D1.1 – Recommendations for governance and policies in the n-COV-2019 response

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Executive Summary

This report on COVID-19 Crisis Governance is Deliverable 1.1 of the project "HERoS - Health Emergency Response in Interconnected Systems." Drawing on a selective review of published literature, theoretical constructs from organization sciences, public administration and political sciences, and feedback from experts in three countries (Netherlands, Finland and Italy), it conceptualizes the COVID-19 outbreak and its consequences as a **wicked problem**; a complex and dynamic societal challenge for which there is no single and widely accepted solution. It also analyzes the outbreak as a **slow burning crisis**, with long lasting effects well beyond when the "hot phase" of the crisis is over. The COVID-19 crisis has no clear beginning or end, which means that it can remain undefined and poorly understood for a long time.

This report utilizes social scientific methods, particularly (policy) document analysis, discourse analysis and interviews, to unravel the social and human aspects of **decision-making** practices, collective **sensemaking** and **coordination**. The guiding questions are: "How did various formal and informal stakeholders govern the COVID-19 crisis situation over time? How did they collectively make sense of the evolving situation and make joint decisions? How did the involved agencies collaborate and coordinate their activities in response to the COVID-19 crisis?"

The **COVID-19 Crisis Governance Framework** introduced in this report is based on the "**whole-of-society**" approach and contains three analytical layers: (1) The state and the institutional landscape, (2) Established and emerging response organizations and networks, (3) Societal resilience and participation. Using **multi-level**, **network** and **participatory governance** theories, vertical and horizontal dispersions of authority among local, provincial, national, supra-national, and global levels of government are addressed. The Framework also addresses the actions and interactions of non-governmental organizations, private actors and civil society. **Societal resilience** is used as a lens to recognize the professional and civic communities' abilities to develop capacities to respond to the disruption, to recover from the societal shocks and to adapt and grow from the COVID-19 experience.

This report argues that, while formal decision-making based on fit-for-purpose scientific knowledge is important, formal authorities need to combine formal crisis management policies with emergent and participatory approaches for **effective (cross boundary) collaboration** and **coordination**. Capacity building for future emergencies means investing in people, **building capabilities**, **nurturing network**s and **trustful relationships** among a diverse and inclusive community of interacting and interdependent societal actors. The quality of the crisis response by (self)organizing communities and the coordinated actions of authorities is conditioned by the **interconnectedness** and **interdependencies** of stakeholders on policies and objectives in response to COVID-19. **Trusting relationships** provide the conditions for new collaborations, relationships, consortia and networks among citizens, communities, and private and public sector organizations so urgently needed to overcome the crisis. **Transparency, accountability, predictability and shared understanding** through the enactment of governance arrangements create trust, which enables these requirements to be accomplished, thus creating a virtuous and **mutually reinforcing cycle**.

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List of Acronyms

Abbreviation / acronym	Description
ACO	Algemeen Crisis Overleg (General Crisis Meeting)
AZC	Asielzoekerscentrum (Asylum Seekers Center)
BAO	Bestuurlijk Afstemmingsoverleg (Administrative Consultative Committee)
CDC	Centers for Disease Control and Prevention
CIb	Centrum Infectieziektebestrijding (Centre for the Control of Infectious Disease)
DPCM	Decreto del Presidente del Consiglio (Decree of the Prime Minister)
ECDC	European Centre for Disease Prevention and Control
EU	European Union
FEMA	Federal Emergency Management Agency
GGD	Gemeentelijke Gezondheidsdienst (Municipal Public Health Service) (the Netherlands)
GHOR	Geneeskundige Hulpverleningsorganisatie in de Regio (Medical Response Organization in the Region)
GHSA	Global Health Security Agenda
IC	Intensive Care
ICCb	Interdepartementale Commissie Crisisbeheersing (Interdepartmental Commission for Crisis Management)
ICT	Information and Communication Technology
IOM	International Organization for Migration
LCH	Landelijk Coördinatiecentrum Hulpmiddelen (National Consortium Medical Supplies)
LOT-C	Landelijk Operationeel Team Corona (National Operational Team COVID-19)
MCCb	Ministeriële Commissie Crisisbeheersing (Ministerial Commission for Crisis Management)
MMF	Mondmaskerfabriek (Face Mask Factory)
MSAH	Ministry of Social Affairs and Health
NESA	National Emergency Supply Agency
NGO	Non-Governmental Organization
NVIC	Nederlandse Vereniging voor Intensive Care (the Dutch Association for Intensive Care)
OMT	Outbreak Management Team
OHCR	Office of the United Nations High Commissioner for Human Rights
PPE	Personal Protection Equipment
RIVM	Rijksinstituut voor Volksgezondheid en Milieu (National Institute for Public Health and the Environment)
ROAZ	Regionaal Overleg Acute Zorgketen (Regional Network Healthcare Crisis Response)
TAPIC-R	Transparency, Accountability, Participation, Integrity, Capacity, Resilience
THL	Finnish Institute for Health and Welfare
UN	United Nations
UNHCR	United Nations High Commissioner for Refugees
UN-OCHA	United Nations Office for the Coordination of Humanitarian Affairs
WHO	World Health Organization

1 Introduction

"*There is no silver bullet. There is no simple solution. There is no panacea. There is no one-size-fits-all approach*" - dr. Tedros Adhanom Ghebreyesus, WHO Director-General, at the World Health Assembly, 18 May 2020.[1]

This HERoS COVID-19 Crisis Governance Framework has been designed to help in better understanding and analyzing/examining the workflows, processes, coordination and communication structures and governance arrangements in response to the COVID-19 pandemic. Broadly defined, governance refers to the processes of decision-making, collaboration and coordination among institutions, organizations, and individuals to meet the needs (and interests) of the public within certain areas. It includes the complex interplay between various stakeholders (including the state, civil society, private organizations, citizens and inhabitants) in steering sets of policies and actions that define and ensure specific societal needs.

The COVID-19 crisis is a global infectious disease outbreak, officially declared a pandemic by the World Health Organization (WHO) on 11 March 2020 (Cucinotta, & Vanelli, 2020). We consider the COVID-19 crisis from a broader perspective as a **wicked problem**, defined as a complex situation for which there is no single solution because solutions for the problem can cause new challenges elsewhere (Weber, & Khademian, 2008). The COVID-19 crisis can be seen as wicked because the disease and the strategies against it affect societies in numerous ways, and as a result, there is no single best way to respond to it.

Picture 1: *WHO's tweet declaring the COVID-19 outbreak a pandemic*

The risks for populations (worldwide) due to the COVID-19 crisis are compounded by already existing high levels of vulnerability, interconnected with other challenges such as population diversity and

[1] https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-world-health-assembly

inadequate (or at least challenged) healthcare systems, socio-economic impacts (partly due to measures particular to lockdowns) and secondary crises (healthcare related issues, job insecurity, unemployment, etc.). In addition, the COVID-19 outbreak is not an isolated event but one related to global risks and challenges (Andersen, & Rockström, 2020) including climate change (Bashir, Komal, Bashir, Tan, & Bashir, 2020), urbanization (Connolly, Ali, & Keil, 2020), poverty and vulnerability (Sumner, Hoy, & Ortiz-Juarez, 2020), (forced) migration and refugees (Kluge, Jakab, Bartovic, D'Anna, & Severoni, 2020), mass tourism (Gössling, Scott, & Hall, 2020), loss of biodiversity and animal welfare (Tiwari, Dhama, ... & Rodriguez-Morales, 2020). Hence, the knowledge base for responding to and analyzing the COVID-19 crisis is fragmented and contested (Daviter, 2019). Consequently, COVID-19 crisis governance measures in reaction to the virus outbreak are necessarily incomplete, inconclusive and incommensurable.

The **aim** of this report (HERoS Deliverable 1.1) is to utilize social scientific methods, particularly (policy) document analysis, discourse analysis and interviews, to unravel the social and human aspects of decision-making practices, sensemaking by and coordination among involved agencies in relation to the COVID-19 crisis and to provide first **lessons learned**. This report presents a Governance Framework that will be used throughout the HERoS project to "negotiate" governance practices and discourses for a better understanding of inter-organizational and societal collaborations as well as operational practices, all of which reduce confusion among the various stakeholders. In that respect, the Governance Framework has a **dual nature**: it was developed to ***describe and analyze*** measures taken across global, national and local levels to respond to the COVID-19 crisis and to ***examine*** policies, collective decisions and collaborative actions across healthcare, crisis management and other relevant sectors in response to the crisis. The main focus will be on European countries, with incidental references to the governance approaches in countries outside of Europe.

The **guiding questions** for this deliverable are as follows:

"How did various formal and informal stakeholders *govern* the COVID-19 crisis situation over time? How did they *collectively make sense* of the evolving situation and *make joint decisions*? How did the involved agencies *collaborate* and *coordinate* their activities in response to the COVID-19 crisis?"

Given the complexity of the COVID-19 crisis, which we defined as a wicked problem, this report and the Governance Framework relies on a **grounded theory informed methodological approach,** which synthesizes and interprets evidence from published literature, as well as secondary sources and primary data sources (Gioia, Corley, & Hamilton, 2013; Eisenhardt, Graebner, & Sonenshein, 2016). Grounded theory refers to a practical method that "focuses on the interpretive process by analyzing the actual production of meanings and concepts used by social actors in real settings" (Suddaby, 2006: 633). In concrete terms, it means that this research has focused on the lived experiences and **interpretations of various stakeholders** and that theoretical concepts have emerged from literature reviews, secondary sources and collected primary data.

Throughout the report, concrete examples (of COVID-19 policies and measures in countries, specific cases, and contradictions and dilemmas such as the use of facemasks) are given as illustrations. Analytical terms, such as negotiation, boundary work, collective ownership and resilience, that emerged as themes from this iterative process are presented in Tables 1, 2 and 3. Taken together, this

analytical Governance Framework (Table 4) is used as a lens to describe and examine COVID-19 related crisis governance in various countries and various cases.

The specific focus here is on organizational, administration, and institutional **coordination principles** that include information sharing, sensemaking and decision-making locally, nationally and globally. Eventually our ambition is to expose the interlinkages and **interdependencies** for multi-dimensional collaborative **(un)learning** and **action alignment** in the COVID-19 crisis. This entails a closer examination of the dilemmas and tensions underlying the COVID-19 crisis response processes as well as ways in which to deal with them.

The targeted audiences[2] of this report are:

- scientists (various disciplines)
- professionals and practitioners
- policy makers
- wider audience

The report sections proceed as follows:

Section 2.1 introduces the main characteristics of the COVID-19 crisis. **Section 2.2** introduces the Governance Framework in terms of multi-layered institutions, networks and participatory arrangements among interested actors, communities and organizations. **Section 2.3** views the COVID-19 crisis response through the lenses of dilemmas and tensions across governance arrangements. We assess how to understand the processes of sensemaking, decision-making, learning and coordination by and among state institutions and other stakeholders in response to COVID-19. **Section 2.4** zooms in and out on concrete cases and pilot studies, which are introduced to demonstrate the utility of the Governance Framework. Lastly, **Section 3** provides the implications of the Governance Framework with concluding remarks and recommendations for scientists, professionals, practitioners, policy makers and the wider audience, and it discusses future developments and applications of the Framework.

[2] Following the logic of the EU Joint Research Center Ispra Italy, in their report *Science for Disaster Risk Management 2017: Knowing better and losing less*: https://ec.europa.eu/jrc/en/publication/science-disaster-risk-management-2017-knowing-better-and-losing-less

2 COVID-19 Crisis Governance Framework

2.1 Defining the COVID-19 Pandemic as Crisis

The COVID-19 crisis is unique in many ways; however, pandemics are well known, studied and framed (Snowden, 2008; Martini, Gazzaniga, Bragazzi, & Barberis, 2019; Shah, 2016). On the basis of this knowledge, we consider the COVID-19 crisis "a threat to widely shared societal values or life-sustaining systems that evolves over time and space, is foreshadowed by precursor events, subject to varying degrees of political and/or societal attention, and impartially or insufficiently addressed by authorities" (Boin, Ekengren, & Rhinard, 2020: p 7). Crisis and disaster researchers have long recognized a difference between two theoretical ideal types: "fast-burning" (or sudden onset) crises and "slow-burning" (or creeping) crises ('t Hart, & Boin, 2001).[3] The COVID-19 crisis can be considered a **slow-burning crisis** because it had a long incubation time and may continue long after the "hot phase" of the crisis is over. Unlike a fast-burning crisis, there is no clear beginning or end, which means that it can remain undefined for a long time.

What makes slow-burning crises particularly difficult to deal with is that they (and the meanings attached to them) can change over time, thus having a long-lasting impact on society. Boin et al. (2020: 13) define the characteristics of a slow-burning crisis. Those characteristics imply that the COVID-19 crisis:

- has a long incubation period, allowing it to accumulate its threat potential in multiple systems;
- began its trajectory locally (in China), and its development and potential impact remained unnoticed for a long time by the managers of still untouched systems in other parts of the world;
- did not develop in a linear way; its development saw/will see phases of slow accumulation and rapid escalation towards tipping points;
- has tipping points that have been critical moments for crisis management, presenting the last moment for intervention.

The slow-burning COVID-19 crisis can be seen as a dynamic, non-linear problem (Rothan, & Byrareddy, 2020). Because there are **no linear solutions** to this nonlinear problem, the measures taken now will have uncertain effects for the long run. The policy process (problem identification and agenda setting, formulation, adoption, implementation, ongoing monitoring and evaluation) in "normal" situations can already be ambiguous because of the (potentially opposing) interests of the many and diverse stakeholders involved (Anderson, 2014). A slow-burning crisis makes it even more challenging for policy makers to formulate unambiguous measures. Because the cause–effect relationships (i.e., the impact of an intervention on the dynamics of the virus, and vice versa) are constantly shifting, Tricia Greenhalgh pleads for a holistic, **fit-for-purpose science** that provides practice-based evidence versus evidence-based practices. This kind of science should not lead to a staging or instrumentalization of science activities (Dooren, & Nooregraaf, 2020); instead, it should allow for the question "Does this intervention contribute, along with other factors, to a desirable outcome?" (Greenhalgh, 2020 a, b).

[3] For terminology, see Annex 1. For definitions of hazards, crisis and disasters, resilience, etc., see the EU Horizon 2020 project DRIVER+: https://www.driver-project.eu/driver-project/terminology/

Paradoxically, the more formal authorities manage to contain the virus the less we know about its effects (Boudry, 2020). For example, how many people (in a given country) would have died without policy measures such as lockdowns and social distancing (often condemned by skeptics) is unknown. Consequently, policy makers have to develop policies and guidelines to cope with the pandemic by **deriving the unknown from the known** (how the virus spreads, its duration, treatment, the development of immunity, proper and adequate measures to control it, etc.). In addition, policy makers have to deal with **competing demands** based on stakeholders' interests and perceptions. For example, measures to control the spread of the virus, such as lockdowns, seriously will affect the economy creating yet another, secondary crisis (Baldwin, & Mauro, 2020). Healthcare systems that have been (partly) privatized will limit the state's ability to interfere in the system. And social distancing rules and measures may potentially collide with fundamental human rights, disproportionately affecting those who are most vulnerable.

Once the WHO declared COVID-19 a pandemic, governments all over the world started to develop and implement response measures. The implementation of measures was anything but unproblematic. In some parts of the world or during certain phases of the creeping crisis, the COVID-19 crisis evolved into an **institutional crisis** (Schmidt, Boersma, & Groenewegen, 2018): a period in which the institutional arrangements of a policy sector are confronted by a relatively strong, continuous decline in legitimacy (Boin, & 't Hart, 2000). Institutional arrangements, that is, the governance structures (including decision-making procedures, venues and policy instruments, and interorganizational networks) as well as its policy image (how policies are understood and discussed) (Baumgartner, & Jones, 2010) became a part of heated public debates.

For example, while the WHO has been praised for having deployed scientific skills, epidemiological expertise, practical know-how, and response capacities worldwide, it has also been criticized for initially playing down the gravity of the COVID-19 virus' impact, which caused assessments, testing and containment measures – throughout the world – to having started later than it should have (Fisher, & Wilder-Smith, 2020; Fildler, 2020). The healthcare sector's global arrangements and most of its national institutional arrangements has the knowledge base on how to effectively respond (monitoring and containing) to infectious diseases (due to experiences with recent outbreaks of SARS, MERS and H1N1, and pandemics in the past).

Yet, we have witnessed a struggle (and sometimes an unwillingness, such as in Brazil, Russia and the United States, see: Greer, King, da Fonseca, & Peralta-Santos, 2020; Ortega, & Orsini, 2020) among policy makers to act on that knowledge and to take the proper measures in a timely manner. A critical editorial in *The Lancet* titled "COVID-19: too little, too late?", published 7 March, stated that "as the window for global containment closes, health ministers are scrambling to implement appropriate measures to delay the spread of the virus. But their actions have been slow and insufficient. There is now a real danger that countries have done too little, too late to contain the epidemic" (Lancet, 2020: 755). Consequently, part of the COVID-19 crisis response is now focused on **restoring legitimacy**, with **crisis communication** as an important instrument (Coombs, 2014).

In addition, due to the many unknowns about the virus and in the absence of working vaccines, decision-makers and crisis response leaders (Boin, Kuipers, & Overdijk, 2013) have to continuously **make sense** of the evolving situation based on the (imperfect) information at hand. Because of the

many unknowns about the virus and how it spreads (Verity et al., 2020 and Sohrabi et al., 2020), measures that at first seemed to be adequate proved to be obsolete, or at least disputed, later on. Decision makers had to consider partial lockdowns (in some parts of a country) or mandating face masks in some parts of a city. We witnessed that regular shifts in policies such as often contradictory advice on face mask use caused anxieties (Martin, Hanna, & Dingwall, 2020). Similar controversies arose regarding such topics as the unknown effect of in-house ventilation on the spread of the virus, which caused an **ongoing dispute** between virologists, physicists and engineers (Mandavilli, 2020; Morawska, & Milton, 2020), the transmission of the virus by fomites (i.e., objects or materials likely to carry infection, such as clothes and furniture) (Goldman, 2020) and whether elementary school children should stay home (Munro, & Faust, 2020).

From a crisis management point of view, adjusting measures in an attempt to *manage the unexpected* (Weick, & Sutcliffe, 2001) makes perfect sense; however, it may well provoke movements that start to question the local adjustments, considering them to be part of perceived inconsistencies.[4] From previous pandemics, it is known that this potentially undermines trust in formal authorities and negatively affects social cohesion and willingness to comply with measures to control the spread of the virus (Shah, 2016). Thus, **effective crisis communication** and expectation management is (should be) not just an attempt to restore formal authorities' legitimacy in a top-down fashion but an **outcome of collaboration** between various stakeholders to (re)gain **trust** in measures taken (Boersma, Allen, Comes, Stanciugelu, & Terpstra, 2017). It should involve a discussion on **risks** and **risk perception** that includes both *cognitive aspects* (knowledge about the virus, how it spreads, kinds of measures to be taken) and *affective aspects* (attention on emotions and uncertainties), as both will affect people's perception of the risk (Terpstra, 2011).

The COVID-19 Crisis Governance Framework presented in this report contains the characteristics of an "ideal-typical" slow-burning crisis. However, the reality of the crisis is dynamic, it changes over time, and so are the measures taken. Because of the complexity and dynamics of the COVID-19 crisis, a **whole-of-society approach** (Christensen, & Lægreid, 2007) is needed that engages **all stakeholders** in supporting crisis response measures. To get a better understanding of how COVID-19 crisis governance and policies unfold (change over time), we will not present a static framework; instead, we propose a focus on the ***contradictions*** and ***dilemmas*** policy makers face and on how they deal with those (over time) (Fairhurst et al., 2016; Farjoun, 2016; Putnam, Fairhurst, & Banghart, 2016; Putnam, 2013).

[4] For example, anti-lockdown protests around the globe:
https://www.telegraph.co.uk/news/2020/04/20/protests-erupt-against-coronavirus-lockdowns-around-world/

2.2 The Governance Ecosystem

2.2.1 Good Governance

Frequently, **governance** is used to understand normative issues related to decision-making in domain-specific processes. In general, this approach is referred to as "good governance" (Nanda, 2006), and it relates to the (positive) quality of decision-making and coordination among institutions and individuals to meet the needs (and interests) of the public within certain areas (Aguilera, & Cuervo-Cazurra, 2004). Often this is seen through the development, implementation and acceptance of public policy decisions and other measures and through the power of different systems and relations (Keping, 2018).

A dominant analytical tool for good governance has been developed by the WHO. Their **TAPIC** heuristic model (Greer, Vasev, Jarman, Wismar, & Figueras, 2020; Greer, Wismar, Kosinska, & WHO, 2015; Wismar, & Pastorino, 2017) works by first asking in which **dimensions** of governance an issue lies. The model is not prescriptive and the different dimensions are not 'ingredients of good governance' per se, but rather domains that suggest governance issues which need to be addressed. There may be tradeoffs and conflicts between the different domains while none of the proposed domains assumes priority. These include:

- **Transparency** – making publicly clear the decision-making process, the grounds on which legitimacy is claimed and the decision-makers involved.
- **Accountability** – ensuring that anybody who acts must account for their actions and decisions to appropriate other actors who are entitled to have those actions and decisions explained and have the power to reward or punish them.
- **Participation** – ensuring that people who are affected by a decision can express their views about it in a way that ensures they are at least heard.
- **Integrity** – ensuring that the processes of representation, decision-making and enforcement are clearly specified and members of governance institutions have clear roles and responsibilities and adhere to widely shared ethical principles.
- **Capacity** – employing the necessary expertise to assist policy-makers in avoiding, diagnosing and remedying policy failures and unintended consequences.
- **Resilience** - recognizing the professional and civic communities' abilities to develop capacities to prepare for disruptions, to recover from societal shocks and stresses and to adapt and grow from the disruptive experience.

The last dimension, **resilience**, is not an original part of the TAPIC heuristic model. We added the term informed by the literature, in order to recognize the bottom-up, "emergent" and often informal societal responses to the crisis and how they are related to the formal responses by authorities (Abramson, Grattan, Mayer, Colten, Arosemena, Bedimo-Rung, & Lichtveld, 2014; Holling, 1973; Martin-Breen, & Anderies, 2011). The diffuse and disruptive nature of the COVID-19 crisis potentially contributes to resilience as it has led to new collaborations, relationships, consortia and networks among citizens, communities, and private and public sector organizations.

2.2.2 Governance as analytical concept

To understand the concept of "good governance" is one thing, but the actual practice of governance is another. The practice of governance is not unambiguous, value free or universal; it comprises **multiple realities** that interfere with the formal objectives and workings of governance (Weiss, 2000). In this sense, the "formal" dimension of COVID-19 crisis governance refers to the guidelines, plans and rules (**policies**) and to the **arrangements** (for example, crisis management structures) that are pre-designed, including the institutions, the roles and responsibilities of different actors, and the collaborations between them (Weible et al., 2020). "Informal" COVID-19 crisis governance refers to the complex web of stakeholders and networks at all levels that are active outside of formalized governance arrangements, which however seriously affect and influence such arrangements.

