and have taught rotas between staff<sup>6</sup>.
- Limit handling of children's books through increased self-marking activities<sup>7</sup>
- Provide allocated desks to each child with social distancing requirements in place. Be pragmatic and realistic about how to ensure social distancing when children are not at their desks, e.g. how they will traverse corridors or stairways, how to manage behaviour at break times<sup>8</sup>.
- Consider reducing creative activities such as art, and 'carpet time' for primary school children. Or requesting personal supplies i.e. scissors or paintbrushes are brought in. Consider how creative classes can be taken outdoors to make learning fun, and safer<sup>10</sup>.

<sup>1</sup> <https://en.unesco.org/covid19/educationresponse/consequences>

<sup>2</sup> <https://en.unesco.org/covid19/educationresponse/consequences>

<sup>3</sup>

[http://ncov.mohw.go.kr/en/infoBoardView.do?brdId=15&brdGubun=151&dataGubun&ncvContSeq=2180&contSeq=2180&board\\_id&gubun](http://ncov.mohw.go.kr/en/infoBoardView.do?brdId=15&brdGubun=151&dataGubun&ncvContSeq=2180&contSeq=2180&board_id&gubun)

<sup>4</sup> <https://www.tes.com/news/coronavirus-reopened-schools-show-new-normal>

<sup>5</sup> <https://www.theguardian.com/education/2020/may/03/revealed-year-six-primary-school-pupils-may-return-on-1-june>

<sup>6</sup> <https://www.tes.com/news/coronavirus-reopened-schools-show-new-normal>

<sup>7</sup> <https://www.tes.com/news/coronavirus-reopened-schools-show-new-normal>

<sup>8</sup> <https://www.theguardian.com/education/2020/may/03/revealed-year-six-primary-school-pupils-may-return-on-1-june>

<sup>9</sup> <https://www.telegraph.co.uk/news/2020/04/16/social-distancing-will-simply-impossible-schools-re-open-leading/>

<sup>10</sup> <https://www.tes.com/news/coronavirus-reopened-schools-show-new-normal>

- Stagger lunch breaks and class times to avoid the risk of too many people moving through the school at one time.

Alongside restructuring the school day, re-opening of schools requires attention to infrastructure. This may include:

- Installing additional handwashing facilities so children have to wash hands before entering school and then throughout the day – in Denmark children wash their hands six to eight times a day.
- Measure temperatures before students are allowed on site. In China some schools have installed a system at the entrance of the school to record temperatures. Any person displaying a temperature above 37.3 degrees is taken for further temperature checks.
- Installing hand sanitisation stations and bins for discarded masks in and around the school site. China also has isolation areas should anyone be taken ill during the course of the day.
- Utilising additional buildings such as church halls or community centres if the school does not have the required space to maintain social distancing and its cohort of students<sup>11</sup>.
- Accounting for reduced workforce availability due to illness, and PPE requirements<sup>12</sup>

There is an urgency to return pupils to schools to support their health and well-being and to relieve pressures on working families who may be experiencing increased financial hardship as a result of having children at home. It is important that robust scientific evidence is used to make such decisions; a study from Germany found children were as likely to spread coronavirus as adults<sup>13</sup> which suggests caution is required. However, lessons from Denmark, China and Taiwan could provide useful insights into practical adaptation and innovation to support a safe return to school.

<sup>11</sup> <https://www.tes.com/news/coronavirus-reopened-schools-show-new-normal>

<sup>12</sup> <https://www.theguardian.com/education/2020/may/03/revealed-year-six-primary-school-pupils-may-return-on-1-june>

<sup>13</sup> <https://www.theguardian.com/world/2020/apr/30/coronavirus-scientists-caution-against-reopening-schools>

## Briefing D: Useful webinars

Taken place in the past week	Webinar Title	Link to presentation
12.5.2020	Universal Health Coverage (UHC) and the Coronavirus Crisis – Challenges and Responses: maintaining essential health services while responding to COVID19	<a href="https://socialprotection.org/universal-health-coverage-uhc-and-coronavirus-crisis-%E2%80%93-challenges-and-responses-maintaining">https://socialprotection.org/universal-health-coverage-uhc-and-coronavirus-crisis-%E2%80%93-challenges-and-responses-maintaining</a>
12.5.2020	The Big Rethink: 'The How, What, Where of Work	<a href="https://newcities.org/the-big-rethink/">https://newcities.org/the-big-rethink/</a>
13.5.2020	Cities Resilience Stories: Applying the principles of resilience building and DRR for the unexpected	<a href="https://www.youtube.com/watch?v=1uo-S36-sc0&amp;list=PLsgoH3BX-BpQqJMp8PUMB9P5gdzuveYkC&amp;index=4&amp;t=0s">https://www.youtube.com/watch?v=1uo-S36-sc0&amp;list=PLsgoH3BX-BpQqJMp8PUMB9P5gdzuveYkC&amp;index=4&amp;t=0s</a>
14.5.2020	COVID-19 Global Leadership Series. Protecting Vulnerable Populations	<a href="https://cities4health.org/webinars">https://cities4health.org/webinars</a>
14.5.2020	UNDRR Asia-Pacific Webinar: The Human Rights Dimensions of the COVID-19 Pandemic	<a href="https://www.undrr.org/event/webinar-human-rights-dimensions-covid-19-pandemic">https://www.undrr.org/event/webinar-human-rights-dimensions-covid-19-pandemic</a>
15.5.2020	The urban resilience talk show - with Seth Schultz, executive director for the Resilience Shift and Lead Author of the IPCC 1.5 degree report	
<b>Coming up</b>		
Date	Webinar Title	Link to registration
27.5.2020	COVID-19 - Impact on global supply chains	<a href="https://www.alliancembs.manchester.ac.uk/events/?day=18&amp;month=05&amp;year=2020&amp;search=custom-2years">https://www.alliancembs.manchester.ac.uk/events/?day=18&amp;month=05&amp;year=2020&amp;search=custom-2years</a>
27.5.2020	National Policy on COVID-19 Response and Current Status	<a href="https://www.ustream.tv/medicalkorea">https://www.ustream.tv/medicalkorea</a>
28.5.2020	Negotiating access for humanitarian protection	<a href="https://phap.org/28may2020">https://phap.org/28may2020</a>