Many governance issues – including the response to the COVID-19 crisis and the **mitigation** of its consequences exceed the limits of the power, resources and established institutional structures of individual governments and sectors. In disaster studies, this form of power has been referred to as "real" governance: the way in which formal governance arrangements manifest and evolve in practice, influenced by interests, power, local cultures and other dimensions that enable or constrain its composition and operation (De Herdt, & De Sardan, 2015). The complexity and unpredictability of the crisis calls for a layered and dynamic **crisis governance ecosystem** and indeed for a **whole-of-society approach** in order to achieve positive outcomes within and across policy structures and action domains related to the crisis.

The COVID-19 whole-of-society crisis Governance Framework consists of three main building blocks, which we see as analytical (not necessarily mutually exclusive, partly overlapping) layers of our Framework:

- Layer 1: *The state and the institutional landscape*
- Layer 2: *Established and emerging responding organizations and networks*
- Layer 3: S*ocietal resilience and participation*

2.2.3 Layer 1: *The state and the institutional landscape*

The first layer of our Framework, examines the distribution of power and responsibility across different tiers or levels of governance and among different institutions and sectors (Hooge, & Gary, 2003). It starts with a focus on the **role of the state** and the **institutional landscape** involved in **formal decision-making** in responding to the COVID-19 pandemic and mitigating its effect. Here, the *formal* institutions rely on rules and government structures, while the *informal* institutions shape relationships primarily stemming from ideology and culture (Kaufmann, Hooghiemstra, & Feeney, 2018). Understanding therefore, the formal COVID-19 crisis response requires understanding not only the role of **bureaucracies**, how they work and are embedded in **institutional** landscapes, but also of the role and involvement of **professionals** (Barbour, & Lammers, 2015; Boin, Kuipers, & Overdijk, 2013), of disaster response teams embedded in subcultures that have been shaped by previous experiences with (similar) crises (Bankoff, 2017; Warner, & Engel, 2014).

In addition, governance involves actors interacting across levels. Such multi-layered reflection provides the lens for a deeper understanding of *how* and *why* decisions are informed, *how* and *why* they are made and interpreted within a targeted intervention area (Capano, Howlett, Jarvis, Ramesh, & Goyal, 2020). In decision-making, stakeholders' claims and interests gain ground and unfold through acts of persuasion, power plays and strategic maneuvers as well as through formal institutions (Fleming, & Spicer, 2014; Wæraas, & Nielsen, 2016). Transparency, accountability, participation and integrity are crucial in this process, as are investing in capacity (expertise) and recognizing societal resilience.

While the focus in this layer of the Framework is on the nation state and its decision-making structures, the supra-national arrangements and influences (such as the WHO, the EU, global media) cannot be ignored. For example, the WHO and the regional CDCs regularly issue guidelines and official advice to country authorities, for example about face masks or the effectiveness of ventilation. These supra-national governance structures interact with other governance levels within countries, interpretations emerge locally and recommendations are often revised as the dynamic situation on the ground unfolds. WHO's official advice for a long time was that only those who were sick and showing symptoms and those who were caring for people who were suspected of having the coronavirus should wear masks. Despite this advice, the use of face masks has become a heated debate in various parts of the world as people question whether or not face masks can act as a barrier to stop infected individuals from spreading the virus through droplets (aerosol) from talking, singing, coughing or sneezing (Feng, Shen, Xia, Song, Fan, & Cowling, 2020; Chan, & Yuen, 2020; Eikenberry, Mancuso, ... & Gumel, 2020). The WHO later adjusted its advice, recommending using face masks if people could not maintain at least one meter distance from each other.[5] Country health authorities' interpreted differently such advice and the associated evidence and as a result national recommendations, decisions and policies **differ greatly from country to country**. For example in Europe, health experts in Sweden and the Netherlands do not (at this time) advise the public to wear masks in public establishments such as shops and restaurants, except for some streets and markets in Amsterdam and Rotterdam, whereas in other countries including France, the Czech Republic, Poland, Spain and Italy, masks are advised or mandated.[6]

[5] https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/q-a-on-covid-19-and-masks

[6] https://www.euronews.com/2020/07/14/coronavirus-how-the-wearing-of-face-masks-has-exposed-a-divided-europe

Because the COVID-19 crisis crosses geographical, professional and functional boundaries (Kapucu, 2006; Boin, & Rhinard, 2008), **boundary work** must also be considered. Boundary work is the exchange and transfer of knowledge on how to control the virus across boundaries of jurisdictions, institutions, sectors, organizations and communities (Zietsma, & Lawrence, 2010). It comprises moments in which **boundaries**, demarcations or other divisions between fields of knowledge and lived experience are created, advocated, attacked or reinforced. If boundary work is neglected in the response to COVID-19, boundaries will only reinforce separations between people, communities, organizations or countries rather than build bridges.

Regarding Europe, it has been previously argued that the European (member) states struggle with **sharing and aligning crisis response capacities and structures** (Boin, Ekengren, & Rhinard, 2013), and the COVID-19 crisis indeed revealed that the quality of collaboration between countries even within the European Union was insufficient and not what was hoped for (Anderson, Mckee, & Mossialos, 2020; Renda, & Castro, 2020). The convergence of the COVID-19 crisis with inadequate European collaboration cannot be considered as an exception, because "health is one of the sectors where resistance by EU members to transnational sovereignty has remained strongest, and countries pull back to serving unilateral, national-level interests at the cost of collective policy responses to shared challenges" (Bozorgmehr, Saint, Kaasch, Stuckler, & Kentikelenis, 2020: e247).

Indeed, it has been argued that "more coordinated action would have been desirable and has also been sought by the European Commission; however, such attempts arrived too late, and were hampered by fragmented governance, as well as by the lack of an EU-wide risk and crisis management framework" (Renda, & Castro, 2020: 274). Likewise, in the United States, the response has been handicapped by a lack of political commitment and leadership, unclear goals and inadequate institutional dynamics such as isolated bureaucratic silos (Carter, & May, 2020). However, if stakeholders were to invest in boundary work, the junctures would open the possibility to enable diverse connections, the building of relationships and thus the exchange of knowledge and information (Quick, & Feldman, 2014).

States and institutions layer	Governance mechanisms
Action alignment processes	boundary work
Primary focus	formal decision-making
Form of influence	bureaucratic
Communication	hierarchical

Table 1: *Multi-level crisis governance: the state and the institutional landscape*

Policy makers' main focus in the COVID-19 crisis – at least for a long time – was on **formal decision-making** in and through national bureaucracies, with communication based on hierarchical structures and pre-existing links with expert institutes such as the WHO, CDC, ECDC, Africa CDC, and so on.[7] Arguably, this has led to a bias in policy making, research and media reporting on the crisis: **the nation-state** (country level) has become the dominant unit of analysis. Here, the dominant crisis approach starts with the assumption that the nation-state is the natural social and political form of the modern

[7] See Annex 3.

world (Wimmer, & Glick Schiller, 2002). For example, the Johns Hopkins online dashboard[8] uses the nation-state as the main unit of analysis on the virus and provides per-country information on the number of cases, deaths, recoveries, tests, and so on (Dong, Du, & Gardner, 2020). Other sources such as the Worldometer,[9] the Institute for Health Metrics and Evaluation dashboard[10] and the Deep Knowledge Group[11] are all taking the nation-state as the main unit of information/analysis for the spread of the virus. Indeed, since the outbreak of the disease, particularly after 11 March when the WHO declared the COVID-19 outbreak a pandemic, countries received media attention for various reasons: New Zealand, South Korea and Taiwan, for example, were recognized for getting the spread of the disease under control at a relatively early stage; Sweden for having no lockdown; China, Spain, Italy and France for severe state control during the lockdown; the United Stage and Brazil for leadership that neglected science; South Africa for having the highest number of COVID-19 cases on the African continent.

What makes the focus on individual countries (and cross-country comparisons for that matter) problematic, is that only **certain characteristics of a country** (be they cultural, social or political) **are singled out to explain failure or success**. Sweden, for example, attracted international media attention because, unlike most other countries, many of its measures have been based on voluntary and incremental action rather than on legislation and enforced control. The picture that emerged from the media then was that "life is normal in Sweden"; "its policy is based on a herd immunity strategy"; "Sweden is not following expert advice or WHO recommendations". However, an in-depth study on (the media coverage of) Sweden's COVID-19 crisis policy showed a different picture: indeed, Sweden's policy was to count on citizens' collaboration and voluntary actions, but many actions have been taken to limit (not control) the spread of the virus (Irwin, 2020). Section 2.4 of this report provides such in-depth case studies.

In addition, contrary to the hierarchical, insulated structuring of the state's/nation's command and control processes, crisis governance in general is (or should be), by its nature, **multi-level** and **cross-boundary** (Tierney, 2012).[12] That is why we have to understand (and invest in the mechanisms of) multi-level and cross-boundary governance, that is, in the vertical and horizontal dispersions of authority among local, provincial, national, supra-national, and global levels of government, as well as among non-governmental organizations, private actors, civil society and other relevant organizations and entities (Daniell, & Kay, 2017). The multi-level and cross boundary concept of governance dynamics challenges former state and market-centric views and fosters a need to shift the analysis from state to **sub-state** (including cities, state and regional governments, businesses, civil society

[8] https://coronavirus.jhu.edu/map.html
[9] https://www.worldometers.info/coronavirus/
[10] http://www.healthdata.org/covid
[11] https://www.dkv.global/covid-safety-assesment-200-regions
[12] While most attention seems to go to the "competition" between countries, **refugees**' situations in and outside camps have been overlooked. In a joint statement, the HUNHCR, IOM, OHCR and WHO declared that the rights and health of refugees, migrants and the stateless must be protected in COVID-19 responses: https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=25762&LangID=E. This is an urgent matter Because "... refugees and migrants are potentially at increased risk of contracting diseases, including COVID-19, because they typically live in overcrowded conditions without access to basic sanitation." (Kluge, Jakab, Bartovic, D'Anna, & Severoni, 2020: 1238. See also: Dodds et al., 2020).

groups, communities, and others), and **trans-state** (such as the EU, the UN and WHO, and the regional CDCs) as well as the need to understand the blurring of the public-private dichotomy.

The COVID-19 crisis has revealed that it engages (or needs to engage) the scientific, social, political and economic sectors of different nations and communities, and requires the participation of various entities across both temporal phases and scales of different crisis events. Assessing if/how/to what extent this has been the case is vital input for the analysis and eventual lessons learned (not to mention the evaluation) of COVID-19 crisis governance in different contexts.

2.2.4 Layer 2: *Established and emerging organizational networks*

The inherent complexity of crisis response systems and processes requires careful analysis of coordination, collaboration and learning among organizations (stakeholders). This layer of crisis governance analysis therefore shifts the focus away from centralized bureaucratic systems of authority and decision-making to **decentralized actors** and the **civil society**. This focus on networks emphasizes more emergent forms of governance that involve a variety of organizational actors within and across sectors, including the private sector. Power dynamics in this layer are about influencing the decision-making agenda through processes of **negotiation** and the creation of new linkages. In this regard, the COVID-19 crisis **network governance** processes (Rhodes, 1997; Provan, & Kenis, 2008) and the reliance on **open-ended structures** are promising.

Network governance guides collaboration between autonomous but interdependent organizations and stakeholders of different kinds (both established and emergent) that operate within a self-constructed social structure or space to manage(and possibly solve) complex contradictions and dilemmas (Kickert, Klijn, & Koppenjan, 1997; Provan, & Kenis, 2008; Klijn, & Koppenjan, 2012; Sørensen, & Torfing, 2016). It is about the mobilization of expertise, interests and resources around challenges in the face of uncertainty (Moynihan, 2008; Kapucu, Arslan, & Collins, 2010). Though communication within and between these networks may vary in inclusiveness and stability, they depend on the quality of their **collaborations** rather than on state bureaucracies and institutions. Organizations coordinate and adapt through communication and **feedback**. **Mutual adjustment** in such cases brings about the alignment of action by informal communication and the development of new routine ways of interacting.

In the context of the COVID-19 crisis, the focus on relations is underlined by a fundamental need for efficient and effective **collaboration** and **coordination**. In this regard, (self)organization and authority are largely defined by stakeholders' **interconnectedness** and **interdependencies** on policies and objectives in response to COVID-19. This layer reveals how network-based arrangements have emerged (or failed to flourish) within crisis response sectors in various contexts to facilitate problem-solving; also how various state and non-state actors, including the private sector (Horwitz, 2009; Fontainha, de Oliveira Melo, & Leiras, 2016), have been engaged in the management of the crisis. The network governance principles refer to the ways in which governments and other relevant stakeholders **collaboratively organized** (or not) the response to and management of the crisis. That is why the COVID-19 crisis network governance perspective is concerned with understanding the workflows, processes and arrangements for the **coordination** of information, people and organizations, that is, the efforts and resources in crises. One example of such coordination is **scenario**

planning, which allows stakeholders to be involved in understanding the crisis, developing shared goals, sharing knowledge and jointly planning the response (Moats, Chermack, & Dooley, 2008).

The COVID-19 crisis has clearly shown that coordination depends in large part on the (quality of) the relations and **negotiations** between stakeholders. In some instances, these arrangements may be contained to specific sectors and procedures and coordination might take the form of direct supervision and control. This approach, often termed "command and control", stems from military theory and sees the effective "control" of a crisis through defined administrative procedures and roles in order to "go back to normal" (Quarantelli, & Dynes, 1977; Dynes, 1994). Such an approach can be useful for authorities and organizations as a clear coordination structure that works to provide greater accountability and predictability in an emergency (Wolbers, Ferguson, Groenewegen, Mulder, & Boersma, 2016). The role of the state and the national government lies in **orchestration**, that is to call upon sub-state and non-state actors to support and increase their actions by tapping into their networks and resources, versus top down decision-making (Abbott, 2017).

However, the COVID-19 crisis (and previous crises and disasters for that matter) have revealed that **command and control approaches are not always appropriate** for more complex crises, because it may (intentionally or unintentionally) exclude the interests and involvement of key stakeholders and sectors, which have the potential or **latent capacity** to contribute to the crisis response (Van Fenema, & Romme, 2020). The diffuse nature and inherent complexity of the crisis means that coordination and decision-making have to cut across various governance arrangements, sectors (or organizational fields in organization theory terms) and working processes. Combining orchestration efforts by state agencies and self-directed emergent linkages in a **network-governance** fashion networks of heterogeneous stakeholders including private-public partnerships can be activated. In Taiwan, for example, a command center was set up, but using an open model, it engaged private resources to implement strategies and policies that were further enhanced by emergent collaborative behaviors among a diverse group of organizations and the mobilization of volunteers (Huang, 2020).

In some instances during the COVID-19 crisis, cross-sector collaboration and the fostering of collaborative relationships between medical supply and equipment manufacturers and other types of industries, such as automobile and chemical industries[13], added value to the **medical supply chains**. These partnerships shared knowledge and best practices in production and logistics. This new business model was successful in domestically producing respiratory ventilators, face masks and hand sanitizers from companies that did not traditionally belong to the organizational field of so-called "medical equipment producers". This collaboration leveraged the insights of experienced **private sector entities** to identify innovative ways to increase production of medical equipment. Such initiatives took place in various parts of the world. Section 2.4.2 provides an example from the Netherlands. The challenges in supplying personal protective equipment (PPE) during the COVID-19 crisis lead to the conclusion that

[13] Example provided by Ioanna Falagara Sigala, Hanken, HERoS Work Package 3. A concrete example from the Netherlands is the public-private partnership in which the chemical and matrass industries worked together with the Dutch government in the production, supply and distribution of face masks: https://www.dsm.com/corporate/news/news-archive/2020/2020-04-28-production-in-the-netherlands-of-millions-of-medical-facemasks-for-healthcare-professionals-has-started.html; https://www.auping.com/en/royal-auping-receives-order-from-ministry-for-supply-of-mouth-nose-masks; https://www.forbes.com/sites/rosecelestin/2020/04/21/why-are-apparel-and-automotive-companies-making-face-masks/#2f40aee832e1

public-private partnerships like these are key to building more resilient supply chains and diversified resource channels (Gereffi, 2020). Another example (not immediately related to crisis response) is the **CoVIg-19 Plasma Alliance**, a global partnership of plasma companies, working on plasma collection, development, production, and distribution.[14] The ambition of the alliance is to accelerate the development of a **potential treatment**, and increase supply of the potential treatment.

Networks of organizations and field layer	Governance mechanisms
Action alignment processes	coordination by mutual adjustment
Primary focus	orchestration via linkages
Form of influence	negotiation
Communication	mutual understanding

Table 2: *Network crisis governance: established and emerging responding networks of organizations*

The network dimension of the COVID-19 Crisis Governance Framework also involves the quality of collaboration between experts from different backgrounds, governance levels, sectors and networks, including informal volunteers via digital communities. Network crisis governance arrangements usually include established, formal crisis organizations, nonetheless, they often struggle to include more flexible, emerging organizations in their efforts to address the complexities of crises. Thus, the COVID-19 crisis governance needs to recognize the value of local expertise and participation in governance processes across sectors and communities. This idea ties to concepts pertaining to **participatory governance** in crises, such as societal resilience and citizens' initiatives, and the adaptation and transformation of systems across sectors. In the following section we explore these concepts in greater detail.

2.2.5 Layer 3: *Societal resilience and participation*

The third layer of our Framework, recognizes the value of various stakeholders coming together in collective forums or platforms with public administration agencies to find solutions. In general terms, **collaborative governance** can be seen as an arrangement in which various formal public agencies directly engage with all stakeholders in a **collective decision-making process** that is **consensus-oriented** and **deliberative** and that aims to make or implement and manage public policies, programs or assets (Ansell, & Gash, 2008; Newman, Barnes, Sullivan, & Knops, 2004). The governance arrangements that have been activated (or put in place) to respond to the COVID-19 crisis had (context-dependent) critical starting conditions. These include (im)balances between the resources and power of the stakeholders (particularly an issue when stakeholders did not have a pre-given infrastructure or organization), the incentives to collaborate and the past history of conflict or (lacking or insufficient) collaboration among stakeholders.

The focus of this layer in the COVID-19 Crisis Governance Framework is on conflict resolution and on creating new institutional arrangements for cross-boundary collaboration (Emerson, Nabatchi, & Balogh, 2012). ***Participatory* governance** (Fischer, 2006) seeks to deepen citizens'/inhabitants' participation in the governmental process. In participatory arrangements, citizens, and other non-state actors, take **ownership** to influence and **share control** in processes of public decision-making that

[14] https://www.covig-19plasmaalliance.org/en-us#recruitment

affect their lives. Collective ownership is based on deliberation and discursive spaces in which new solutions can surface, alternative views can be offered and dominant views can be resisted, and on the need for the empowered **participation** of **local (citizen) networks** in the crisis response and recovery processes (Dynes, 1990; Dynes, & Quarantelli, 1977; Helsloot, & Ruitenberg, 2004; Kendra, & Wachtendorf, 2016; Schmidt, Wolbers, Ferguson, & Boersma, 2018). In this layer, analysis power – and capacity for that matter – is shared. Adopting the participatory governance layer in the COVID-19 era implies the recognition of **societal resilience** that links sets of adaptive capacities to a positive trajectory of functioning and adaptation after the crisis (Aldrich, 2002; Comfort, Boin, & Demchak, 2010). The creeping nature of pandemic makes it more likely that suspicion and mistrust will increase, as historians point out (Shah, 2016, 119), which makes the investment in participatory modes of governance all the more important.

In the context of the COVID-19 crisis, **societal resilience** includes the adaptation and transformation of policy systems, healthcare systems and society, as well as self-organizing principles of **emergent** social networks. Using the lens of societal resilience emphasizes strengthening the capabilities of local communities to better manage the crisis through coordinated efforts and cooperative activities in various contexts. For example, in the United Kingdom, a group of early-career researchers at one of the national Lighthouse Labs based at the UK Biocentre in Milton Keynes used their knowledge, skills and experiences of volunteering to aid the crisis response. They started to work together as part of a multidisciplinary team of scientists to support the large-scale processing of coronavirus disease, for example, unpacking nose and throat swabs, and preparing and testing samples (Ulhuq, Berry, Kelly, Stansfield, Deal, & Lester, 2020).[15]

Through emergent networks, **trusting relationships, social capital** (measured by the size and quality of interpersonal relationships) are developed, utilized and leveraged in ways that affect not only the ability and willingness to collaborate with others but also the adoption of health-protective behaviors (Chuang, Huang, Tseng, Yen, & Yang, 2015). The relationships and communication are based on **reciprocity**, in which community members perform mutually based on each other's actions. Section 2.4.3 provides an empirical example from an Amsterdam neighborhood in which spontaneous volunteers started to provide free meals for **the most vulnerable** citizens in the first phase of the crisis. The case describes the volunteers' challenges to organize themselves in a sustainable manner and to collaborate with the established formal care organizations and the local government.

Resilience and participation layer	Governance mechanisms
Action alignment processes	deliberative, consensus-oriented
Primary focus	collective ownership
Form of influence	emergent
Communication	reciprocal

Table 3: *Participatory crisis governance: societal resilience, moving beyond the state*

[15] https://www.lighthouselabs.org.uk/; https://scienceblog.cancerresearchuk.org/2020/06/09/covid-19-the-lighthouse-labs-leading-the-way-for-covid-19-testing-in-the-uk/

In participatory governance, the recognition and understanding of the complexity and specific (local) context of the issue at hand, the **diversity** in terms of ethnicity, gender and class as well as diversity and intersectionality in terms of ethnicity, gender and class (McCall, 2005) of the stakeholders involved, and the power (in)balances present provide the right solutions to the specific problem in terms of inclusion and exclusion to think about creative and sustainable responses and solutions to the specific problem (Huxham, Vangen, Huxham, & Eden, 2000).

2.3 Learning and Sensemaking

Whereas Section 2.2 focused on governance layers, contradictions and dilemmas, this section considers the COVID-19 crisis as an opportunity window for change and new directions. The field-level policies described in Sections 2.1 and 2.2 are context dependent, yet they can be overcome through trust building, conflict resolution, bargaining and collaboration. Our focus in this section, therefore, is on collective sensemaking by diverse groups of professionals and organizations and on collaborative (un)learning in relation to the contradictions, dilemmas and possible solutions.

2.3.1 Collaborative (un)learning

We define learning as a mechanism through which **new and different forms of knowledge** (referring to both knowledge about the virus itself and about the protection and response measures) are acquired and integrated, leading to a change in performance (Argote, & Miron-Spektor, 2011; Berends, Boersma, & Weggeman, 2003). The starting point for our analysis is therefore the widespread recognition of the vital role of expertise, learning and feedback involved in implementing COVID-19 governance crisis measures (Edmondson, & Harvey, 2018). Such implementation involves integrating knowledge of the governance crisis measures with local knowledge of how to apply them within a specific context. Since these different bodies of knowledge are distributed, both across time and space and across different groups, significant **knowledge barriers** can emerge.

Policies and measures introduced within an organization, region or system often do not get fully implemented, or they might show low fidelity to the form envisaged by the designers of the measures: a **translation process** takes place (Czarniawska, & Sevón, 2011) that builds on negotiation processes between actors/stakeholders during which meanings, claims and interests change and gain ground. This translation process thus refers to the pursuit of interests and interpretations involving acts of persuasion, power plays and strategic maneuvers. A number of multi-level learning dynamics might act as barriers that can lead to implementation failures. Unlearning may therefore be necessary. **Unlearning** in this regard is not about forgetting but about the ability to choose alternative ways and approaches that transcend existing norms, practices and organizational/institutional arrangements (Tsang, & Zahra, 2008).

In the short term, for example, (organizational) *scaling-up* procedures in decision-making are in most cases (countries) well described and implemented as they are based on experience and historical cases. S*caling down* a crisis response, however, has been less well described and implemented. Scaling down in crisis situations depends on knowledge from the recent past that is necessary to predict future changes (e.g., measures were put in place during the first wave of the outbreak, but how and when a second wave will break out and what it will look like is – in the summer of 2020 – still a big unknown). The current COVID-19 crisis governance system's **dependence on decisions and choices made in the recent past** – the hysteresis – results in uncertainty about the future, making scaling down difficult for both practitioners (scaling down the operational units of the crisis organization) as well as policy makers and politicians (releasing lockdowns, for example).

In the long term, at the organizational level, learning from the COVID-19 crisis implies **adapting measures** to the organizational context and refining organizational roles, structures and work practices to best exploit the capabilities of the new ideas and practices (Reay, Chreim, Golden-Biddle, Goodrick,

Williams, Casebeer, Pablo, & Hinings, 2013). This local experience of learning and feedback may also be shared with other organizations involved in the crisis response, through professional, policy or industry networks, enabling the exchange of more tacit forms of knowledge. Investing in adequate *network governance* arrangements is therefore crucial. At the level of institutional structures (for example, professional codes of conduct, legal frameworks, prevailing public expectations), the COVID-19 crisis teaches us that we have to remove or adjust constraints or drivers such as laws, codes and expectations of what it means to be "effective in crisis management", "cutting edge" or "evidence-based". In this regard, there are also opportunities for "**boundary learning**" (Furnari, 2014) – that is, learning across the boundaries of existing organizations and organizational fields.

Learning from the COVID-19 crisis can be inhibited by a conflict between the norms, practices, and institutional logics of different fields active in the response, such as crisis response agencies and health system structures. At the **individual level**, professionals, practitioners or citizens might lack the capabilities or skills. In addition, people who need to implement the measures might choose not to do so because it does not fit their professional identity, personal ideology or values (Kyratsis, Atun, Phillips, & Tracey, 2017). At the **interpersonal level**, diverse actors may fail to interact effectively because they do not understand the value of the measures or do not perceive any clear context-specific benefit, they do not have the organizational power to apply the measures in daily work routines, or they do not trust others due to differences in professional norms and cultures.

However, even individual learning in the COVID-19 crisis governance context occurs through **collaboration**. People are exposed to and make meaning from others' experiences and from previous events. These experiences also enable learning over generations, resulting in a collective memory of past crises and eventually in **disaster subcultures**, a set of cultural (tangible and intangible) tools to deal with recurrent hazards (Engel, Frerks, Velotti, Warner, & Weijs, 2014). The shared experience of having been in a disaster (before) increases the sense of shared identity and concern for others, leading people to collaborate rather than compete in response to Covid-19 (Van Bavel et al., 2020). Processes of coactive vicarious learning (Myers, 2018) are central in this respect. **Interpersonal or network learning** is relational and occurs through contextually embedded collaborations between individuals at work. Such collaborations go beyond imitating the actions of others to also incorporating the mutual processing of each other's experiences. These collaborations are influenced by characteristics of the individual, relational and structural contexts in organizations, and they lead to growth not only in individuals' knowledge but also in individuals' relational capacity for learning and applying knowledge.

For the layers of the COVID-19 Crisis Governance Framework, we consider:

- learning at the state and trans-state level as a form of "institutional learning" (DiMaggio, & Powell, 1983).
- learning across the boundaries of existing organizations and organizational networks as "network learning" (Powell, Koput, Smith-Doerr, & Owen-Smith, 1999; Furnari, 2014; Swan, Bresnen, Robertson, Newell, & Dopson, 2010; Greiling, & Halachmi, 2013).
- learning that transcends pre-existing knowledge boundaries and epistemic differences, as well as learning between different disciplines as "social learning" (O'Brien, O'Keefe, Gadema, & Swords, 2010).

2.3.2 Collective sensemaking

Sensemaking can be seen as the process of social construction that occurs in times of high uncertainty, when discrepant cues interrupt an individual's ongoing activity, and involves the retrospective development of plausibility that rationalizes what people are doing. Decision-making in this view is contextual and based on **bounded rationality** (March, & Simon, 1993) and **meaning and sensemaking** through which actors try to make things rationally accountable to themselves and others (Weick, 1993; Weick, Sutcliffe, & Obstfeld, 2005). In conditions in which the problem is ambiguous and not well defined, the baseline information, the skills and resources are lacking or incomplete, and the consequences of (alternative) measures are unknown, decision-makers "do what they can" by "muddling through" (Lindblom, 1959; Forester, 1984).

The bounded rationality of the COVID-19 crisis made the relevance of reliable and validated data visible. High-quality crisis decision-making relies on high-quality data to create sufficient **common operational pictures** and **situation awareness** (Endsley, 1995). In this crisis, however, collecting adequate and reliable data proved to be very difficult for various reasons, leading to serious and fundamental methodological challenges (Wolkewitz, & Puljak, 2020). Decisions therefore had to be made on imperfect input. Numerous attempts have been made to make the data useful for decision-making practices, information sharing, communication (e.g., through COVID-19 data dashboards) and (comparative) research (in different science disciplines)[16] but none of the created metadata sets have been able to escape the variety of data collection and reporting methods that were used.

Consequently, policy makers and practitioners (public health officials, healthcare professionals or crisis managers, for example) partly rely on **dominant frames** and **mental models** (about how to respond to infectious diseases) and previous experiences with similar crises (Klein, 2008; 2017; Zsambok, & Klein, 2014); however, these frames, models and experiences are based on **improvisation** (Kendra, & Wachtendorf, 2007; Rankin, Dahlbäck, & Lundberg, 2013), and relying on them can potentially lead to tunnel vision and neglecting anomalies and, eventually, to the collapse of sensemaking, even of the existing dominant frames (Weick, 1993). Because of the complexity of the situation and the insufficient (or dispersed) information, different decision-makers are unable to obtain the same information about the problem, and hence, many **different interpretations** of the problem exist (labeled "variable disjunction" by Turner, 1978).

Two things are important to consider in understanding sensemaking processes with regard to COVID-19 data: first, making sense of the data is (or should be) based on an understanding of the **specific context in which the data is collected**, how it is collected and for what purposes. Second, it is important **to make sense of the data** – what does the data mean and how can it be used (e.g., for different policy measures) – but even more important is collective sensemaking, that is, how members from different communities try to generate shared understandings for coordinated actions (Maitlis, & Sonenshein, 2010; Wolbers, & Boersma, 2018).

Collectively making sense of the COVID-19 crisis data enables relational understanding and thus enlarges the coordinating capacity of actors with different institutional backgrounds. This requires all stakeholders **being engaged in dialogue**, during which professionals and non-professionals are able to

[16] Among many: https://c3.ai/products/c3-ai-covid-19-data-lake/

confront their different languages and ways of understanding across governmental, institutional and organizational boundaries. This way they navigate their differences in norms, meanings, and interests with other stakeholders to achieve a shared goal (Wolbers, & Boersma, 2013; 2018).

Just making sense of the situation, however, is not enough. All relevant stakeholders in the Crisis Governance Framework need (to invest in) **capabilities** they can utilize in deciding how to observe and handle the COVID-19 wicked problem and in determining what they need from the governance ecosystem to build, maintain or enable their capabilities (Termeer, Dewulf, Breeman, & Stiller, 2015). Four main capabilities are needed: (1) **reflexivity,** the capability to appreciate and deal with unstructured problems and multiple realities, (2) **responsiveness**, the capability to respond legitimately to unlimited demands and concerns, (3) **resilience**, the capability to flexibly adapt one's course in response to frequent and uncertain dynamics without losing identity and (4) **revitalization**, the capability to overcome stagnations, reanimate policies and have the willingness to (un)learn.

2.3.3 Politics, increased surveillance and ethics

The current COVID-19 crisis governance measures rely heavily on information about citizen behavior (Van Bavel et al., 2020). New technologies have greatly helped to facilitate these measures. The internet, smartphones and other information and communication technologies (ICTs) are strengthening interconnectedness and information sharing among different levels of stakeholders in different locations. These arrangements, although not unproblematic in their own rights, may work to improve the responsiveness to crises through wider information sharing, effective countering of misinformation, decentralizing specific initiatives and better informing of decision-making at different levels of governance.[17] COVID-19 dashboards[18] can be seen as **boundary objects** that ideally do not just provide information but function (both in policy circles and in operations) as a means to connect people, organizations and institutes and as ways to make sense of the crisis complexity (Mulder, Ferguson, Groenewegen, Boersma, & Wolbers, 2016).

Such objects, reinforced by modern technologies (such as smartphone apps) and the use of big data and algorithms, potentially contribute to a more efficient and effective response because they may connect data (sources) that would otherwise remain isolated and disconnected. However, they can also lead to **increasing surveillance**. COVID-19 crisis containment measures have become an integral part of the surveillance society, characterized by increased investments in bureaucracies and techniques to systematically – and over longer time periods – collect, store and use data and information for the purpose of controlling behaviors and situations (Boersma, & Fonio, 2017; Boersma, Van Brakel, Fonio, & Wagenaar, 2014). Governments, authorities and crisis management organizations are expected to "fight" the COVID-19 crisis to get back to some sort of "normal".

Mainly, but perhaps not always exclusively for the sake of public health, some emergency measures may remain in place for a long time. In this way, the COVID-19 crisis provides legitimation for authorities, often in coalition with the private sector, to collect and use new and existing data about

[17] An example of a network governance arrangement is the initiative of some European countries to work together in the repatriation of citizens to their respective countries. The initiative has been labeled #wetakeyouhome: https://ec.europa.eu/commission/presscorner/detail/en/mex_20_686

[18] For example the WHO COVID-19 dashboard: https://COVID-19.who.int/ and the COVID-19 dashboard in the Netherlands: https://coronadashboard.rijksoverheid.nl/

citizens on a large scale, including tracing mobility, collecting contact information and using social media data (Taddeo, 2020). Extensive surveillance – in various countries – is justified as a necessary "**trade-off**" for public health and security in exchange for a certain loss of privacy and civil liberties.[19] For example, measures and technical tools, such as contact tracing mobile apps, put in place to slow down the spread of COVID-19 are framed as important conditions under which societies can "re-open", allowing for a loosening of lockdowns. However, they can expose citizens to invasive surveillance, potentially threatening privacy, equality and fairness. Hence, they can only be implemented with **ethical oversight** (Cho, Ippolito, & Yu, 2020; Morley, Cowls, Taddeo, & Floridi, 2020).

This means that surveillance in COVID-19 crisis management also needs to be examined as a political process involving questions of power (Fleming, & Spicer, 2014), accountability and transparency (hence the use of the normative **TAPIC-R** dimensions) and the ethical use of (digital) data collected to respond to the pandemic (Ienca, & Vayena, 2020). Both the intended and unintended consequences of surveillance measures must be considered.

2.3.4 Communication and (social) media[20]

The COVID-19 crisis has shown that there are many unknowns in how the virus behaves, yet it is vital that formal authorities implement evidence-based strategies based on previous knowledge (about infectious diseases) and on the latest information at hand. In other words, adequate governance measures rely on adequate and trustworthy data and information.

The COVID-19 epidemic continues to demonstrate the real threat of **misinformation** in misleading the public, misguiding behavior, weakening resilience, obstructing responses and causing harm. Such disinformation has been rampant on social media (Cinelli, Quattrociocchi, Galeazzi, Valensise, Brugnoli, Schmidt, Zola, Zollo, & Scala, 2020). This situation has been labeled the **information pandemic**, or **Infodemic:** "We're not just fighting an epidemic; we're fighting an infodemic", said WHO Director-General Tedros Adhanom Ghebreyesus at the Munich Security Conference on 15 February (Zarocostas, 2020). A recent study in England, for example, showed that half the population of adults in the country believed in some COVID-19 disinformation and conspiracies. These people were therefore less likely to follow government guidance on staying home and maintaining social distance, and they will probably be less likely to accept an eventual vaccination (Freeman et al., 2020).

Additionally, COVID-19 disinformation was found to fuel public mistrust in health and government authorities (Brennen, Simon, Howard, & Nielsen, 2020), cause panic behavior (Cereceda, 2020), lockdown defiance (Allington, & Dhavan, 2020), encourage taking greater and dangerous risks (Baines, & Elliott, 2020), ignite xenophobic attacks,[21] and racism (Croucher, Nguyen, & Rahmani, 2020; Matache, & Bhabha, 2020), it can facilitate fraud (Townsend, 2020), and criminal acts (Satariano, & Alba, 2020). For governments and authorities to more effectively and efficiently prepare for and respond to COVID-19 and future pandemics, it is vital to understand the spread dynamics of related misinformation and the effectiveness of countering mechanisms (for example, the publication of fact-checks[22]).

[19] More ethical tradeoffs can be considered such as health-economy; physical distance-right to protest.
[20] Contributions by: Harith Alani, The Open University, leader of HERoS Work Package 4.
[21] Times Higher Education, Coronavirus sparks a rising tide of xenophobia worldwide, March 2020.
[22] For example: https://www.factcheck.org/issue/covid-19/

2.4 Applying the Framework in Practice

This section provides cases to illustrate how the analytical elements in our COVID-19 Crisis Governance Framework can be used to describe and examine governance approaches in various countries and in various cases and circumstances. The three layers of our Framework are used to unravel the complex, indeed wicked, nature of crisis governance.

As already mentioned, the Governance Framework for this project has been developed on the basis of a **grounded theory informed approach**. The overall research question presented in the introduction of this report provided the initial focus, but data collection (mainly secondary sources) was used as a base to further develop the research (Eisenhardt, 1989). Following the grounded theory research perspective, data collection and analysis took place simultaneously to structure the findings and to decide which kind of data should be collected next (Suddaby, 2006: 634).

We then adopted a **case-study approach** in order to combine different data collection methods. The approach allowed for continuous description and comparison of data and theory and for generating new theoretical perspectives (i.e., the overall analytical Governance Framework). In this research, **qualitative methods**, including document analysis (secondary sources), interviews and observations (Mason, 2017), were utilized to deconstruct and reconstruct important moments and events in the COVID-19 governance process (see Subsections 2.4.1 – 2.4.3). **Semi-structured interviewing** was the main method of primary data collection. It was used to deconstruct and reconstruct the case studies, allowing relevant themes to surface, and to take advantage of unique opportunities that can occur during interviews. The topic list used to structure the interviews and to address the most important issues is provided in Annex 6.

Our aim with the cases (countries) presented in Section 2.4.1 is to provide an in-depth insight into specific local governance contradictions and dilemmas related to the COVID-19 response. The cases are not meant to "compare" countries' policies based on the outcomes (i.e., the number of cases, deaths and recoveries). Instead the cases were chosen using the "**maximum variation case approach**" (Flyvbjerg, 2006), meaning that the similar high-uncertainty context (i.e., the COVID-19 outbreak) was studied in cases that differ on one dimension – the crisis governance ecosystem. The research activities were based on the metaphorical movement of "**zooming in**" and "**zooming out**" of practices (Ibarra, Kilduff, & Tsai, 2005; Nicolini, 2009). The zooming in and out means that the theoretical, analytical concepts (provided in Tables 1, 2 and 3) were used as lenses, so that certain aspects of concrete governance practices became foregrounded while others were bracketed. In line with the process approach, we analyzed the data based on "**temporal bracketing**" through which data is transformed into a series of more discrete but connected "blocks" of information (Langley, 1999) allowing for a (re)construction of the timeline of events and milestone moments.

In the following subsections, we first (in Section 2.4.1.) zoom in and out of the multi-level crisis governance analysis to understand the various ways policy measures were implemented in **the Netherlands** and **Finland** respectively across the state, region, jurisdiction and organization levels. The section describes the institutional landscape, measures, outcomes and discussions.

In Section 2.4.2, we focus (zooming in and out) specifically on coordination and collaboration mechanisms that were put in place or emerged in response to the COVID-19 crisis. It provides an in-depth case study on the production of face masks by a **public–private consortium** in the Netherlands.

Finally, the Framework was utilized to zoom in and out on concrete **participatory** crisis governance practices at the local level. This was done first through the organization and implementation of the Living/Field Lab approach applied in **Amsterdam**, to understand societal dynamics at the ultra-local level of neighborhoods (in Section 2.4.3). And secondly, by providing a case description on the collaboration between the VIII Municipality of **Rome** and a local network of volunteers, Casetta Rossa.

2.4.1 Multi-layered governance analysis - institutional response in various countries

"The paradox is that we will get more space because we keep the physical distance to each other"
- the Dutch Prime Minister, Mark Rutte, at the press conference on 24 June 2020 in which he announced the new lockdown rules.

2.4.1.1 The institutional landscape in the Netherlands in relation to the COVID-19 crisis[23]

In the Netherlands, the National Institute for Public Health and the Environment (**RIVM**) plays a big role in the country's response to COVID-19 (particularly the infectious disease experts but also, to a lesser extent, behavioral experts) and, generally speaking, in the development of knowledge on infectious diseases and the effectiveness of measures. The RIVM consists of three domains with specific knowledge and expertise: Infectious Diseases and Vaccinology (Centre for the Control of Infectious Disease; CIb), Environment and Safety (including environmental incident services) and Public Health and Health Services (including food and food safety). Professor Jaap van Dissel, director of the Centre for Infectious Disease Control[SS1] , has become the RIVM's main spokesperson concerning COVID-19. The RIVM also acts as the national liaison between the national government (state level), on the one hand, and the WHO and the European Centre for Disease Prevention and Control (ECDC), on the other hand (trans-state level).

The role division between the scientists (infectious disease experts) and the policy advice provided to the government has been **institutionalized** (as is the crisis communication) in **formal bureaucracies** and is organized as follows[24]: In the event of a nation-wide outbreak of infectious disease, the Centre for the Control of Infectious Disease (RIVM-CIb) will play a coordinating role in controlling that disease. The RIVM will convene the **Outbreak Management Team** (OMT), which is a routine procedure in the

[23] This section provides a first impression of the crisis governance approach (and the measures taken and implemented) in the Netherlands. It is not meant to be an evaluation about (the effectiveness of) the policy, as that requires more time and research, nor does it give a comprehensive overview of the institutional landscape of Dutch crisis management in the context of infectious diseases. A selection of the public sources used for this section: https://www.nrc.nl/nieuws/2020/04/20/twee-maanden-corona-in-nederland-een-overzicht-van-de-maatregelen-a3995447 and https://nl.wikipedia.org/wiki/Coronacrisis_in_Nederland; https://www.dutchnews.nl/news/2020/05/coronavirus-a-timeline-of-the-pandemic-in-the-netherlands/

[24] The Safety Regions' knowledge institute, Instituut Fysieke Veiligheid (IFV), provides a detailed overview (Ten Dam, 2018) of the many organizations involved: : https://www.ifv.nl/kennisplein/Documents/20181010-IFV-BNK-7-Infectieziekte.pdf.

event of a cross-regional outbreak of an infectious disease or international threat.[25] During the COVID-19 crisis **specialists and experts** with different backgrounds and knowledge about the disease and its control[26] have been invited to the OMT to discuss how to respond to the outbreak on the basis of current information, their professional knowledge and the available scientific literature. The OMT, currently chaired by Jaap van Dissel, will provide **policy advice** to the Ministry of Health, Welfare and Sport through the **Administrative Consultative Committee** (BAO). The BAO assesses the substantive advice on administrative feasibility and implementation and ultimately determines the control policy. This means that neither the OMT nor the BAO is taking decisions, as the Dutch government (the state) is the authority taking the **formal decisions**.

The structure of the COVID-19 crisis management

The main ministries involved in the response to the crisis are the Ministry of Health, Welfare and Sport (current ministers: Hugo de Jonge and Tamara van Ark), the Ministry of General affairs (Mark Rutte, the prime minister), and the Ministry of Justice and Security, providing the coordinating minister (Fred Grapperhaus) for crisis management (see Figure 1). The Minister Hugo de Jonge is the formal leader of the crisis response. The National Coordinator for Counterterrorism and Security (NCTV) coordinates the crisis management tasks under the responsibility of the minister of Justice and Security. However, virtually all other ministers have been involved in the response. The Ministry of Foreign Affairs (for example, traveling advice), the Ministry of Infrastructure and Water Management (public transport restrictions), the Ministry of Economic Affairs and Climate Policy and the Ministry of Finance (economic stimulus packages), and the Ministry of the Interior and Kingdom Relations (democratization of local decisions) all play an important role. The ministries are coordinated by a Algemeen Crisis Overleg chaired by the prime minister (General Crisis Meeting; ACO), the Interdepartementale Commissie Crisisbeheersing (Interdepartmental Commission for Crisis Management; ICCb) and the Ministeriele Commissie Crisisbeheersing (Ministerial Commission for Crisis Management; MCCb).

[25] https://www.rivm.nl/en/novel-coronavirus-covid-19/omt

[26] This has been subject for debate as it has been argued that the OMT is dominated by infectious disease experts (Bergkamp, 2020). Yet, behavioral scientists have been a part of the OMT, and the RIVM has invested in applied behavioral science for COVID-19: https://www.rivm.nl/en/novel-coronavirus-covid-19/research/behaviour. Details on the OMT members can be found at the RIVM website: https://www.rivm.nl/en/novel-coronavirus-covid-19/omt

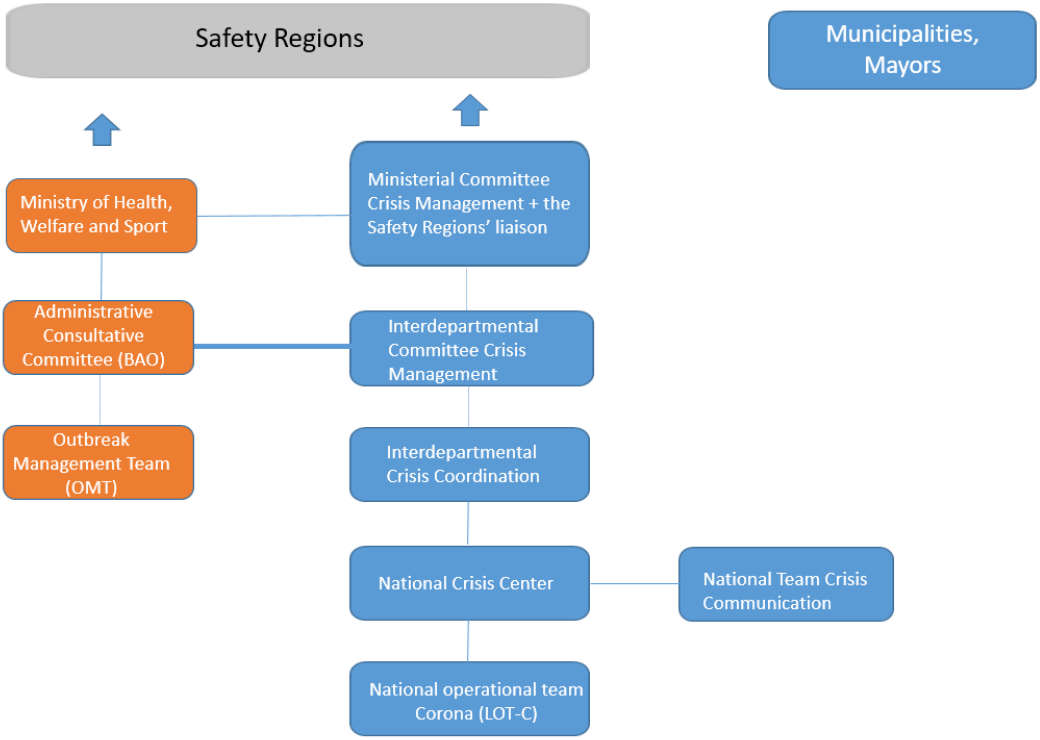


Figure 1: *Crisis management structure for COVID-19 in the Netherlands*[27]

Legitimated by the crisis, the role of the mayor (who, in local crisis situations is the "commander in chief of an emergency operation" within their municipality) was taken over temporarily by the "Veiligheidsberaad" (**Safety Council**), which consists of the mayors of the main cities in the **25 Safety Regions** (in legal terms, they are "verlengd lokaal bestuur", in English "extended local government"), in order to get country-wide consistency in the implementation of measures. On 12 March, after the prime minister's press conference, the Safety Council decided to seriously "**scale up**" their crisis management organizations by means of their standard operational procedures (Van Duin, Wijkhuijs, Domrose, Berger, & Leene, 2020). Minister De Jonge, however, is the responsible for the decisions, since the Safety Council doesn't have the formal decision-making power. However, the chair of the Safety Council (currently the mayor of Nijmegen), participates in the MCCb meetings so that the Safety Council (representing the Safety Regions) are part of the agenda setting power.

During the crisis response operation, the member association GGD/GHOR (GGD – Municipal Public Health Service; GHOR – Medical Response Organization in the Region) and the ROAZ (Regional Network Healthcare Crisis Response[28]), chaired by professor Ernst Kuipers, have been in charge of the response operation. Whereas the OMT gives advice to the government, which decides what measures to take, the 25 GGD regions are responsible for executing the policy and hence the **actual response**. During crises, the GHOR, headed by the director of Public Health, coordinates the collaboration between the many public and private healthcare organizations involved in the crisis response (which make information sharing about capacity, for example, a challenge), and between other crisis response organizations including the Fire Service (in the Safety Region) and the National Police.

[27] Source: https://www.nctv.nl/actueel/nieuws/2020/03/09/nationale-crisisstructuur-actief-voor-coronavirus

[28] https://www.lnaz.nl/acute-zorg/taken-roaz Members of the network: Hospital Boards; Board of the Safety Region, GGD/GHOR, GGZ (Mental Health Organizations), General Practitioners, Obstetrics and Gynecology.

To deal with the increasing demands of the Safety Regions' operational capacity, a "Landelijk Operationeel Team Corona (National Operational Team Corona; LOT-C)",[29] was set up on 20 March as an ad-hoc, temporal organization (Burke, & Morley, 2016) responsible for making sense of the **operational** aspects of the crisis response and executing the complex crisis response tasks.[30] The LOT-C was organized via various units, inspired by the UN-OCHA (United Nations Office for the Coordination of Humanitarian Affairs) cluster system for humanitarian response (as some of the practitioners had a background in humanitarian response). It was embedded in the 25 Safety Regions who, by Dutch law, play an important role in **emergency response** and **crisis management**.[31]

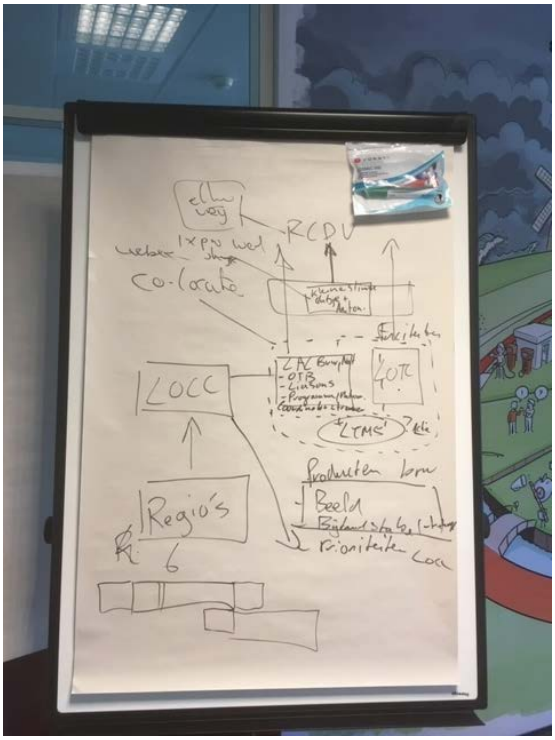
The LOT-C units included: Health Care; Continuity and PPEs; Scenarios, planning and behavioral protocols; Policy and Stakeholder collaboration; Societal Resilience; Civil–Military collaboration; Information and Communication. The Societal Resilience unit was inspired by the US Federal Emergency Management Agency's (FEMA) "Whole Community Approach to Emergency Management" (FEMA, 2011) and was partly an answer to Dutch citizens' first reactions to the crisis, for example, anxiety resulting in the hoarding/stockpiling of toilet paper (also seen in other countries: Garbe, Rau, & Toppe, 2020; Manderson, & Levine, 2020) and partly a way to recognize and align with the many spontaneous response initiatives set up by individual citizens or citizens networks.

Because of the ad-hoc nature of the organization, the crisis managers had to make sense of the environmental, institutional landscape and how their unit was embedded in it, to which Pictures 1–3 bear witness. The pictures were taken (with permission) in the LOT-C operational room. They show how the units' members, the practitioners, tried to make sense of the complex situation (due in large part to the myriad organizations, associations and foundations of the Dutch healthcare landscape) by designing a "mental map" of "significant factors" that may influence the process of (operational) decision-making. The members in the operational units thus tried to create **collaborative awareness** (encompassing knowledge about the formal structures and informal ways in which organizations do work and achieve their goals to support coordination and the synchronization of work processes; Treurniet, Van-Buul Besseling, & Wolbers, 2012) and **situational awareness** (i.e., the perception of elements and events in the environment with respect to time or space, the comprehension of their meaning, and the projection of their future status; Endsley, 1995) in relation to COVID-19. The mental map contains issues like environmental dynamics (international, national, vital infrastructure), required skills, crisis characteristics, response capacity and societal responses.

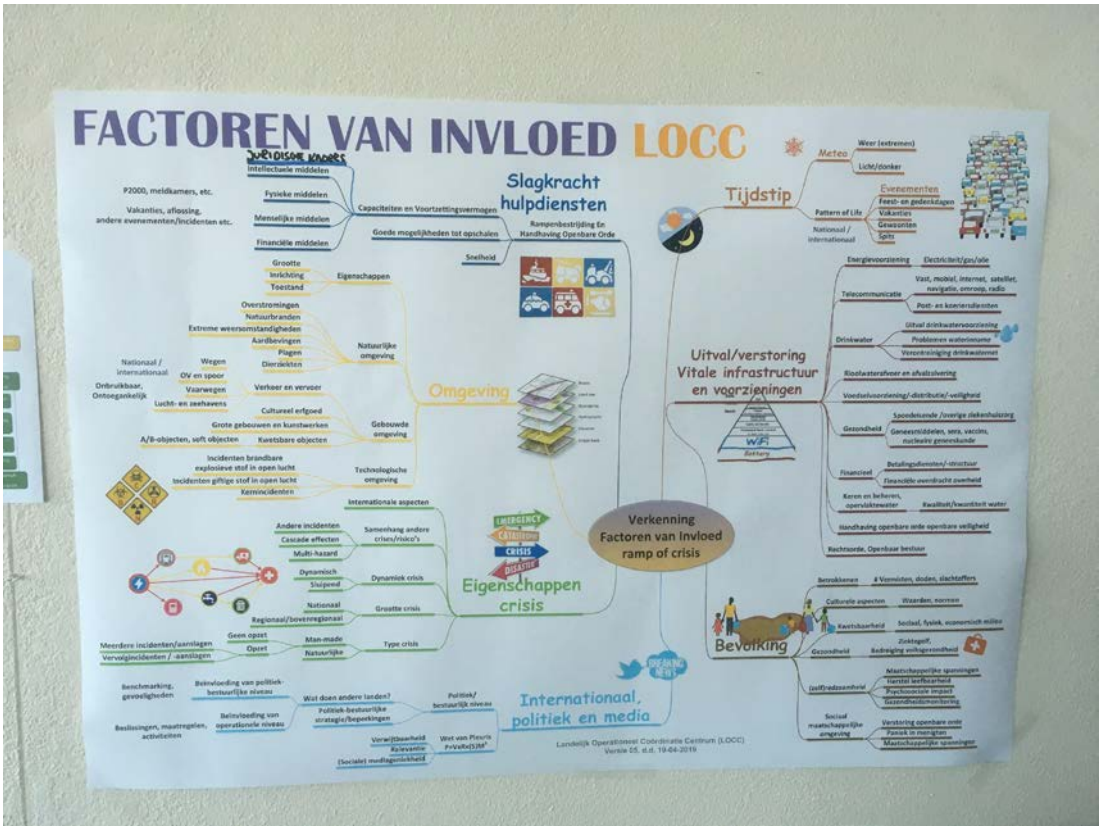
[29] https://www.brandweer.nl/brandweernederland/nieuws/2020/landelijk-operationeel-team-corona-lot-c

[30] https://www.waardigheidentrots.nl/wp-content/uploads/2020/04/DPG-regionale-aanpak-voor-zorg-aan-kwetsbare-patiënten_corona.pdf

[31] The first author of this document, Kees Boersma, participated in the LOT-C Societal Resilience unit as an independent expert March - June 2020.



***Picture 2**: Creating collaborative awareness*



***Picture 3**: Making sense of the crisis - mental model for creating situational awareness at the LOT-C*

Measures to control the spread of the virus

The Dutch response, according to the RIVM (quoted from the website), is the following: "The Netherlands response to the novel coronavirus is the '**maximum control**' approach. That means working together to ensure that people follow the hygiene rules, maintain physical distance from each other and that some venues only open to a limited extent (and only when possible). People who have symptoms that correspond to the novel coronavirus, are asked to **get tested** immediately and **stay at home** until the results are known. In this way we ensure that people are less likely to infect each other. If someone is infected, the GGD[32] carries out source and contact tracing. People who may have been infected by this patient are then informed that they must stay at home, because they may also become ill (and contagious) and have to be tested if they develop symptoms. In this way we can contain the virus at the very moment it emerges."[33]

The OMT did not advise using the maximum control approach right away (its first meeting to discuss the COVID-19 outbreak was held 24 January; the first confirmed case in the Netherlands was on 27 February). Its first advice to the minister was this (translated from Dutch): "The OMT emphasizes that from a scientific point of view, there is still much uncertainty about the epidemiology, severity and transmission of 2019-nCoV. However, the increase in the number of cases in China and the occurrence of cases outside China's borders has prompted the OMT to recommend additional measures. It must be taken into account that in the coming period, these recommendations will probably often be adjusted due to increasing insights and a changing epidemiology".[34] Professor Marion Koopmans, prominent member of the OMT and advisor to the WHO, had been predicting a global infectious disease outbreak for years, but the way the COVID-19 outbreak spread still came as a surprise to her, as she stated in a public interview: "I've really been looking at China with the fascination of a scientist. They had done such a crazy stunt in Wuhan with that massive quarantine that I thought: they are stopping the virus. In retrospect, you have to conclude that the way of distribution was simply much more underground than I had initially estimated".[35]

Since February, the government's focus has been on how to "**flatten the curve**".[36] The communication about the measures, particularly by Prime Minister Mark Rutte, suggested that the initial policy was to create "herd immunity" or controlled population immunity. This, however, was never part of the OMT's policy advice, as it soon became clear via the international literature that the herd-immunity approach does not seem to work for COVID-19 (Kwok, Lai, Wei, Wong, & Tang, 2020). The main concern in this early phase of the crisis was whether or not the hospitals could cope with the increasing numbers of patients that had to be hospitalized and treated in intensive care (IC) units. Professor Diederik Gommers, chair of the Nederlandse Vereniging voor Intensive Care (the NVIC, the Dutch

[32] The Medical Response Organization in the Region: https://www.ggd.nl/

[33] https://www.rivm.nl/en/novel-coronavirus-covid-19/omt

[34] https://www.rivm.nl/coronavirus-covid-19/omt

[35] https://www.volkskrant.nl/mensen/viroloog-marion-koopmans-leuk-was-het-niet-om-op-deze-manier-gelijk-te-krijgen~bf6e41bd/

[36] Flattening the curve refers to the visual representation from models predicting the number of infected people needing healthcare over time. It includes an attempt to control the basic reproduction number (R_0). In short, when $R_0 > 1$, the infection can start spreading in a population, but not if $R_0 < 1$. The larger the R_0, the harder it is to get the virus under control.

Association for Intensive Care[37]) and member of the OMT, became a public figure as he regularly reflected on **hospital capacity** challenges in the public media.

The measures taken by the Dutch government and the way they were communicated and implemented were labeled "**intelligent lockdown**"[38] (De Haas, Faber, & Hamersma, 2020). The measures were relatively mild compared to other European countries, especially those in Southern Europe, because the government counted on Dutch citizens' **commitment to comply** with them. For example, Prime Minister Rutte told a press conference on 16 March, "If someone in your family is ill, everyone should stay home. In other situations, if you want to get a bit of fresh air, you can, but go alone".[39] The measures and policies were announced regularly through formal **press conferences**, during which the prime minister, the minister of the Ministry of Health, Welfare and Sport, Hugo de Jonge, and the director of the Centre of Infectious Disease Control, Jaap van Dissel, were present.

Probably the most important (constant) measure was (and still is) that people needed to keep a **1.5-meter distance** between each other at all times unless they were members of the same household. Schools, restaurants and cafés had to close down. At the end of his 11 March press conference, the prime minister said, "We have to fight this battle with 17 million people". In practice, this meant that the success of the policy was contingent on **compliance** and **collective responsibility** (Boterman, 2020). The first stringent national COVID-19 crisis measures were taken by the Dutch government on 15 March, and ever since, the crisis management approach has been to **adjust the measures** to the "new" situation at hand, be it the spread of the virus or citizens' responses to the measures.

The crisis measures were decided at the national level, by the national government, which follows almost all of the OMT's advice,[40] to be implemented at the local/regional level by the 25 Safety Regions (with the 'Veiligheidsberaad', then implemented at the local/regional level by the 25 Safety Regions (with the Veiligheidsberaad as the decision-making agency).[41] The national government chose to implement a **one-size-fits-all strategy** through a set of concrete measures for all 25 Safety Regions. "With 50% of the knowledge, we have to take 100% of the decisions", the prime minister said at a 12 March 2020 press conference.[42] In practice, this meant that – roughly speaking – the Safety Regions implemented the same measures, although they (i.e., the regional boards) made some adjustments over time. The governance practice in the Netherlands can be described with the metaphor "Poldermodel" ("the Polder" is a lowland area that was once under the sea but has since been separated from it by dykes), which refers to the Dutch consensus culture in public policy making (Prak, & Van Zanden, 2014). In practice, this governance style results in a continuous **negotiation** about roles and the decision-making process.

[37] https://nvic.nl/covid-19

[38] https://www.bbc.com/news/world-europe-52135814

[39] https://www.rijksoverheid.nl/documenten/toespraken/2020/03/16/tv-toespraak-van-minister-president-mark-rutte

[40] https://www.rivm.nl/en/novel-coronavirus-covid-19

[41] https://www.government.nl/topics/coronavirus-covid-19/tackling-new-coronavirus-in-the-netherlands; https://www.government.nl/topics/coronavirus-covid-19

[42] https://www.rijksoverheid.nl/documenten/mediateksten/2020/03/12/persconferentie-minister-president-rutte-en-minister-bruins-naar-aanleiding-van-de-maatregelen-tegen-verspreiding-coronavirus-in-nederland

Crisis communication

The Dutch government's choice to follow almost all of the OMT's advice has become a subject of dispute and at times heated debates about the **transparency of the advice**[43] and the **decisions** made by the government.[44] The discussion has become more vicious over time due to uncertainties about the virus and about the effectiveness of the measures (in-house ventilation, wearing of face masks) taken in relation to the spread of the disease (an intended consequence) and to issues such as the economic crisis, deferred care of non-COVID-19 patients and mental health issues (unintended consequences of the measures).

For **communication** about the measures, the government uses press conferences and other official channels such as Ministries' websites to provide **up-to-date information**. In dealing with misinformation spread via social media, it tries to strike a balance between preventing potential harm caused by fake news and protecting the freedom of speech. Responding to questions about this from political parties in the Parliament, Kasja Ollongren, minister of the Interior and Kingdom Relations, stated on 5 June, "The importance of access to timely and reliable information is urgent during the COVID-19 crisis. In our world, where information spreads at lightning speed, it is difficult to check (in)correct information about facts in a timely manner. Citizens themselves remain responsible for assessing the value of information. The national government helps citizens with this by providing reliable information about the virus through official channels. I therefore refer to the websites of the National Government and the RIVM. Thus, this positive effort to properly inform the public does not interfere with freedom of speech".[45]

During communications with the public, during press conferences and during gatherings of the Dutch Parliament, the OMT experts, and in particular the Chair of the OMT, professor Jaap van Dissel, and his colleagues including professor Marion Koopmans and professor Aura Timen (Secretary of the OMT) continuously emphasized the many uncertainties and the unknowns (such as whether herd immunity would be effective[46]) on which their advice has to rely.

As soon as the Dutch government decided to move toward more freedom in public spaces (in June), **differences** in how measures were **adjusted** and turned[SS1] into concrete practices at the local (city) level increased. For example, the mayors of Amsterdam[47] and Rotterdam[48] decided that, as of 5 August, it is mandatory for people above the age of 13 to wear non-medical face masks in certain parts of the city where keeping the required 1.5 meter distance is challenging. Communication about the changes in measures and the differences in implementation at the local level challenged clear crisis communication because it interfered with feelings of distrust and the belief in misinformation (Hameleers, Van der Meer, & Brosius, 2020).

[43] https://nos.nl/nieuwsuur/artikel/2331727-wetenschappers-bekritiseren-gebrek-aan-openheid-corona-adviezen.html

[44] Opinion maker Maurice de Hond, for example, started a discussion at his website to promote in-house ventilation an issue that, according to him, has been neglected by the OMT: https://www.maurice.nl/

[45] https://www.rijksoverheid.nl/documenten/kamerstukken/2020/06/05/beantwoording-kamervragen-over-europese-commissiemededeling-inzake-de-bestrijding-van-online-desinformatie (translation by the authors).

[46] https://www.jhsph.edu/covid-19/articles/achieving-herd-immunity-with-covid19.html

[47] https://www.amsterdam.nl/en/coronavirus/more-about-face-masks-mandatory-parts/

[48] https://www.rotterdam.nl/english/face-masks-compulsory/

Outcomes, dilemmas and frictions

The continuous adjusting of the focus and the measures, which makes sense from a crisis management point of view (as stated in section 2.1), became a **part of serious debates and criticisms**. Ira Helsloot, a professor of crisis governance, published an opinion piece in a Dutch national newspaper, together with the journalist Peter Olsthoorn, in which he stated: "Of course it is necessary to take strict measures against corona, but proportionally please. So: adults should keep distance, but no isolating and locking up healthy people, no paranoia about infections. … Healthcare is just doing everything in its power to save lives, especially those of younger victims. We are also trying to prolong the lives of weak old people. A very commendable endeavor. But reducing regular care and creating an economic recession will cost hundreds of thousands of Dutch people years of healthy life. Our well-intentioned measures also affect human life".[49]

However, generally speaking, there was broad consensus in Dutch society to comply with the government's measures, which followed most of the OMT's advice. Figure 2 gives an overview (timeline) of the main measures taken by the Dutch government (A–G). Given the numbers of confirmed cases of hospitalizations and deaths (the absolute number of COVID-19 patients is unknown because of limitations in testing), there is evidence that "**the curve has been flattened**" due to the measures taken and the citizens adhering to them. Government announcements regarding COVID-19 measures between 24 February and 17 May (a selection of the main trigger announcements)[50] were as follows:

A: 24 February - 1 March

- All residents are asked to self-isolate once being diagnosed with COVID-19 or living in a household with a confirmed COVID-19 case

B: 2 - 8 March

- Residents of the province Noord-Brabant (South Netherlands)[51] are asked to self-isolate when experiencing symptoms

C: 9 - 15 March

- All residents are asked to:
  - self-isolate when experiencing symptoms
  - work at home as much as possible
  - keep distance from others
- Gatherings of more than 100 people are prohibited
- Closure of various public places, including:
  - (pre) schools and universities
  - restaurants and bars
  - sport clubs

[49] https://crisislab.nl/wordpress/wp-content/uploads/ArtikelVK-hou-hoofd-koel-perspectief.pdf

[50] Data from ACAPS: https://www.acaps.org/covid19-government-measures-dataset and Dutch Government: https://www.rijksoverheid.nl/onderwerpen/coronavirus-covid-19

[51] Noord-Brabant was the province in the Netherlands that was most hit by the virus

- Professions that require direct contact, such as hairdressers and masseurs, are prohibited

D: 16 - 22 March (the "peak of the crisis" in terms of confirmed cases)

- All residents are additionally asked to:
  - stay at home as much as possible
  - self-quarantine when someone in your household has a fever or dyspnea
- All gatherings are prohibited
- Visiting nursing homes is prohibited
- Groups of more than 2 people in public spaces are required by law to keep 1.5 meters distance (except members from the same household)
- Law-enforcement is allowed to hand out fines to those who do not adhere to the measures

E: 23 - 29 March

- All measures extended until 28 April 2020

F: 20 - 26 April

- Children can play sports outside in groups starting 29 April 2020
- Preschools and primary schools reopen (partly) starting 11 May 2020
- All other measures extended until 19 May 2020

G: 4 - 10 May; 1 June - present

- Since 11 May 2020:
  - Advice to "stay at home as much as possible" is replaced with advice to "avoid crowds"
  - Gatherings up to 30 people are allowed (with 1.5 meters distance)
  - Most professions requiring direct contact can resume working, with extra precautions
- Since 1 June 2020:
  - Restaurants and bars reopen (max. 30 people per establishment and with 1.5 meters distance)
  - Primary schools reopen (all days of the week)
  - Gatherings up to 100 people are allowed (with 1.5 meters distance)

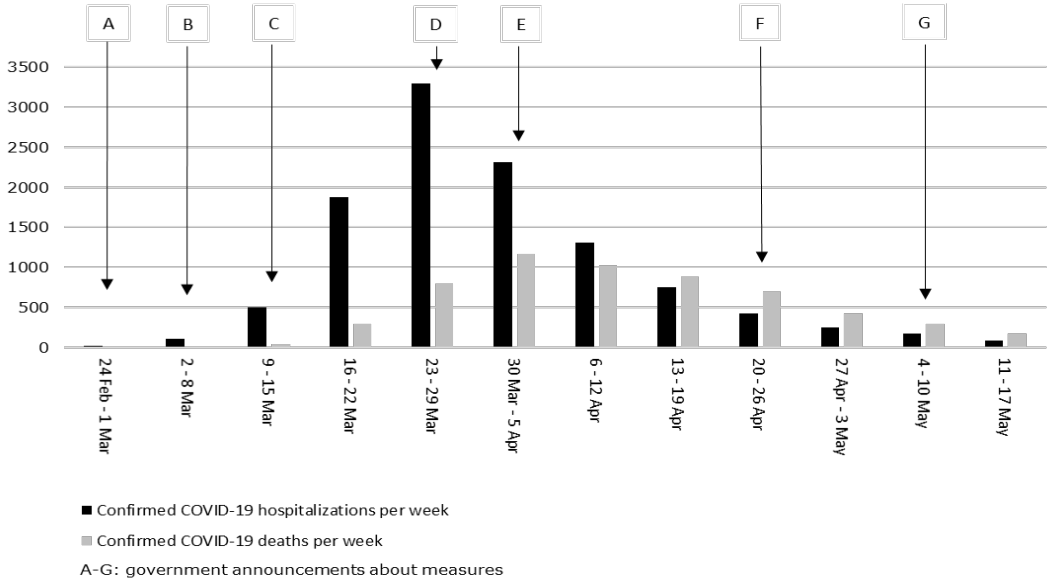


Figure 2: *The number of COVID-19 deaths per week (24 February – 24 May 2020) in the Netherlands,[52] and government announcements about implementations and relaxations of protective measures.[53]*

[52] Data from RIVM: https://www.rivm.nl/coronavirus-covid-19/grafieken

[53] Source: De Vries, Claassen, Te Wierik, Van den Hof, Brabers, De Jong, Timmermans, & Timen, 2020.

Before the crisis, the Dutch healthcare system was already under pressure due to a relatively high per capita healthcare expenditure compared to other countries, an insufficient national healthcare budget, and the increase in privatization (of many hospitals, for example, and shifting costs from public to private sources) (Kroneman, Boerma, Van den Berg, Groenewegen, De Jong, & Van Ginneken, 2016). The COVID-19 outbreak therefore put a **heavy burden on the healthcare system**; IC units in particular struggled with the steep increase in patient numbers (Verelst, Kuylen, & Beutels, 2020). Other parts of the healthcare system, including nursing and elderly homes, felt neglected, as they ran short on PPE supplies and only received policy makers' attention after the capacity of IC units was dealt with (Schols, Poot, Nieuwenhuizen, & Achterberg, 2020). PPE supplies for care homes, for example, have been suboptimal throughout the crisis and testing capacities have been limited (Gordon et al., 2020). However, at the local level, creative solutions have helped in coping with the capacity problems. The ROAZ of the province of Noord Brabant, for example, set up dialogue tables to facilitate the collaboration between the many healthcare providers (Van de Poel, 2020).

As soon as the IC units could cope with patient numbers and the number of patients and deaths decreased, the government started to lift the lockdown restrictions. This policy required a strategic "calibrated, stepwise approach" that, as dr. Michael J. Ryan, Chief Executive Director of the WHO Health Emergencies Programme explained, emphasized the need for **testing**, **contact tracing**, **quarantine** and **validated numbers** for those matters.[54] The Dutch government followed this advice, relying on voluntary, **self-quarantine** of those who have COVID-19 symptoms and of those who returned from countries with a severe outbreak.

Because of the "intelligent" nature of the lockdown and the **stepwise release** of the restrictions after 1 June, the measures were **not free from interpretation**. For example, in March, a pre-planned meeting with more than three people in the park was forbidden but spontaneous encounters were allowed (under the condition that the people who spontaneously met would keep the 1.5 meter distance). Since 1 June, people have been allowed to abandon the 1.5 meter rule when traveling by plane or public transport (with the condition that face masks are worn at all times), but at the terraces, they have to maintain the distance rule. The release of the lockdown also laid a heavy burden on the 25 GGD regions, which – because of **capacity problems** – have had a hard time fulfilling their operational tasks. In addition, the "corona dashboard(s)" that have been put in place lack information due to limited testing capacities and variations in reporting on and collecting data in various Safety Regions. Because of these issues, the GGDs in Amsterdam and Rotterdam announced in early August that they could only carry out limited contact tracing.[55] The GGDs' capacity problems have become the subject of serious debates between the government and the Parliament, and they are one of the reasons why the government started to consider making quarantine compulsory.

Though Dutch citizens' commitment to comply with the measures remained high after 1 June, some interest groups have shown **increasing dissatisfaction** with the measures and the way the lockdown has been released. In particular, restaurant and bar owners felt disadvantaged compared to business owners in other sectors because they had to implement certain measures (for example, the

[54] https://www.eismd.eu/covid-19-what-you-need-to-know-about-the-coronavirus-pandemic-on-7-april/

[55] https://nos.nl/artikel/2343195-amsterdam-en-rotterdam-beperken-contactonderzoek-landelijk-capaciteitstekort-dreigt.html

registration of clients). In addition, citizens have been mobilized to join social movements to protest against the legitimation of the measures and the overall COVID-19 crisis policy.[56]

Regarding the **legal** aspects of the policy measures, the Dutch government has used existing laws, in particular, the Public Health Act[57], meaning that no state of emergency had to be declared[58] to deal with the crisis (i.e. the Constitution had been upheld). Yet, there is an ongoing dispute about the **legal status** of the measures taken and the transparency of the policy decisions (Bergkamp, 2020; Boomsma, 2020) and about whether an ad-hoc, temporal law is needed to justify the measures. An important part of the policy debate, raised partly by the National Ombudsman Reinier van Zutphen,[59] is the need to create the legal status of the government's policy and the concrete measures: until now, the measures have been taken as part of the Dutch Public Health Act (health measures) and the Dutch Security Regions Act (public order and safety) Such actions should only be temporary. Otherwise, there is a danger of a lack of democratic checks and balances: a lot of power in the hands of the central government (limited control by the Parliament) and a lot of power delegated to the Veiligheidsberaad (limited role of the local mayors/municipal councils).[60] This is why, on 21 April 2020, the Dutch Parliament approved the "Temporary act COVID-19 Justice and Security" (Tijdelijke wet COVID-19 *Justitie en Veiligheid*) (the **COVID-19 Act**). The Act will be in force until 1 September 2020, after which it may be extended with consecutive periods of two months each.[61]

In early August, a group of independent experts with various backgrounds (and levels of expertise) mobilized themselves in a so-called "**#redteam**".[62] Supported by the opposition and eventually invited by the Ministry of Health, Welfare and Sport, they provide "lessons learned" and alternative views (vis-a-vis the OMT's) regarding the effectiveness of measures (such as in-house ventilation, opening of schools) and the unintended consequences of the policy (such as the economic crisis). The name of the group is inspired by "Red Team–Blue Team" cyber security exercises. The Blue Team's responsibility is to defend the unit or organization from a possible attack, whereas the members of the Red Team are recruited externally to test the quality of the Blue Team's strategies and actions (Heckman, Walsh, Stech, O'boyle, DiCato, & Herber, 2013). The Red Team, in other words, should prevent tunnel vision or groupthink from occurring.

Compliance with the measures and societal response

Despite the uncertainties, legal disputes, and alternative views concerning the measures, the **willingness to comply** with them remains relatively high. Since the implementation of the measures, the RIVM's behavioral unit (in a collaboration with the GGD/GHOR that was commissioned by the Ministry of Health, Welfare and Sport and financed by the Netherlands Organization for Scientific Research) has monitored the **public's perception of their effectiveness**. The outcome of the most

[56] For example, the group Viruswaarheid attracted a lot of media attention: https://viruswaarheid.nl/
[57] https://wetten.overheid.nl/BWBR0024705/2020-03-19
[58] https://www.debrauw.com/legalarticles/declaring-a-state-of-emergency-in-the-netherlands-what-additional-powers-for-government/
[59] https://www.dutchnews.nl/news/2020/06/coronavirus-law-under-fire-from-lawyers-local-authorities-and-the-ombudsman/
[60] https://www.debrauw.com/legalarticles/declaring-a-state-of-emergency-in-the-netherlands-what-additional-powers-for-government/;
[61] https://zoek.officielebekendmakingen.nl/stb-2020-124.html
[62] https://www.nrc.nl/nieuws/2020/08/11/woord-van-rivm-is-niet-meer-heilig-in-den-haag-a4008513

recent survey (12 July) shows **great confidence** in how the Dutch government tries to keep the coronavirus under control: 72% have (a lot of) confidence, 5% have no confidence (at all). According to 70% of the participants, the Netherlands is doing (much) better than other countries, while a smaller group scores the Netherlands policy as (much) worse (4%). However, the survey also showed that 51% of the participants sometimes find the rules of conduct inconsistent. When asked what they then do, more than half (57%) answered that they ignore the inconsistencies and follow the government's advice. However, 35% to 41% of participants said they become confused and less motivated to follow the rules, or they do not know what to do.[63]

In addition to the commitment of the majority to comply with the measures, the Dutch society generally proved to be **resilient** enough to cope with the crisis, though it did cause serious stress among young adults. There is also evidence that older people in particular suffered from loneliness due to the COVID-19 measures (Van Tilburg, Steinmetz, Stolte, Van der Roest, & de Vries, 2020), but mental health has remained roughly stable. In the early days of the crisis, **people engaged** in spontaneous hand clapping to support healthcare professionals and in making music in front of nursing and elderly homes to support the inhabitants suffering from isolation. Later on, spontaneous initiatives were set up to support vulnerable fellow citizens (for an elaborate example, see Section 2.4.3). Like in other crisis situations (Boersma, Ferguson, Groenewegen, Mulder, Schmidt, & Wolbers, 2019), **online platforms for spontaneous volunteering**, including Coronahelpers[64] and Ready2Help (a Netherlands Red Cross program[65]) were set up to facilitate volunteers and to enable their collaboration with local authorities. Citizen volunteers also started to collaborate with journalists to **detect and tackle fake news** and hoaxes posted on social media.[66] They joined the UK' Independent Fact Checking Charity[67] and the International Fact-Checking Network, a unit of the Poynter Institute[68], dedicated to bringing together fact-checkers worldwide in the fight against the infodemic (Zarocostas, 2020).

First lessons to be learned from the Dutch case:

- The Dutch governance approach to mitigating the COVID-19 crisis was based on **national standards**, institutionalized protocols and organizational response structures. An important characteristic is the **separation** between the OMT's **advice** (based on (ongoing) scientific insights), the translation toward administrative procedures (via the BAO) and the **formal decisions** by the Dutch government. Contingent to the complexity of the crisis, the crisis management system has been scaled up and ad-hoc organizations have been added to the operational core.
- The **complicated health care system** (e.g. the role of the Health Care regions,[69] privatization) made it difficult for formal authorities to coordinate capacity issues (e.g. IC units) and to gain adequate information about capacities and the spread of the virus, as the many involved organizations, institutes and networks have their own rules and logics.

[63] https://www.rivm.nl/gedragsonderzoek/maatregelen-welbevinden/communicatie-en-vertrouwen
[64] https://www.coronahelpers.nl/
[65] https://www.rodekruis.nl/hulp-in-nederland/ready2help/
[66] https://www.apache.be/2020/03/13/coronavirus-nepnieuws-fakenews-clickbait/
[67] https://fullfact.org/
[68] https://www.poynter.org/ifcn/
[69] https://www.lazk.nl/

- To establish a **coherent yet flexible crisis management approach** both within the operational unit LOT-C and between the LOT-C and the OMT was challenging due a lack of coordination and upscaling procedures that transcend the Safety Regions (in which the operational response is embedded).
- Because of the "intelligent" nature of the lockdown, measures were not free from interpretation. **Scaling down procedures** and policies (e.g., about the winding-down restrictions in the lockdown, and eventually an "exit strategy") were lacking (i.e., non-routine), leading to confusion and even protest.
- Communication from the government (prime minister and minister of health) regarding the choices made has been regarded as relatively open and transparent, but as the crisis has evolved, serious questions have been raised about the **legitimacy of the measures** ("noodverordening") and the lack of a democratic process (i.e., an unclear role for the Parliament in policy- and decision-making).
- The many opposing interests of stakeholders in Dutch society caused contradictions, dilemmas and heated debates that became more severe as soon as the lock down measures were relaxed and different measures put in place for various sectors. **Adequate crisis communication** (should) include a dialogue between the various stakeholders and interest groups to think through the implications of the measures and to adjust them as needed.
- The creeping nature of the crisis puts a heavy burden on society. The partial lifting of the measures, which puts certain sectors in society at a disadvantage, causes **concerns**, **unrest** and **uncertainty**. However, Dutch citizens have been generally willing to comply with the measures. Citizens' initiatives and spontaneous volunteers' actions were indicators of an ability to go beyond merely coping with the crisis to having a **strong societal resilience**.

2.4.1.2 The institutional landscape in Finland in relation to the COVID-19 crisis[70]

In Finland, the Finnish Institute for Health and Welfare (THL), being an independent research institute that operates under the Ministry of Social Affairs and Health (MSAH), plays the main **advisory role** in the response to the COVID-19 pandemic. Generally, besides providing guidance it also monitors infectious disease threats, produces knowledge on infectious diseases and assesses the effectiveness of measures. Other important organizations include the National Emergency Supply Agency (NESA), which has had a key role in guaranteeing the provision of protective equipment, and the largest hospital, the Helsinki University Hospital (covering the population of 24 municipalities, where one third of Finland's total population lives), where most confirmed COVID-19 cases have been recorded.

The MSAH and its Preparedness Unit **oversees and coordinates preparedness for emergency** conditions, such as in the case of the COVID-19 outbreak. In line with relevant legislation, and the principles of the government resolution "Security Strategy for Society 2017"[71] national preparedness plans in the context of the COVID-19 pandemic have been developed. Adopting the principles of a "cooperation model", these **plans coordinate the actions** of various societal actors and administrative branches of the state apparatus. Assisting with this is the Advisory Board for Health and Welfare in Emergency Conditions, a committee appointed by the government. The Advisory Board is to plan and prepare the arrangements for social and health care operations during emergency conditions[72].

The political and societal foundations for Finland's response to COVID-19 are conditioned by history and geopolitical concerns (Moisio, 2020). The pandemic has been framed (often alluding even to war connotations) a national security issue and the justification of measures stemmed from such a conceptualization of the situation. The Security Strategy for Society has been updated for the COVID-19 emergency and prepared to achieve **wide cooperation for comprehensive security**, with input from a wide range of societal actors, including the Finnish authorities, the business community, organizations, NGOs and citizens. Each administrative branch of the Finnish state is responsible for the implementation of the strategy, based on its area of expertise. The Security Committee monitors the implementation and develops cooperation together with the preparedness managers of the various ministries. This approach stems from so-called **total defense policies** (Wither, 2020). The total defense perspective combines the armed forces and civil society in a **comprehensive 'whole of society' approach to security**. As a consequence, Finnish perspective on security is comprehensive, and **national preparedness** is viewed as critical **for societal resilience**. Hence, Finland has for decades engaged in extensive preparation (including planning, resourcing and stockpiling of medical, fuel and food supplies and stages regular training and exercises) to ensure societal security in the event of a disaster or disruptive event.

In Finland, the allocation of responsibilities between the two levels of government, namely the state (and regional offices) centrally and the municipalities locally, has not changed during the COVID-19 crisis (there are no regional authorities). The state undertook the role of centralized planning and global coordination of activities, while the municipal level remained responsible for schooling, social

[70] This section provides an initial rapid assessment of the crisis governance approach in Finland. It is not meant to be an evaluation about the effectiveness of the policies or measures taken, as that requires more time and research, nor does it give a comprehensive overview of the Finnish institutional landscape.

[71] https://turvallisuuskomitea.fi/en/security-strategy-for-society/

[72] https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/70917/URN%3ANBN%3Afi-fe201504223246.pdf?sequence=1

and health services, including the oversight of the five large university hospitals across the country. These two actors have been controlling **formal decision-making**. The administrative tradition in Finland results in comparatively **small ministries and autonomous administrative authorities**, which prevents central state authorities to react quickly with political decisions and often becomes **challenging to overrule local authorities** and their expertise even when it was considered politically necessary (Strang, 2020).

A special legislation, the Emergency Powers Act, came into force on 17 March 2020 for the first time in the country's modern history, giving state authorities the freedom to take **extraordinary measures** to tackle the crisis (Moisio, 2020). Coordination between different levels of government has been implemented within the realm of existing frameworks. Ministry departments emphasized reaching out to the municipal authorities of large cities (with a population of over 100.000 people) to align action. Within the government, the co-operation between ministries has been strong and enacted through the establishment of an **inter-ministerial working group**. The national COVID-19 working group comprising the permanent secretaries of ministries has been **supported and advised by the epidemiological situational view group, and the national COVID-19 science panel** staffed by experts from various relevant scientific disciplines. At the local level, there have been special cooperation groups representing various authorities, collecting and exchanging information, and communicating on various levels.[73]

Authorities from central and local government have largely used existing structures and organizing rules to **coordinate activities and align action** during the crisis. They held regular meetings, issued joint situation reports, adapted measures and allocated resources in line with their respectives areas of formal responsibility. Finnish municipalities are accustomed to function with high levels of autonomy resulting in inter-municipal cooperation in response to the pandemic being a rare find. Nonetheless, some municipalities deviated from this norm; the city of Tampere, for example, and the neighboring municipalities collaborated to jointly buy protective clothing and share resources, which was particularly beneficial for smaller municipalities, who might otherwise have had problems buying this equipment during a period of increased demand and scarcity of supplies[74]. The plans were also supposed to have been updated and implemented in collaboration with the private and third sector. However, the private sector's participation has been suboptimal, while there has been realization of deficient effective incentives and enforcement mechanisms.

Illustrative examples of health and financial support measures[75]

The Finnish government has prepared a financial package of approximately EUR 1.45 billion to support companies and to alleviate the negative effects of COVID-19 epidemic and EUR 1 billion to support the country's municipalities. The government is monitoring local government finances and can adjust the support package later in 2020 if necessary. It will also use discretionary **government grants** to reimburse hospital districts for the extra costs, such as spending on intensive care, caused by the coronavirus crisis. Further, the municipalities' share of corporation tax revenue will be increased until the end of 2020, and central government transfers to municipalities for statutory basic public services will be increased during the same period. The central government will also compensate the

[73] https://www.coe.int/en/web/good-governance/cddg-and-covid#
[74] https://www.coe.int/en/web/good-governance/cddg-and-covid#
[75] https://www.coe.int/en/web/good-governance/cddg-and-covid#

municipalities for temporary 2020 tax losses arising from its decisions regarding tax payment arrangements for businesses. These measures have been **actively discussed with the Finnish Association of Local and Regional Authorities** and they supported municipalities to cope with the situation.

The development of the crisis was constantly evaluated throughout the country. Because the Uusimaa region (Finland's most populous region, which contains the capital city Helsinki and where almost one third of the country's population resides) consistently recorded the highest number of new virus cases it was temporarily declared as a region with restricted access (Moisio, 2020). Similar measures were considered in other parts of the country (Länsi-Pohja in Lapland near the borders with Sweden and Kainuu near the borders with Russia) due to high virus cases compared to their emergency service capacity.

COVID-19 Timeline for Finland

- Jan 29 First COVID-19 patient in Finland
- Feb 26 Second COVID-19 case and first patient in Helsinki University Hospital (HUS)
- March 13 First COVID-19 patient in ICU in HUS
- March 16 Emergency Powers Act in Finland (school and borders closure, lockdown)
- March 19 HUS in 3rd state of preparedness (CMO leads)
- March 27 Uusimaa lockdown (ended April 14)
- May 6 Government resolution on a plan for Hybrid Strategy for the COVID-19 crisis[76]
- May 14 Schools reopen
- June 1 Most lockdown restrictions lifted (reopening of restaurants and public facilities)
- June 16 Emergency Powers Act repealed, declaring country no longer in state of emergency
- July 8 Most travel restrictions lifted for selected EU and Schengen area countries
- July 13 Travel between Finland and non-EU countries on EU Council 'green list' permitted
- August 13 Finnish THL recommends use of face masks
- August 19 Finish government tightens travel restrictions for specific countries[77]

Finland has so far succeeded well in curbing the epidemic. The number of deaths has been relatively low and intensive care units capacity in hospitals has been sufficient. The country has therefore decided to move from extensive restrictive measures to implementing a **hybrid strategy** based on the "**test, trace, isolate and treat**" approach. The aim of the hybrid strategy is to curb the epidemic effectively while minimizing its detrimental impact on people, businesses, and society. This will involve a controlled shift from large-scale restrictive measures to more targeted measures and to enhanced epidemic management.

[76] Government Resolution on a plan for a hybrid strategy to manage the COVID-19 crisis: https://valtioneuvosto.fi/en/-/10616/valtioneuvoston-periaatepaatos-suunnitelmasta-koronakriisin-hallinnan-hybridistrategiaksi

[77] https://valtioneuvosto.fi/en/-/10616/government-tightens-travel-restrictions-at-internal-and-external-borders

Supplies – PPE and face masks[78]

One of the key elements of the Finish response strategy has been **protecting vulnerable groups**, especially citizens over 70 years of age. The capacity of intensive care units (ICUs) in hospitals was carefully monitored. The protective clothing supply for clinical personnel was essential and good cooperation with the Maintenance and Supply Security Centre has played a key role in ensuring the supply of personal protective equipment (PPE). This was not always done without some challenges due to the high global demand of protective clothing.

Despite Finland's widely acclaimed reputation for preparedness[79], the country's level of preparedness was tested by the pandemic. Initially, the government estimated that the emergency stockpiles were going to be sufficient to meet the increasing need. However, it was soon realized that some of the stockpiled protective face masks did not meet the required quality standards. Although the country has impressive stockpiles of essential goods, such as food and fuel, it became clear that it **lacked personal protective equipment** (PPE) to meet the increased demand. The country that had been praised as the most prepared Nordic nation ended up in entering the increasingly competitive global market for PPE.

Issues of **governance quality and decision-making transparency** were raised in the ordering of face masks linked to accusations of suspected corruption and incompetence. In March 2020, NESA purchased a significant amount of Chinese face masks, which however, did not meet the European standards for hospital use. "In April, NESA ordered masks from two Finnish individuals. The first order turned out to be inadequate and the person suspected of selling the masks was arrested, and the second order was cancelled since it was suspected to be connected to money laundering. An investigation conducted for the Ministry of Economic Affairs and Employment revealed that NESA failed to conduct appropriate supplier due diligence and quality controls. The National Bureau of Investigation suspects that two NESA employees committed crimes when buying face masks. Two of the agency's management group employees were relieved from their duties, and the CEO resigned."[80] This was another example where the **relationship between the government and private sector proved precarious**.

Contradictions, inherent tensions

In response to the COVID-19 pandemic, Finland began enacting national containment measures on March 17, 2020, after **declaring a national state of emergency** using the so-called "Emergency Powers Act" (Moisio, 2020). These containment measures are necessary for protecting the right to life and health of many, but entail restrictions on some fundamental rights of people residing in Finland. Overall, the public has supported the adopted prevention measures. However, some have expressed dissatisfaction towards restrictions preventing the free movement of people within the country. **Individual rights** and other **constitutional aspects** of the measures against the pandemic have been much more central to the debate in Finland compared to other Nordic countries such as Denmark, or Sweden. This might be because Finland is a younger nation, and for historical reasons the constitution has a special role in Finland (Strang, 2020). "The application of the Emergency Powers Act made the

[78] https://rusi.org/commentary/lessons-coronavirus-finland-preparation
[79] https://www.nytimes.com/2020/04/05/world/europe/coronavirus-finland-masks.html
[80] https://rusi.org/commentary/lessons-coronavirus-finland-preparation

power of the Finnish state visible in ways unimaginable for those who understand the Nordic model narrowly as a kind of progressive "non-statehood" from which the coercive use of force is rooted out." (Moisio, 2020, 3).

"Health care professionals and public health experts have been active in the debate on which measures should be prioritized and whether current restrictions have been sufficient. While physicians have shown support toward the measures, many have also expressed **concerns over their long-term impact** on primary health care and the treatment of chronic illnesses. **School closures have been discussed widely**, and social workers have raised the alarm concerning the most vulnerable children confined at home. Pediatricians have called for schools to open as soon as possible to ensure each child's right to education" (Kimmel, & Ballardini, 2020).

Fifty renowned Finnish researchers and experts have sent an open letter to the government, proposing to develop a strategy to suppress the coronavirus, instead of the so-called "hybrid-strategy" currently applied.[81] The letter has been signed by a team of experts in various fields, including doctors, medical and biomedical researchers, economists, statisticians and mathematicians, among others.

Self-organizing principles and emergent civic participation – examples local authorities Finland[82]

In the COVID-19 crisis, municipalities in Finland came up with **spontaneous innovative ways of utilizing existing services**, as well as engaged in learning from each other. One example is the actions taken by the municipality of Raseborg in south Finland. To assist local families the municipality provided school aged children with the option of their daily meal to be delivered at their home during the period when schools were operating remotely. This support initiative helped protect the most vulnerable students, alleviated the economic strain on their families and maintained one of Finland's most famous policies, the offering of school lunch that is served to all students until high school. The same municipality developed solutions also for other vulnerable groups, such as persons over 70 who in Finland were asked to self-quarantine as a protective measure. The municipality has been calling residents over 70 to assess their needs and to inform them of the services available from the municipality (for example, delivery of groceries). And local youth centers became available online when the physical locations were closed during the lockdown.

Other municipalities offered online training and physical exercise programs on their Facebook pages, as well as personalized training at home. Also maintaining home services for people over 70 years of age became feasible when local authorities reached out and cooperated with non-governmental organizations and volunteers, coming up with innovative ways to offer various services, such as food distribution, telephone support for people in need, online help services, and others.

Communication and social media example from Finland[83]

The government in Finland recognized **social media influencers as critical actors** to society during the COVID-19 crisis, along with key workers such as doctors, nurses, bus drivers and grocery store workers.

[81] https://www.foreigner.fi/articulo/coronavirus/an-open-letter-from-50-researchers-and-experts-to-government/20200508135537005709.html
[82] https://www.coe.int/en/web/democracy/covid-19-newsroom/-/asset_publisher/ueOjQLU2N7mp/content/raseborg-finland-testing-solutions-to-covid-crisis/9357393
[83] https://www.politico.eu/article/finland-taps-influencers-as-critical-actors-amid-coronavirus-pandemic/

There has been **collaboration** between the government, NESA - the country's national emergency supply agency - and PING Helsinki, a social media influencer consultancy.[84] "PING Helsinki edits the government's messages into a social media-friendly format, and sends it to its networks of some 1,500 influencers... Influencers are free to use the messages and images as they want...Influencers participate voluntarily and do not get paid". Social media influencers' swift mobilization was possible because they have been part of Finland's emergency contingency plans when they were added to the pool of essential social actors about a year and a half before the COVID-19 pandemic broke out; the media section of NESA realized that "traditional media would not be enough to reach the whole nation in a crisis situation...Finnish people have high levels of trust in the media, and the country's press is one the world's freest. But despite that, the country is not immune to the fragmenting news landscape".

Themes and lessons to be learned

- **Preparedness** – Finland has a long tradition in multi-sectoral collaboration, also in managing health emergencies such as the COVID-19 pandemic. The country has also developed a level of **preparedness to act decisively and collectively on crises** gradually built since World War Two. In recent years Finland's strong involvement in promoting the Global Health Security Agenda (GHSA) has been pivotal. The GHSA, set up in 2014, was initiated by the Obama administration in the United States and now involves almost 50 nations working towards a common goal of boosting global and national capacity to deal with infectious diseases threats, as well as strengthening global health security (Frieden, 2020). Finland is a member of the GHSA steering group and served as the lead country in 2015[85]; the country used its time at the helm of the GHSA in 2015 to develop and pilot in selected countries an assessment tool that can be used to measure countries' health security. Since then, it has been deployed by the World Health Organization across multiple countries. Claiming **international expertise in global health crisis management and gaining recognition** as well as sharing information and international know-how have been crucial elements to cement the country's efforts towards a **proactive and comprehensively cooperative national preparedness strategy** in response to health crises. This perspective aligns with historical experience and the long established 'total defense approach', which encourages a comprehensive 'whole of society' approach to security. **National preparedness is viewed as critical for societal resilience**. Hence, Finland has for decades engaged in extensive preparation (including planning, resourcing and stockpiling and stages regular training and exercises) to ensure societal security in the event of a disaster or disruptive event. Long standing national and regional defense courses lasting up to four weeks have ensured that individuals in senior positions across society come together, understand their and their organization's role in a range of emergencies and create a common perspective.
- **Lateral coordination mechanisms** - Engagement with the private and third sector (NGOs) was needed throughout the process of updating and implementing the national plans to deal with the COVID-19 emergency. In the Finnish model of comprehensive security, extensive **cooperation across society** is seen as critical for the efficient use of resources and for an effective response. The private and voluntary sectors participation has been largely **driven by lateral and emergent processes of engagement** rather than through "coercive collaboration mechanisms". One

[84] https://pinghelsinki.fi/en/
[85] https://stm.fi/en/ghsagenda

exception where the latter process was activated in the COVID-19 response has been the government mandate for importers of certain medicines to retain larger stocks within the country than they normally would. This emergent approach to societal security is possible because the Finnish academic, economic, political, security and other societal actors (including the media) have worked together for decades as part of the national preparedness efforts to **create a culture of cooperation** which also harnesses the **high level of basic societal trust** typical of Finland as a Nordic country.

- **Cross-sectoral collaboration / WHO and EU coordination and collaboration** - Following previous pandemics, the World Health Organization and the European Center for Disease Control (ECDC) advise member states to have and implement a governance structure and plan for addressing pandemics. A whole-of-government approach, involving **multi-sector and multi-partner coordination mechanisms**, should be a key pillar of the guidelines and resources developed to help countries build their national "preparedness and response" plans. A **combination of deliberate planned systems** (interministerial work groups, national strategies, cross-sectoral situational awareness teams) **and interpersonal interactions** through ad hoc relationships among societal actors have shaped the response on the ground. While health authorities led the initial Finish response to COVID-19, various cross-sectoral mechanisms have been activated in Finland to coordinate actions with other ministries. These multi-sector agencies have different activity portfolios aimed at containing, delaying, and mitigating the virus. While examples of cross-sectoral cooperation have been evident, there have been reports by our interview informants for instances of **'territoriality'** on the ground where THL and health experts have been less keen to fully involve other actors, perceiving the COVID-19 primarily a 'health crisis'. Despite active Finish engagement in international forums (e.g. EU, Nordic Council, GHSA) **cross border coordination has been partly problematic.** EU member states and institutions reportedly failed to provide a coordinated, timely and decisive response in the early stages of the pandemic (Naydenova, 2020), while the Finish cooperation with neighboring Russia has been limited and the closing of borders with Sweden has impacted to a certain extent relations or at least the political climate of cooperation (Most European countries reopened their borders in June but none of Sweden's neighbors had relaxed their borders with it after its decision to have no COVID-19 lockdown).[86]
- **Flexibility, systemic expert dialogue at operational level** - Collectively making sense of the COVID-19 crisis data enables relational understanding and thus enlarges the coordinating capacity of actors with different institutional backgrounds. This requires all stakeholders being engaged in dialogue, during which diverse communities of professionals, practitioners, citizens, politicians and social activists are able to confront their different languages and ways of understanding across governmental, institutional and organizational boundaries.
- **Trust** - due to the relatively small size of the country, key actors know each other even on a personal basis. In addition, as a result of historical experiences and socio-political conditions voluntary associations and popular movements attained great importance in Nordic societies contributing to the creation of high levels of basic societal trust. As well as more general social trust, people in the Nordic countries also show a higher level of trust in the judicial system, social institutions and politicians than in other European countries (Calmfors, 2014). There has been therefore, an enhanced sense of **social solidarity** in Findand, which contributes to people feeling that they are part of the solution. This level of trust enables even private companies that normally

[86] https://www.businessinsider.nl/sweden-shut-out-coronavirus-reopening-by-finland-norway-denmark-2020-6?international=true&r=US

compete to develop and implement joint plans that benefit both their own business continuity and societal security in general. Owing to high levels of trust society is characterized by decreased formalities, conflicts, legal processes and reduced transaction costs[87] further supporting coordination and collaboration among societal partners and institutions.

- **Transparency** - acting with openness and transparency lays the foundation of trust. Tackling all signs of corruption is important without concealing controversial issues even during an emergency situation (i.e. the handling by the media and government of the NESA case of face masks orders). In addition the government's approach has been that all background information, evidence and evaluations, including assumptions and parameters, used as a basis for decision-making in the COVID-19 pandemic should be published (mainly on the internet) in line with the principles of open science and research. A lot of this information is also available in English and accessible to a more international audience.
- **Other lessons**
  - It has been challenging to coordinate action via remote meetings and negotiations. One important element is that in Finland municipalities have quite a strong mandate to arrange these even by normal legislation provisions.
  - The use of remote working was quite limited in Finland before the crisis, but has now grown. In the same way, methods to ensure situation control and the assessment of the situation are swiftly developing, using artificial intelligence, developing data systems and sharing data have been also much developed during the crisis.
  - The special legislation (i.e the Emergency Act) had been designed with military crises in mind and had to be 'adapted' to fit other emergency situations, such the COVID-19 pandemic; the legislation was put for the first time into a 'real world test'. Due to situational pressures, an initial tendency to organize things more centrally in a directive 'command and control' approach did not prevail eventually. Instead, a more balanced approach was adopted and implemented also allowing for local initiatives and unplanned actions in response to eventualities on the ground.

[87] https://norden.diva-portal.org/smash/get/diva2:1095959/FULLTEXT02.pdf

2.4.2 Collaborative networks - the production and distribution of Facemasks

This section provides a case study on the production of face masks in the Refugee Company's "Mondmaskersfabriek" in the Netherlands.[88] It focuses on the role of social initiatives, social entrepreneurs and innovation (Christensen, Raynor, & McDonald, 2015; Christensen, Baumann, Ruggles, & Sadtler, 2006) in the production of face masks. The context of this case study is the complex ecosystem of PPEs, particularly face masks, including production, trading and distribution (logistics) and re-use. The case is presented to illustrate the role of civil society's and private organizations' initiatives and the **decentralized**, **network nature** of the organizational response to the crisis.

Because of face mask shortages in the Netherlands, the Ministry of Health, Welfare and Sport, founded the LCH[89] (Dutch National Consortium for Medical Supplies) in collaboration with the healthcare sector (hospitals, academic centers) and suppliers and manufacturers of medical aids. The LCH was set up for the joint procurement of medical supplies that are in danger of running out. The LCH purchases medical supplies jointly, on a non-profit basis, in the national interest. It monitors the national, daily need of medical supplies and makes arrangements regarding distribution. As noted in Section 2.4.1, the member association GGD/GHOR[90] and the ROAZ[91] are largely in charge of the allocation of supplies.

In March 2020 the Refugee Company became part of the Dutch COVID-19 Crisis Governance ecosystem. It is a story of public-private-partnership in participatory governance.

Picture 4: *Production of face masks by the Refugee Company*

[88] Co-authored by Robert Larruina.

[89] The "Landelijk Coördinatiecentrum Hulpmiddelen", LCH: https://www.rijksoverheid.nl/onderwerpen/coronavirus-covid-19/zorg/beschermingsmiddelen and https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport/organisatie/organogram/landelijk-consortium-hulpmiddelen

[90] https://ggdghor.nl/home/over-ggd-ghor-nederland/

[91] https://www.lnaz.nl/acute-zorg/taken-roaz Members of the network: Hospital Boards; Board of the Safety Region, GGD/GHOR, GGZ (Mental Health Organizations), General Practitioners, Obstetrics and Gynecology.

The Refugee Company was an established organization before it got involved in the COVID-19 crisis response ecosystem through the production of face masks.[92] It has been part of the Dutch organizational ecosystem supporting refugees since the "refugee crisis" of 2015-2017.[93] Its origins are intrinsically related to the organizational dynamics that the crisis brought about (Refugee Company Annual Report 2016-2018) when local and national governments, as well as established response organizations could not deal with the demands from the high numbers of refugees arriving in the Netherlands (Boersma, Kraiukhina, Larruina, Lehota, & Nury, 2019; Larruina, Boersma, & Ponzoni, 2019) and **bottom up initiatives** emerged. Since then this initiative has evolved and adapted its mission to assist asylum seekers living in asylum seeker centeres (AZC) and status holders in their socio-economic inclusion: "We primarily operate from a social mission (impact first). Our main objective is to enable refugees to take an important step towards social and economic independence. Through the activities of our commercial subsidiaries, we gain income that covers part of our expenses." (Refugee Company).

In its current form, this social enterprise is a foundation that until March 2020, had two subsidiaries: the "Markerspace" (clothing design and production) and "Beautiful Mess" (restaurants in three different locations). Since March, the Refugee Company's activities have been severely impacted by the COVID-19 pandemic, as the consequences of the measures that were put in place in the Netherlands (physical distancing, working from home, etc.) meant that it – like so many other enterprises – had to develop online activities or temporarily cancel their operations. In February, however, with the impending outbreak of COVID-19 in the Netherlands, the management team considered the possibility of mask production. To **respond to a crisis situation** and to **see business opportunities** at the same time is at the heart of the Refugee Company. The following fragment from their blog[94] shows some steps before the formation of the factory and the maneuvering of their social capital in order to get it running:

> I am thinking along with Naz Kawan (co-initiator), who, along with the atelier team, develops face mask samples. Different models are being tried out, and we are looking into whether they can be certified in conjunction with Waag.[95] This is not an easy task. We have quickly come to realize that the necessary raw materials are not easy to obtain. ... My sister is a pilot for KLM and flies the 747 airplanes. She is coincidentally flying to Shanghai today to pick up respiratory equipment for the Ministry. I will call her to ask if she can bring back a roll of cloth. I will explain to her what it is for. I will also call Jaap Stelwagen[96] as he is always willing to think along. He lived in China for 5 years and

[92] https://www.mondmaskerfabriek.nl and https://source2gather.com/solution/mouthmask-factory/ and https://dekleurvangeld.nl/mondmaskerfabriek-meer-mondkapjes-meer-kansen-nieuwkomers/

[93] Refugee Company. (2016) Annual Report; Refugee Company. (2018) Annual Report; Refugee Company. (2020) https://abeautifulmess.nl/en/about-en/ visited; Mondmaskerfabriek (2020) https://mondmaskerfabriek.nl/.

[94] https://www.mondmaskerfabriek.nl/updates/klm-last-minute/

[95] A knowledge institute in Amsterdam that operates at the intersection of science, technology and the arts, focusing on technology as an instrument of social change, and guided by the values of fairness, openness and inclusivity: https://waag.org/en

[96] Independent entrepreneur who co-founded the Mondmaskersfabriek. He has been very useful because of his network in China where he lived for about 5 years.

together with his wife Ling he spent some hours calling around and close to Shanghai, they found a factory that can supply 25 kilos non-woven melt-blown, which is good for 25,000 caps.[97]

***Picture 5**: Machines being uploaded in the KLM cargo flight from Shanghai*[98]

One month after the beginning of the lockdown in the Netherlands, the Refugee Company announced the beginning of operations in a mask factory in the Dutch city of Arnhem. The idea was to start with a factory that produced certified surgical masks locally and was operated mainly by status holders living in that municipality. The company started to **negotiate** with the Dutch Government about financial support and the purchase and distribution of face masks. Thus, since the end of April 2020, the Refugee Company has been running a third subsidiary, "de Mondmaskerfabriek" (MMF).

The press release shared with 250 media outlets read: "Status holders are working hard to reduce the face mask shortage in the Netherlands" (translated from Dutch). De Mondmaskerfabriek – an initiative of the Refugee Company's **social entrepreneurs** to create disruptive innovation through the production of face masks – was supported by among others the Philips Foundation[99] (financial support) and Qredits[100] (micro financing; financial support). The Ministry of Economic Affairs and Climate Policy and the Ministry of Health, Welfare and Sport also played a huge role in providing financial support and in creating the market/distribution: the LCH, responsible for **coordinating** the distribution of PPE in the Netherlands, guaranteed a purchase of 1 million face masks a week. Another important governmental partner was the Municipality of Arnhem,[101] with whom the Refugee Company collaborated in creating jobs for refugees/status holders (in combination with language lessons).

[97] Translated from Dutch (open source information, derived from the blog) to English by Yusra Abdullahi.
[98] Captions from the video blog, with authorization from KLM's Communication and Marketing department.
[99] https://www.philips-foundation.com/a-w/articles/mouth-mask-factory.html
[100] https://qredits.nl/
[101] https://www.omroepgelderland.nl/nieuws/2447006/100-000-mondkapjes-per-dag-Arnhemse-fabriek-kan-los

***Picture 6**: The Refugee Company's face masks production 1*[102]

Because setting up a production line for the fabrication of face masks was complicated and outside the scope and expertise of the Refugee Company, Qing Engineering and Consultancy[103] started to **collaborate**, offering some of their engineers to give advice on how to set up and operate the production line. The Refugee Company built the production line from scratch. With help from the company founder's sister who works as a KLM pilot, they managed to import the production machines from China, as KLM offered space in their airlines. To get the quality of their masks approved, the Refugee Company sent batches of the masks to accreditation institutes in Austria and Spain; these were not consortium members, but they were crucial for quality control.

At the beginning of its operation, de Mondmaskerfabriek employed 20 status holders living within the municipality of Arnhem, enabling the factory to expand its working hours and production. To be considered for this position, status holders had to have completed their Dutch residence exam or be in the later stages of preparation. By creating and running de Mondmaskerfabriek, this social initiative brought together the production of certified masks and the opportunity for the recruitment of status holders, who not only gain experience but also learn other important skills for their socio-economic inclusion in Dutch society. This is clearly represented in the following statements from press releases:

> We are proud that we can contribute to a social enterprise that can make a difference in these times. Our form of social credit is a perfect fit for social initiatives such as these, which also create work experience places for refugees in the Netherlands. (André Dolsma, commercial director of Qredits)

> It is great that there will be a factory in Arnhem where face masks are produced. […] Thanks to the good collaboration between our municipality and Refugee Company, they were able to switch quickly and they managed to achieve this in a very short time. It is great that in this way inhabitants of Arnhem with a refugee background can contribute to fighting the corona crisis. (secondary source) Cathelijne Bouwkamp, Alderman for the Municipality of Arnhem

[102] Pictures 6, 7 and 8 are taken with permission in the Facemask factory.
[103] https://www.qing.nl/

Picture 7: *The Refugee Company's face masks production 2*

Picture 8*: The Refugee Company's face masks production 3*

2.4.3 Moving beyond formal authorities - bottom-up initiatives in neighborhoods

Living or Field Labs are physical arenas that bring different societal actors together and adapt "a collaborative approach, in which different stakeholders have space to experiment, co-create and test innovation in real-life environments defined by their institutional and geographical boundaries." (Schliwa, & McCormick, 2016: 174; Majoor, Morel, Straathof, Suurenbroek, & Van Winden, 2017). The main characteristics of Living or Field Labs are (Leminen, Westerlund, & Nyström, 2012; Veeckman, Schuurman, Leminen, & Westerlund, 2013; Voytenko, McCormick, Evans, & Schliwa, 2016):

- **Co-creation** is central. Field Labs are set up as platforms where all relevant parties come together to jointly create relevant research questions and to create understanding. The creation of knowledge in a Field Lab can be seen as a form of knowledge development in which researchers from different scientific fields work together with social stakeholders. In addition, knowledge creation is aimed at jointly shaping new directions for solutions.
- Field Labs take an **experimental, learning approach** in a particular environment. This means, in a Field Lab, people look at what could work in a specific context, start to act on it and define next steps. In this way, they create opportunities to tackle contradictions and dilemmas in a pragmatic, interactive way.
- Such labs have to include both **local authorities and societal stakeholders**. Since Field Labs are organized in a concrete local context, governments operating in this environment are often closely involved with the Field Lab. This offers opportunities to explore the new relationships between the roles of (local) authorities, disaster relief organizations and citizens' initiatives (traditional and non-traditional crisis partners) - within the Field Lab.

2.4.3.1 Providing free meals by volunteers - the Amsterdam COVID-19 Living Lab[104]

In March, during the midst of the COVID-19 crisis, "Samen Vooruit", a local initiative in Amsterdam East (about 23 thousand inhabitants), decided to set up crowdfunding actions to provide free meals to the most vulnerable in their neighborhood - people who are living isolated and who couldn't easily rely on their personal networks (i.e. people with low social capital).[105] Volunteers from local charity and citizens' networks and foundations, including Archipel, Dappere Dames, Life & Style, Assadaaka, Civic, Buurthulp Oost, MOC55+ and the Repair Café were involved in preparing and distributing the free meals. The meals were prepared by chefs from local restaurants and by volunteers of "neighborhood kitchens". Ingredients were provided by catering supplier Haymana, supermarket Marqt and De Regenboog Groep. The youth hostel, Stayokay Oost, made its kitchen and cooling capacity available. The coordination, organization, communication and a crowdfunding campaign all was done by local volunteers.

In collaboration with "Samen Vooruit" we set up digital sessions of what we called the Corona Living Lab in May and July, during which members of the community of active residents and entrepreneurs addressed social governance contradictions and dilemmas related to the needs of the most vulnerable in the neighborhood.

[104] Co-authored by Rinske Berg and with contributions by: Petra Ardai, Firoez Azarhoosh, Stella de Kort, Joris Rijbroek and Anne-Josine Scheepstal.
[105] https://samenvooruit.amsterdam/maaltijden/

Picture 9: Samen Vooruit Amsterdam initiative free meals during the COVID-19 crisis.[106]

Collaboration between emergent initiatives and established organizations and (governmental) institutes

The central questions we raised during an (online) meeting of the Amsterdam COVID-19 Living Lab was how this initiative related to other initiatives that **emerged** in the neighborhood during the COVID-19 crisis, how it related to existing, established institutions (e.g., the local Food Bank).[107] and how links could be found with initiatives by the formal, municipal authorities. In short, the living lab meeting demarcated a local theme but one that was recognized in other neighborhoods across the city and beyond. In addition, the living lab explored whether follow-up meetings could be organized to collectively discover what the "new normal" – that is, the "1.5 meter society" – would mean for the people living in the neighborhood.

Picture 10: *Online meeting of the COVID-19 Living Lab Amsterdam. Picture taken with participants' permission.*

During the digital meeting, the impact of the COVID-19 crisis on the neighborhood was mapped out together with residents, volunteers and professionals from Amsterdam East. Part of the discussion was related to the question of how residents and companies were reacting. The role of traditional,

[106] https://samenvooruit.amsterdam/maaltijden/
[107] https://amsterdam.voedselbank.org/english/

established crisis organizations (i.e., fire brigade, police, healthcare institutions and the municipality) was discussed in relation to the **emergent, local initiatives**. The conclusion was that the local, emergent networks in particular had been able to reach the most vulnerable, isolated people in the neighborhood. And because of the networks' local ties, they had been able to respond to the needs that remained hidden for the traditional crisis partners.

For example, during the crisis, the need for providing meals to vulnerable residents emerged as one of the biggest concerns at the local level. Samen Vooruit worked closely with local stakeholders to respond to this urgent need, taking **collective ownership** of the response. At the same time, however, the local initiatives struggled to tie their actions to those of the formal authorities. During the living lab discussion, it emerged that these parties would therefore like to see a bigger role for the municipality – not just financially (it provided a subsidy of €5000 for meals[108]) but also organizationally. They stated that the municipality's role should lie in **the coordination** of the meal provisioning and distribution – and then, in making policies to make these and similar initiatives more sustainable.

Making sense of vulnerability

In addition, a discussion emerged on the definition of "vulnerable people" who relied on the meals. This was connected to the questions: Did the people in need of help only become visible during the crisis, and if so, why were they so directly affected by the crisis? Why have they been under the radar for so long? Are these vulnerable people in need of other support as well? In other words, who exactly are the needy, and is it possible that they will be identified? There are many different organizations active in Amsterdam East, all working on complex social-welfare issues in the neighborhood. Often they have to deal with multidimensional problems that cannot be solved by one organization or institution alone. This is why collaboration, sharing information and coordination is needed and, indeed, why **societal resilience** is key. However, the meeting showed that organizations still (too) often work in silos and that they are not always aware of each other's protocols, procedures and working methods. Questions raised in this regard were: Who is the contact person/liaison in the various organizations? Who decides who needs what and how long help is needed?

Virtually all organizations and informal networks active in the neighborhood had been largely mapped (before the COVID-19 crisis), but assessments and interventions regarding coordination and sharing information have not yet been streamlined. In other words, there is a need for a coordination team or unit that can keep an overview of the activities and facilitate the **collaboration between formal and informal parties**. The members of the Municipality of Amsterdam who participated in the living lab meeting suggested taking up these points for further action at the local district level and dedicating that task to a municipal department at a later stage. For a quick, ad-hoc solution, the City of Amsterdam also came up with the idea of a flexible budget to support the most vulnerable and isolated people in the neighborhood as they are – like in other places in the world, as a study by the Imperial College London indicated (Winskill, et al., 2020) – at significantly greater risk from COVID-19.

[108] In addition, the initiative received support from the charity foundation Oranje Fonds (€ 9000), the Amsterdam East Fund (€ 3000), a local church De Elthetokerk (€ 563) and the Maagdenhuis (€ 500). About € 16,000 was raised through a crowdfunding campaign.

Trusting relationships

Finally, a point of discussion was the sustainability of the spontaneous initiatives that emerged in the neighborhood in response to the COVID-19 crisis and how the various stakeholders could develop stable **relationships** based on **trust**. Participants noticed that trust did indeed increase at times when the various stakeholders started to work together. Still, they mentioned (the lack of) trust as a major concern. Various spontaneous initiatives and collaborations were established during the crisis in a relatively short time, but the question is **how to maintain those initiatives**. Governmental funding and coordination capacity was raised as a condition to support the spontaneous initiatives and to make them sustainable. Such support could come from informal networks or via the municipality. The discussion showed that there are concerns from both formal and informal bodies about how to make these initiatives sustainable and prevent them from disappearing from the scene.

Main lessons learned

- The COVID-19 crisis made both societal resilience and local patterns of inclusion and exclusion in relation to healthcare and social work visible.
- Local networks are tokens of societal resilience due to the action-oriented nature of volunteers' efforts. These networks are goal oriented but struggle to maintain themselves because they are based on ad-hoc structures and actions.
- Formal, institutionalized healthcare/social work organizations emphasized the formal rules and procedures but showed a willingness to collaborate with local, informal (active, latent and emerging) networks. However, organizational resilience, that is, the ability to adapt to the new situation, was difficult.
- The (local) government applauded the citizens' initiatives and provided some financial support, yet its main focus was legitimation, transparency and accountability ("Who is responsible for what and when?"). Thus, it was hesitant to pick up the coordinating role that was asked for.
- Collaboration between the various stakeholders, traditional and non-traditional crisis organizations, private initiatives and citizens, was based on informal contacts that arose on the basis of mutual trust.

2.4.3.2 Collaboration between the VIII Municipality of Rome and Casetta Rossa[109]

"We have adopted a new decision. We are aware of how difficult it is to change our habits, I understand it too. They are habits that reasonably in the light of our recommendations may be changed over time, but there is no time" - Prime Minister of Italy, Giuseppe Conte, in the press conference of March 9, 2020 which effectively closes the entire country until May 4, 2020.[110]

The first actions by the government to respond to the COVID-19 crisis in Italy were to increase the resources of the The Protezione Civile (**Civil Protection**) and to appoint an Extraordinary Commissioner, Domenico Arcuri, responsible for the implementation and coordination of the

[109] Contribution by Agnese Rollo, Associazione Della Croce Rossa, Italiana. HERoS Partner.
[110] DPCM of 9 March 2020 http://www.governo.it/it/coronavirus-misure-del-governo

necessary measures for the containment of the virus.[111] As situations in the hospitals of the northern regions became very critical, due to the increasing number of patients and the capacity problems, the Government created a task force of about 300 doctors, who participated on a voluntary basis. Premier Giuseppe Conte on his Facebook page: "It is one of the responses put in place to respond to the cry of alarm launched by the hospitals of the regions and provinces most affected, where doctors, nurses and volunteers are working tirelessly in difficult conditions to assist the sick."[112]

The lockdown announced on 9 March by the prime minister Conte, led to the closure of all non-essential or strategic production activities, so only supermarkets and pharmacies and essential services remained open. Since the start of **the lockdown**, there have been differences between the various Italian regions, for example on the use of face masks as there has been no uniform or coordinated crisis management. In practice it means that each regional president takes his or her own measures. In Lombardy, the region that was hit very severely by the virus, the government made the most drastic choice "Whenever one goes out of the house, all the precautionary measures allowed and adequate to protect oneself and others from contagion must be taken, using the mask or, alternatively, any other garment to cover of nose and mouth, together with a timely disinfection of the hands. In any external social activity, the interpersonal safety distance of at least one meter must be maintained."

As soon as the number of cases started to decline early May, the Government initiated "Phase 2" of its crisis management protocol, which determines the gradual resumption of economic, productive and social activities and regulation of travel.[113] "Phase 3" was announced 15 June, meaning a moderate restart of the necessary precautions. Still, the premier Conte sent out a warning: "Be careful: the only effective measures against the virus are physical distancing and use, where necessary, of masks. Abandoning these precautions would be a serious trifle".[114]

In the most critical moments of the crisis, in particular in the months February and March, **solidarity initiatives** started to multiply. Donations to hospitals and research institutes, but also to national and local associations, charities, Civil Protection and the Red Cross, all committed to assisting the most vulnerable. This case study is an example of actions by **volunteers and their networks** to assist the most vulnerable, in the city of Rome.

Services created to support vulnerable people in need during the lockdown

"I still remember one of the first links on the web on Radio Anticorpi in February in which we interview this doctor from Codogno, in Lombardy, who for the first time gave us a serious picture of what was happening, because there was still no awareness of what we would soon have to face and instead that interview opened our eyes." - Luciano Ummarino, President of the association *Casetta Rossa*, located in the VIII Municipality of Rome, about the outbreak in Lombardy in the northern regions of Italy.

[111] Council of Ministers n. 36 of 11 March 2020: http://www.governo.it/node/14289 and Appointment in the DPCM of 18 March 2020: http://www.governo.it/it/dipartimenti/commissario-straordinario-lemergenza-covid-19/cscovid19-normativa/14435

[112] https://www.facebook.com/GiuseppeConte64/posts/875132996302000

[113] Decree-law of May 16, 2020: http://www.salute.gov.it/portale/nuovocoronavirus/dettaglioNotizieNuovoCoronavirus.jsp?lingua=italiano&menu=notizie&p=dalministero&id=4763

[114] Press conference of 3 June 2020 http://www.governo.it/node/14673

Everything changed in Italy with the DPCM (Decreto del presidente del consiglio; Decree of the Prime Minister) of March 9, 2020 and it is exactly in those days that "we wondered about what support could be introduced for the most fragile people", says the councilor for social policies, Alessandra Aluigi of the VIII Municipality of Rome. The VIII Municipality houses about 140 thousand inhabitants, many of them elderly; precisely that segment of the population most to be protected. The compelling difficulty to face, for the most fragile people and the elderly, was to be able to go shopping in supermarkets and go to the pharmacy. In a few days *Municipio Solidale*[115] was launched, a **service platform** for help and support to citizens to better deal with the health emergency.

***Picture 11**: The Municipio Solidale service platform.*

The *Casetta Rossa*, a **self-managed social and cultural center** established in 2002, decided to close all the catering and commercial activities already before the lock down, out of a sense of responsibility. It has always had services related to solidarity and mutualism, such as Baobab Experience, or the preparation of hot meals for about a hundred refugees in a reception center. The activists of the center, and especially the cooks, however, after a few days are unable to sit still and begin to 'propose to do something to stay within the pandemic'. First, to continue to **prepare hot meals** for refugees and all those who need them. Then, deliver food to the most **vulnerable** of the area. The idea was launched through a Facebook post and immediately went viral. There is a desire to participate in full **compliance with the rules**. At the same time, the administration of VIII Municipality starts *Municipio Solidale* and involves all the local realities, including *Casetta Rossa*. A dense **network is created** made up of intermediate social bodies on which the Municipality relies, as it lacks funds for emergencies of this type, and which it coordinates to face the pandemic with as many synergies as possible. Therefore, an interesting mechanism is created to bridge the **institutional** and widespread **social cooperation**.

Creating guidelines for the volunteers

The "*Municipio Solidale"* in this very early phase mainly made home deliveries of food and medicines, immediately activating a telephone number, donated by a telephone company. In addition, a dedicated website was set up which over time became a **platform** providing the link between the services and the demands. Initially, the people who answered the phone were **volunteers**, but later on councilors joined the initiative. The Municipality started to formulate **formalized procedures** to be

[115] https://www.municipio-solidale.it/

followed by the volunteers, to comply with the rules and regulations of the lock down, for example, when they went to the people's homes to take the shopping list and money and then bring everything back. Measures were taken to respect the health and hygiene protection rules in order to avoid the transmission of the virus. The procedure worked as follows: the person phoned, answered by a volunteer who took the personal details of the person, a telephone number and their requests, which information then was transmitted to a coordination of volunteers who shared the requests.

The requests came from around 150 families. The challenge of the Municipality was to allow volunteers to move around the area under the **strict lockdown measures implemented in Italy**. The VIII Municipality decided to authorize the volunteers of all the associations belonging to the platform with a formal letter to show to the police during the various roadside checks. *Casetta Rossa*'s president Ummarino then sent the letter of authorization to his 136 volunteers. At the beginning there was a lot of confusion on this issue, but in the FAQ[116] to the #IoRestoaCasa Decree, issued by the Government on March 15, 2020, it was clarified that all volunteers indeed were allowed to move around. The guidelines had two different types of information: on the one hand there was information on the characteristics of the **health emergency**, such as the various measures that gradually followed one another, such as state, regional, municipal, and on the other there were the more strictly local information regarding the **open commercial businesses** and which of these did home deliveries and obviously pharmacies.

Picture 12 *Volunteer preparing food for vulnerable people in the neighborhood.*

The home delivery grew exponentially in the first weeks after the start, with an average of 40/50 calls per day to the Municipio Solidale switchboard. The request is made by the elderly and people with pathologies. “So, people who were afraid to leave the house or in some cases who had mobility problems. We arrived at them by advertising the home shopping service not only on social networks, but also by attaching posters, translated into all languages, in the doors of the buildings, and conveying

[116] http://www.governo.it/it/faq-iorestoacasa

the information through the presidents of the elderly centers who called all their members, we are talking about thousands of people. Also through local associations and condominium administrators", Aluigi explained in an interview.

Coping with the complexity

After a few weeks in which the volunteers delivered food and medicine to vulnerable people, concerns were raised on TV and on social networks about the spread of the virus in Europe and the rest of the world. *Municipio Solidale* started to intervene by offering a **psychological support service**. Aluigi clarified: "locking people inside the house would probably also have created a psychological difficulty, certainly greater in those very delicate situations of family conflict, but also in those family contexts where there were not necessarily pre-existing problems." The psychological help was accompanied by another request: those people who would not have taken their salary, those on layoffs, and those without a contractually regular job.

Due to the complexity of the situation and the increase of phone calls per day the volunteers had a hard time to answer the **increasingly complex questions**. VIII Municipality therefore decided to employ all those operators of the six social cooperatives who have been stopped since the beginning of March because of the lockdown to **assist the persons in need**. Remote assistance services were carried out by trained operators. Furthermore, *Municipio Solidale* also became accessible to deaf people through multimedia communication service managed by professional interpreters. The **switchboard** was stormed with over one hundred calls a day, even from citizens residing in other areas of the city because at that time "it was the only city hall to offer those services in a centralized manner. But we were forced to be able to intervene only within our competent municipality, for various reasons, and to refer them to national voluntary associations", Aluigi indicated during the interview.

Calvino specifies: "daily there were 30 people present here in *Casetta Rossa* preparing and distributing the package" and points out that **users are very heterogeneous** "at the personal level because there were children in families, then elderly couples and many young forty-year-olds. There has not been a more or less affected band. These are very varied stories. There was the family already known because it has always been in need, just as there was also the family that previously lived a history of precariousness but that made it to the end of the month, and instead with the closure of many work activities during the lockdown, she was no longer able to buy food".

Emerging networks for supply and distribution

"At the beginning we were the ones who contacted the **retail outlets**, which are more organized, have adequate space, and are used to initiatives of this type by providing a trolley at the entrance. After that, *Suspended Shopping* was promoted to **involve small businesses** such as bakers and food shops. Obviously they made themselves available to promote the initiative, then the donation was made by customers who left packaged products. In addition, we have also involved the local markets, which are more directly managed by the municipality. As many as 20 commercial businesses have joined it", according to Capone in the interview. At the same time, the initiative faced problems with the storage since the preservation of the food required cold rooms that neither the town hall nor the associations owned, so delivery must be made during the same day. The volunteers got specific training to enable them to execute those tasks, for example, on how to use **personal protective equipment** in particular when the facemasks became mandatory. In addition, *Casetta Rossa* has its own space that allows

packaging and every day 30 volunteers meet at the center for preparation and distribution. *Municipio Solidale* thus gave **support to vulnerable people** from March to June: about 800 families have been helped out corresponding to 2500 people thanks to the help of 30 associations for a total of 350 volunteers.

***Picture 13**: Distribution of food to vulnerable people by volunteers.*

In the meantime, in early April, with the **funds allocated by the Government** for the shopping voucher[117], Rome Administration announced a public notice for the allocation of the contribution for the purchase of foodstuffs in favor of people or families in conditions of economic hardship. In fact, due to a series of **bureaucratic delays**, the payment of the shopping voucher took place only after 45-60 days. The same goes for the rental bonus[118], as coverage of the rent in the three months of emergency. Furthermore, between the end of April and May, Rome Administration sent food parcels to the municipalities, 2000 in all those destined for the VIII Municipality, which, however, were insufficient for the numerous and continuous daily requests.

Societal resilience: supporting schools and cultural events

The *Municipio Solidale* did not think only about the needs of elderly, as in the month of April, *Municipio Solidale Junior* was born, mainly to **guarantee distance learning for all children**. 'Through the support of seven national and international companies present in our town hall and the generosity of citizens, we collected tablets, smartphones and sim cards which, in coordination with the schools, were distributed on loan for use to children who did not have the possibility of doing distance learning for obvious economic problems", reports Aluigi and adds Ummarino" *Municipio Solidale* Junior arrived at them through a group of operators who did online activities for children and it emerged from the schools that those children did not attend more because they had no chance. Some are those who live in caravans, others in homes but without the ability to access the internet. We as Casetta Rossa

[117] https://www.comune.roma.it/web/it/scheda-servizi.page?contentId=BEC560368
[118] https://www.comune.roma.it/romaiutaroma/it/buoni-affitto.page

intervened by purchasing about fifty internet subscriptions for those kids who had the hardware remedied but could not connect. Even now we continue to pay the monthly subscription".

In addition, the social network started to initiate cultural events, like the *Radio Anticorpi* Facebook page. Ummarino says “Practically before the lock down here in *Casetta Rossa*, a meeting was held with the main institutional and non-local realities, aware of the fact that it would soon close everything, in which we tried to build a place that could not than being online, where what was done before could find space for continuity. And so the idea of *Radio Anticorpi* was born”. Calvino adds “*Radio Anticorpi* was not only an active resistance during a difficult moment for everyone, so being everyone in their own home we felt united by something, but it also provided information. There were, in fact, the pills of scientific explanations on how the virus spread, how the pandemic was to be dealt with, what was true and what were the fake news circulating on the web.”

Looking for continuation and adjusting to ‘the new normal’

After the months of severe lockdown measures the Italian government decided to lift some of the lockdown measures in what is known as ‘phase 3’ in June. People resume most of their activities in compliance with the 1.5 meters distance rule and the use of facemask in indoor premises. “The emotional wave had subsided a little and the funds to help those who were still in difficulty had ended with the consequence that we were no longer able to help families. The idea, then, was to keep the attention high and to do crowdfunding”, Calvino continued, for example, initiatives such as that of the **solidarity takeaway** have been made, networking catering activities from the whole area, which have allowed to collect substantial figures. And she ends by saying that “the proximity and active support there was in the three months of lockdown, then it went down a bit. Our will was to remind the citizens that the emergency was still there.”

Main lessons learned and recommendations

- Support local initiatives by establishing a central coordination body within the various municipalities or districts that can develop clear guidelines.
- Expand (the capacity of) emergency professionals to work with local volunteers, in order to increase the effectiveness and efficiency of all interventions.
- Create municipal spaces such as "emergency places" to house material and the coordination operations.
- Purchase specific emergency equipment and means to be made available to the municipalities in case of emergencies.
- Create a structured network of associations, with the involvement of national and local realities, so that at the time of an emergency there is a division of roles and actions.
- Support crowdfunding tools, as a possible fundraising channel to deal with the crisis.

3 Conclusion

"I think over time, after the crisis, we really have to go in depth: what other lessons we've learned, what do we have to change?" - Ursula von der Leyen, President of the European Commission, in an interview with FRANCE 24; 4 May 2020.

This report (Deliverable 1.1. of HERoS) conceptualizes the COVID-19 pandemic as a **slow burning crisis** in contrast to a sudden onset crisis. The dynamic nature of the disease, the high degree of uncertainty involved in managing it and the (intended and unintended) consequences of the measures taken to control it, will likely have a transformative and long-lasting impact on society. The COVID-19 crisis is also conceptualized as a **wicked problem;** there are many unknown unknowns about the disease itself, policymakers trying to solve the problem often face conflicting priorities, while the efforts to mitigate the impact of the crisis have knock-on-effects and give rise to myriad secondary crises. The COVID-19 pandemic goes well beyond health and affects virtually all aspects of society. It represents a highly complex, unpredictable, unprecedented and challenging societal problem as there is no clear model of how best to deal with it. Paradoxically, the better we manage to contain the COVID-19 pandemic, the less we will learn from it and the more detailed history one provides, the more likely it is that the conditions seem to be unique. Yet, reflecting on the crisis governance analysis outlined in this report, we can draw valuable lessons.

The COVID-19 crisis necessitates a comprehensive mitigation strategy, a **whole-of-society governance** approach. This approach considers individuals, communities, heterogeneous organizations across diverse sectors, and societal institutions coming together and interacting as part of the same decision-making and coordination system. Our rapid review identifies three overlapping layers of governance that synthesize an integrative COVID-19 Crisis Governance Framework (Table 5).

In this final part of our report we present this analytical governance framework, which stems from a whole-of-society approach and explains how coordination, a shared understanding and collective action emerge in response to tackling a profound crisis. The three overlapping governance layers comprise integrating mechanisms for accomplishing **collective decision-making** and **coordination across boundaries**. The framework emphasizes that there are different means by which individuals and organizations collectively accomplish their interdependent tasks and align their actions. Deliberate planning and hierarchical structures need to be complemented by networks, lateral relations and emergent forms of participatory interaction. Each of these layers and forms of work by collective actors resolves some of the uncertainties created by interdependence. Central to our framework is the idea that actors enacting different mechanisms can create the integrating conditions for collective sensemaking and coordination, drawing from a wide variety of options to achieve them.

	Whole-of-Society COVID-19 Crisis Governance Framework		
Dimensions	**States and Institutions**	**Networks of Organizations**	**Resilience and Participation**
Action alignment processes	State authorities and formal institutional actors should consider boundary work as an integral part of their policy response to crises. To convey knowledge and mobilize action **across boundaries** (jurisdictional, sectoral, organizational).	Different stakeholders guided by their mutual interdependencies need to work together in mitigating the impact of COVID-19. Contingent to the existing or emerging networks, **coordination** can be facilitated by formal institutions **engineering relationships**, or by self-organizing groups and organizations interacting **through emergent processes**.	Citizens and communities in crisis situations mobilized by self-interest and (sometimes) altruistic motives take up the role of active participants rather than being passive observers. Some were hit by COVID-19 more than others, but individuals and communities can exhibit **resilience**, having the capacity to recover from the stress and even show unexpected but effective response strategies.
Primary focus	**Formal decision-making** by authorities should be **guided by principles** of transparency, accountability, participation and integrity as well as the willingness to invest in capacity building and capacity sharing, and the recognition of societal resilience (**TAPIC-R**). Become aware and acknowledge issues and threats along the above dimensions in decision structures and openly endorse them.	Due to the many stakeholders involved in the response to the crisis and the mitigation of its effects (and eventually the recovery) it is key to invest in **orchestration** and strategic discussions that can resolve contradictions and dilemmas and **create linkages** among social actors. Doing so creates a sense of collective purpose in the context of a threatening situation.	The complexity of the COVID-19 crisis justifies (and calls for) **collective ownership** so that all members of the society, organizational units or communities can contribute to the solution in ways that all can benefit. This **enhances creativity and commitment** in the provided response.
Form of influence	Formal, **bureaucratic** processes, plans, rules and transparent protocols should facilitate consistent and	The whole-of-society impact of the crisis requires a **decentralized** and **open-ended** approach by which the activities of groups and	The participatory dimension of the governance approach rests on the quality and recognition of **emergent**, bottom-up and

	coherent crisis response policies, strategies and operations. Enhancing accountability and delineating clear responsibilities among interacting actors.	organizations, in particular those regarding planning, decision-making and implementation, are also distributed and delegated away from a central authority. Enhancing responsiveness to deal with contextual eventualities and unplanned contingencies. Facilitating **routine interactions** among diverse actors is essential.	spontaneous **initiatives** of volunteers and citizen groups and the way they can be supported and be sustained.
Communi-cation	Adequate crisis communication by formal authorities should be coherent, open and based on fit-for-purpose **evidence** (to counter misinformation) to gain the public's trust. Framing the situation, sensing monitoring and updating the public deserve more attention.	To cope with the complexity of responding organizations and to connect with meaningful initiatives, **collaboration** in terms of workflows, arrangements and information is needed. Communication is not a matter of top-down information sharing, but should be based on feedback, and multi-lateral interactions among actors to reach a **mutual understanding** and a **sense of common purpose**.	The whole-of society approach **includes** collective ownership of the problems at hand, based on **reciprocity.** Alternative views should be allowed to challenge dominant views, and empowered participation of local (citizen) networks in the crisis response and recovery processes must be built upon.

Table 5: *The layered, 'whole-of-society' COVID-19 Crisis Governance Framework*

How the Framework's governance layers and mechanisms play out in the COVID-19 crisis across boundaries and in particular contexts is an empirical question (to be followed up in the upcoming Deliverables of the HERoS project).

By applying the Framework to crisis situations our aim is to overcome and transcend the often encountered dichotomies: top down versus bottom up, formal versus informal, public versus private, planned versus emergent, official versus participatory. Our conceptualization of the crisis and the responses that emerge are the outcome of instrumental, deliberate yet **bounded rationality** on the part of the actors involved. We also reflect on crucial conditions that shape interaction and coordination of action among interdependent actors. As such, the overlapping layers in the framework represent the intrinsic **complexity of governance** referring to the idea that it is hard to predict how a governance arrangement (or system) put in place or activated will behave in practice and what will be the consequences.

Understanding the context is key here: what does the COVID-19 crisis response landscape (in a geographical space or over time) look like in various contexts and cases? Every additional layer of authority and stakeholder involvement in crises brings with it valid concerns relating to collective and individual **dilemmas about the impact that specific actions might have**. Joint production of decisions are based on interdependent choices, separate but potentially overlapping objectives. Strategic decision-making is, again, based on partly overlapping, partly conflicting interests.

Yet, there are ultimate objectives to be served by governance arrangements in crisis situations. At its heart, we perceive governance concerning **collective decision-making** and **coordination** among interacting actors, **co-constructing a shared purpose** and aligning actions to **co-create a collective and effective response** to deal with the **wicked problem**. To successfully accomplish collective decision-making and coordination, interacting actors (individuals, communities, organizations) need to be aware of and understand how their role, expertise, actions and work fit with that of others in the societal context they inhabit. On closer examination, reflecting on selective published literature, theoretical constructs from organization science, public administration and political science, and feedback from operational and policy-making experts across three country case studies (Netherlands, Finland and Italy) we also observed that there appears to be specific types of requirements that condition an effective whole-of-society governance response.

We highlight the paramount importance of **transparency**, **accountability**, **predictability** and the need to create a **shared understanding** among interdependent and interacting actors. Transparency addresses the questions of who decides, who implements and on what basis (what are the sources of evidence, what is the raw/primary information, and are these publicly available?). Accountability addresses the question of who is responsible for specific actions and to what extent. Predictability addresses the questions of what constitutes the next steps of actions, what can we reasonably anticipate as a consequence. Shared understanding addresses the question of how actions come together in a coherent and consistent whole, what is the overarching shared purpose and objectives. Underlying all these requirements, acting as **social glue**, is the crucial element of **mutual trust** among the interdependent actors. Transparency, accountability, predictability and shared understanding create trust and trust enables these requirements to be accomplished, thus creating a **virtuous mutually reinforcing cycle**. Instead, failure to meet these requirements leads to a vicious cycle of mistrust, continuously raising boundaries to effective and meaningful interaction among societal actors.

There are different means or mechanisms to meet the above requirements and the best combination of available options depends on the contingencies within specific contexts. In responding to the COVID-19 crisis, there is no best, or one-size fits all solution, nor is there a magic bullet or miraculous secret recipe. Yet, various mechanisms are available to policy makers and broader societal actors that are willing to intervene. Such mechanisms can be activated via **deliberate action** and by **creating enabling conditions** that will allow targeted, emergent approaches to flourish. In some contexts formalized decision structures via established institutional arrangements and the deliberate design of plans, protocols and clear rules might prove adequate, though when we deal with wicked problems a combination of approaches as we outline in the three overlapping layers of crisis governance response is necessary. These mechanisms act in various ways to meet the requirements for **effective mobilization of societal actors** to achieve whole-of-society response. How exactly they work on the ground, how collective decision-making and how coordination happens in the real world setting of the

COVID-19 context, are empirical questions, which are being addressed in the ongoing empirical investigation of the HERoS research project.

While being cautious not to provide overgeneralized or oversimplified implications stemming from the Framework, some key messages can be clearly communicated:

- The various stakeholders involved in formal and informal decision-making need to ***collectively make sense*** and through interaction co-create a ***shared understanding*** of the crisis situation. A broad and diverse group of interacting stakeholders helps avoid tunnel vision, assists breaking down decision-making silos, enhances collective ownership of the societal response and allows creative solutions to emerge.

- A whole-of-society approach is founded on **trusting relationships,** which are central in enabling a virtuous reinforcing cycle of transparent, accountable, predictable and widely understood and accepted collective response to emergencies.

- It is important to strike **a balance** between the continuation of the society on the one hand and the control and reduction of risk on the other. In a slow burning crisis like COVID-19, fluctuation is to be expected and therefore the balance may need to strike different equilibria from time to time.

Furthermore, all relevant stakeholders in the Crisis Governance Framework need (to invest in) **capabilities**: (1) reflexivity, the capability to appreciate and deal with unstructured problems and multiple realities, (2) responsiveness, the capability to respond legitimately to unlimited demands and concerns, (3) resilience, the capability to flexibly adapt one's course in response to frequent and uncertain dynamics without losing identity and (4) revitalization, the capability to overcome stagnations, reanimate policy processes and have the willingness to (un)learn.

Capacity building for future emergencies means investing in people, **building capabilities**, **nurturing networks** and **trustful relationships** among a diverse and inclusive community of interacting and interdependent societal actors. Possible illustrative examples of possible initiatives or interventions are briefly outlined here to act mainly as food for thought and to stimulate reflection rather than being a definite toolkit:

- Map existing and new (nodes of) information about crisis-related issues, and be transparent by making the information on which key decisions are based publicly available.
- Set up coordination mechanisms for heterogeneous stakeholders in the response (including spontaneous volunteers) to facilitate and steer their actions.
- Use the local networks to protect and support those with low social capital and prevent them from becoming (more) isolated and vulnerable.
- Recognize the various (potentially conflicting) interests of the institutions, organizations and networks and create a common interest that can lay the foundation for collaboration, shared understanding and trusted interaction.

For the long run:

- Create communities of learners, and - based on new information - invest in new (sustainable and resilient) practices.
- Allow for democratization and deliberation (creating shared ownership) in the decision-making processes.
- Reform the institutional landscape to allow cross border and cross boundary collaboration in crises.
- Recognize crisis complexity and multiple hazards and invest in risk reduction and resilience.

Finally we outline some broad potential implications and topics recommended as food for thought for selected diverse audiences.

Scientists

Topics: invest in collaborative research agendas including COVID-19 health care research, behavioral and governance studies and crisis management, i.e. in multidisciplinary research. Recognize the value of fit-for-purpose science and practice based evidence (science pragmatism) during the different phases of the slow burning crisis. The impact of COVID-19 and the measures taken have an impact on virtually all aspects of society and therefore requires a whole-of-society, multiple hazards research approach (including disaster risk reduction), and an in-depth understanding of societal resilience (including processes of adaptation and transformation).

Professionals and practitioners

Topics: take both the intended and unintended consequences of measures into account. Recognize the interconnection between policies and operations. Invest in the sensemaking aspect of crisis information management and in the mutual understanding of cross-boundary operations. Involve various expertise in operational practices. Invest in network coordination versus relying on hierarchical control and in collective sensemaking by engaging in dialogue. Adapt the responding organizations and networks according to the various “phases” in the crisis response and invest in scaling down procedures and routines (exit strategy procedures). Recognize the potential of informal, emergent (citizens’) networks in all phases of crisis management. Shift the focus to risk management, risk reduction, prevention, and early warning systems.

Policy makers

Topics: the whole-of-society- crisis requires decentralization of decision-making and an investment in coordination (versus top down and command and control). Allow for local adjustments and participatory networks. Recognize local ownership being part of the governance landscape and be prepared to move beyond the sphere of formal institutions when it comes to decision-making. Invest in effective communication, being open and transparent about the dilemmas and trade-offs concerning the impact of measures on societies and explaining the next steps in the crisis response sequence. The whole-of-society approach is based on trusting relationships and mutual understanding. For the long run, it is crucial to invest in people’s capability building and the quality of formal institutions across sectors, and in health care in particular.

Wider audience

Topics: Appreciate the value of collaborations and synergies between formal and informal response initiatives. While the pandemic is global the consequences are felt locally - building on engaged citizenship, emergent responses and spontaneous volunteering is crucial to cope with the crisis situation. Deliberate action, preparedness and formal planning, local networks and civic society initiatives eventually build societal resilience. Co-creation and co-learning between decision (policy) makers, practitioners and the people is the key-value of a resilient response.

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Annexes

1. Glossary

Accountability: ensures that anybody who acts must account for their actions to appropriate other actors who can reward or punish them.

Boundary work: the knowledge exchange across boundaries of jurisdictions, institutions, sectors, organizations and communities involved in crisis response. Boundaries either reinforce separations between people, organizations or countries or are junctures that enable diverse connections and thus the exchange of knowledge and information.

Bureaucracy: a system of government in which decisions are taken by state officials (civil servants) rather than by elected representatives. The bureaucratic system consists of procedures designed to maintain uniformity and control within an organization.

Capacity: the employment of the necessary expertise to assist policy-makers in avoiding, diagnosing and remedying policy failures and unintended consequences.

Collaborative awareness: the knowledge about the formal structures and informal ways in which organizations do work and achieve their goals to support coordination and the synchronization of work processes.

Common operational picture: a single identical display or representation of relevant information shared by more than one organization or unit.

Collaboration: the process of two or more people, groups or organizations working together to complete a task or achieve a goal.

Collective ownership: the ownership of a problem and means of (knowledge) production by all members of a group or community for the benefit of all its members.

Coordination: the process of (self)organizing people, groups or organizations so that they work together effectively and properly.

Crisis: an unstable condition involving an impending abrupt or significant change that requires urgent attention and action to protect life, assets, property or the environment.

Crisis management: involves the management of preparedness, mitigation response, and continuity or recovery in the event of an incident/disaster. It includes management of the overall program through training, rehearsals and reviews to ensure the preparedness, response and continuity plans stay current and up-to-date.

Decentralization: the process by which the activities of a group/unit or organization, particularly those regarding planning and decision-making, are distributed and delegated away from a central authority.

Decision-making: the process of identifying and choosing between alternative courses of action based on the values, preferences and beliefs of the decision-maker.

Disaster: a situation where widespread human, material, economic or environmental losses have occurred, exceeding the ability of the affected organization, community or society to respond and recover using its own resources.

Disaster subculture: a set of cultural (tangible and intangible) tools to deal with recurrent hazards

Emergent (structures): patterns of action and interaction that are unknown or unplanned prior to social interactions, but that emerge and evolve as a result of unfolding actions.

Governance: processes of decision-making and coordination among institutions and individuals to meet the needs (and interests) of the public within certain areas.

Hazard: a process, phenomenon or human activity that may cause loss of life, injury or other health impacts, property damage, social and economic disruption or environmental degradation.

Integrity: the process of specifying the representation, decision-making and enforcement of governance institutions and clarifying the roles and responsibilities of their members.

Institutional crisis: a period in which the institutional arrangements of a policy sector are confronted by a relatively strong, continuous decline in legitimacy.

Interconnectedness: the quality or condition of being interconnected and the state of having different parts (for example, organizations) connected or related to each other.

Interdependence: the state of being dependent and mutually reliant on one another.

Learning: a mechanism through which new and different forms of knowledge are acquired and integrated, leading to a change in performance.

Mitigation: to lessen the effects of the crisis and the crisis measures.

Multi-level governance: the distribution of power and responsibility across different levels of governance, and among different stakeholders and sectors. It refers to the vertical and horizontal dispersions of authority among local, provincial, national, supra-national and global levels of government, as well as among non-governmental organizations, private actors, civil society and other relevant entities.

Negotiation: the process of strategic discussions that resolves an issue in a way that the involved parties or stakeholders find acceptable.

Network governance: the collaboration between autonomous but interdependent actors/stakeholders that operate within a self-constructed structure or space to address (and possibly solve) complex issues.

Orchestration: an indirect mode of governance that relies on inducements and incentives rather than mandatory controls.

Participation: ensures that people who are affected by a decision can express their views about it in a way that ensures they are at least heard.

Participatory governance: a form of governance in which citizens, and other non-state actors, are empowered to influence and share control in processes of public decision-making that affect their lives.

Policy: the art of governance that refers to a set of guidelines, plans or rules as the basis for decision-making that determines a course of action.

Reciprocity: relation or state in which two people or groups perform mutual or corresponding actions based on the actions of the other.

Resilience: the professional/civic communities' abilities to develop their capacities to prepare for disruptions (risk reduction), recover from shocks and stress, and adapt and grow from the disruptive experience.

Response: actions taken during or immediately after the crisis in order to save lives, reduce health impacts and ensure the needs of those affected by the crisis are met.

Risk: a probability or threat of damage, injury, liability, loss, or any other negative occurrence that is caused by external or internal vulnerabilities.

Risk communication: the exchange of (real-time) information, advice and opinions between policy makers, experts/practitioners and people facing threats to their physical, mental, economic or social well-being.

Routine: a repetitive, recognizable pattern of interdependent actions or interactions, carried out by multiple people, groups or organizations.

Sensemaking: the process of social construction that occurs in times of high uncertainty, when discrepant cues interrupt an individual's ongoing activity. It involves the retrospective development of plausibility that rationalizes what people are doing.

Situational awareness: the perception of elements and events in the environment with respect to time or space, the comprehension of their meaning, and the projection of their future status.

Slow burning crisis: a threat to widely shared societal values or life-sustaining systems that evolves over time and space, is foreshadowed by precursor events, is subject to varying degrees of political and/or societal attention and is impartially or insufficiently addressed by authorities.

Social capital: the value of social networks, bonding similar people, groups or organizations and bridging between diverse people, groups or organizations with norms of reciprocity.

Translation: a process of negotiation during which meanings, claims and interests change and gain ground. It refers to the pursuit of interests and interpretations involving acts of persuasion, power plays and strategic maneuvers.

Transparency: the process of clear decision-making, including an openness about its grounds and about the role of the decision-makers.

Trusting relationship: a sense of confidence in or a reliance on the strength and integrity between people or organizations that are dependent on each other's actions.

Unlearning: the ability to choose alternative ways and approaches that transcend existing norms, practices and organizational/institutional arrangements.

Whole-of-society governance: an approach that builds on engaging multi-sectoral stakeholders to facilitate their active participation in the decision-making and coordination processes to take appropriate measures together.

Wicked problem: a problem that is difficult or impossible to solve because of incomplete, contradictory, and changing requirements that are often difficult to recognize.

2. Measurements and Indicators

Mitigation strategies (focus on slowing but not necessarily stopping epidemic spread – reducing peak healthcare demand while protecting those most at risk of severe disease from infection)

Suppression strategies (aim to reverse epidemic growth, reducing case numbers to low levels and maintaining that situation indefinitely):

- Logistics and distribution
    - PPE for healthcare workers
    - ICU bed capacity and number of ventilators per population unit
- Social distancing
    - Personal hygiene behavioral practices (e.g., handwashing, wearing a mask)
    - Home quarantine (voluntary/mandatory)
- Public health measures
    - Isolation of suspect cases
    - Testing
- Lockdowns
    - partial (closure of stores, schools, universities and so on) or complete
- Social and economic measures
- Movement restrictions
- Citizen initiatives

3. Macro/global/international level institutes with policy advice and/or response

- WHO: https://www.who.int/emergencies/diseases/novel-coronavirus-2019
- PAHO/WHO: https://www.paho.org/en/topics/coronavirus-infections/coronavirus-disease-covid-19
- WHO training: https://openwho.org/channels/covid-19
- ECDC: https://www.ecdc.europa.eu/en/covid-19-pandemic e.g
- CDC: https://www.cdc.gov/coronavirus/index.htm
- Africa CDC: https://africacdc.org/
- CDC Central Asia: https://www.cdc.gov/globalhealth/countries/central-asia/index.html

UN system: https://www.un.org/en/coronavirus

- UNICEF: https://www.unicef.org/pacificislands/stories/coronavirus-disease-covid-19-what-parents-should-know
- WHO Regional Office for Europe: http://www.euro.who.int/en/health-topics/health-emergencies/coronavirus-covid-19/novel-coronavirus-2019-ncov-technical-guidance/coronavirus-disease-covid-19-outbreak-technical-guidance-europe/strengthening-the-health-systems-response-to-covid-19
- OECD: https://www.oecd.org/coronavirus/en/
- WEF, World Economic Forum: https://www.weforum.org/agenda/2020/03/covid-19-coronavirus-policy-tools-economic-impact/
- UNOCHA: https://www.unocha.org/COVID-19
- EU (coronavirus public health response): https://ec.europa.eu/info/live-work-travel-eu/health/coronavirus-response/public-health_en
- European Observatory COVID-19 Health System Response Monitor: https://www.COVID-19healthsystem.org/mainpage.aspx
- World Bank: https://www.worldbank.org/en/who-we-are/news/coronavirus-COVID-19
- European Medicines Agency (EMA): https://www.ema.europa.eu/en/human-regulatory/overview/public-health-threats/coronavirus-disease-covid-19
- Food and Drug Administration (FDA): https://www.fda.gov/emergency-preparedness-and-response/counterterrorism-and-emerging-threats/coronavirus-disease-2019-covid-19#new
- MSF: https://www.msf.org/covid-19
- International Red Cross: https://www.icrc.org/en/document/covid-19-coronavirus-pandemic-icrc#gs.2pbmj4

4. Key websites for measurements and indicators (of the spread of the virus and the outcome of policies)

Websites on the spread of the virus, numbers, measures (a selection)

- Johns Hopkins: https://coronavirus.jhu.edu/
- Harvard: https://www.health.harvard.edu/diseases-and-conditions/coronavirus-resource-center
- The Institute for Health Metrics and Evaluation (IHME), an independent global health research center at the University of Washington: http://www.healthdata.org/covid
- ACAPS: https://www.acaps.org/projects/COVID-19 and https://www.acaps.org/COVID-19-government-measures-dataset
- GIDEON: https://www.gideononline.com/
- Worldometer: https://www.worldometers.info/coronavirus/
- Deep Knowledge Group (private): https://www.dkv.global/covid-19/full-report
- Joint Research Center Ispra: https://drmkc.jrc.ec.europa.eu/overview/COVID-19#documents/972/list
- ECDC: https://www.ecdc.europa.eu/en/covid-19-pandemic e.g. with Rapid Risk Assessments
- EU level:
  - https://www.consilium.europa.eu/en/policies/covid-19-coronavirus-outbreak/
  - https://ec.europa.eu/info/live-work-travel-eu/health/coronavirus-response_en
- The Netherlands: RIVM: https://www.rivm.nl/en and https://www.rivm.nl/en/novel-coronavirus-covid-19
- Stat news: https://www.statnews.com/tag/coronavirus/
- Wikipedia (with references)
  - https://en.wikipedia.org/wiki/2019%E2%80%9320_coronavirus_pandemic_by_country_and_territory
  - https://en.wikipedia.org/wiki/National_responses_to_the_2019%E2%80%9320_coronavirus_pandemic
  - https://en.wikipedia.org/wiki/Portal:Coronavirus_disease_2019
- The Lancet COVID-19 Resource Center: https://www.thelancet.com/coronavirus
- University of Oxford COVID-19 Evidence Service. The Centre for Evidence-Based Medicine (CEBM): https://www.cebm.net/oxford-covid-19-evidence-service/
- Devex: https://www.devex.com/focus/covid-19
- Imperial College London: https://www.imperial.ac.uk/mrc-global-infectious-disease-analysis/covid-19/ and http://www.imperial.ac.uk/medicine/nihr-hpru-respiratory-infections (Steven Riley: https://www.imperial.ac.uk/people/s.riley)
- The British Medical Journal (BMJ): https://www.bmj.com/coronavirus
- The London School of Hygiene & Tropical Medicine (LSHTM): https://www.lshtm.ac.uk/research/research-action/covid-19

Websites on data/input on governance analysis

- Oxford: https://www.bsg.ox.ac.uk/research/research-projects/coronavirus-government-response-tracker See also: https://www.cebm.net/covid-19/
- Data infrastructure platform: https://medium.com/data-stewards-network/a-call-for-action-813669f32244
- ACAPS: https://www.acaps.org/projects/COVID-19
- Global Health Security Index: https://www.ghsindex.org/
- Our World in Data (Oxford University based): https://ourworldindata.org/coronavirus

5. Topic list for interviews and expert meetings

Interview Guide for Interviews and Expert Group Meetings WP1

Problem statement

The COVID-19 crisis governance – that is, the act of governing based on authority, decision-making and accountability – requires dynamic collaboration over time, spanning from immediate responses to the crisis and toward recovery and building resilience for the future. The governance ecosystem comprises the following: (a) multiple layers/levels of formal governance structures, (b) networks of diverse agencies and actors interacting and (c) informal emergent groups of spontaneous volunteers or bottom up citizens' initiatives.

Goal

To understand issues of collaboration, coordination and collective policies and actions in the COVID-19 governance ecosystem (and how it evolved over time). To collect concrete examples of good/best practices and of tensions and dilemmas.

Topics and questions

To unpack the dynamics of the crisis **governance ecosystem**, we aim to reflect on the following guiding questions:

- Where are the **gaps in current governance** arrangements when we are faced with the challenges of the COVID-19 pandemic?
- How do different actors **collectively reach a shared understandin**g of the crisis situation under conditions of **volatility** (unexpected or unstable challenge of unknown duration), **uncertainty** (lack of information), **complexity** (situation that comprises many interdependent parts) and **ambiguity** (unknown unknowns, contradictions and dilemmas among different priorities for action)?
- How can we **collaborate** and coordinate governance responses **across multiple boundaries**? Between:
    - Government and citizens
    - national states
    - sectors (crisis management/security services and healthcare)
    - Public-private
    - diverse professional expertise
    - formal and informal structures

Guiding questions

Multi-level Governance

1. How are global (i.e., WHO, OECD, World Bank) and supra-national (i.e., EU/ECDC) policies and measures being "translated" to national and subnational local levels? How was translation shaped by leadership, culture, norms, or tradition and previous experience?

2. What kind of expertise has been involved in the translation of policies and measures? Does it vary across levels (national, regional, municipal, organizational, neighborhood) and among different professions?

Network Governance

3. 1. What kind of interactions took place between different stakeholders across multiple boundaries (see above)? What interactions are currently missing that should have taken place, and why?

4. How was collaboration negotiated between different stakeholders? How were information exchanged and decisions made?

Participatory Governance

5. What has been the role of the civic sector and citizens groups (spontaneous volunteers) in the crisis response? Has there been coordination with formal governance agencies?

6. What are the opportunities/constraints regarding the (organization of) spontaneous volunteering, civic-sector groups and citizens' initiatives in response to the COVID-19 crisis?