

Navigating and anticipating in uncertain times

WRR

THE NETHERLANDS SCIENTIFIC COUNCIL FOR GOVERNMENT POLICY



KNAW

Navigating and anticipating in uncertain times

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Summary

The world has now been living with COVID-19 for a year and a half. The pandemic has had a severe impact on society. Primarily for the people who have lost loved ones due to COVID-19 and those working in the healthcare sector, of course, but also far more widely. A year and a half of pandemic and crisis management have left their mark on everyone.

In this advice, the Royal Netherlands Academy of Arts and Sciences (KNAW) and the Netherlands Scientific Council for Government Policy (WRR) provide scientific-strategic guidance for the next phases of combating the pandemic, as well as advice on enhancing the coherence with other important long-term political and societal challenges. The WRR informs and advises government and Parliament on strategic issues that are likely to have important political and societal consequences. The KNAW is a society of scientists from all disciplines.

This advice delivers two main messages. First, both the government and society must prepare for different scenarios concerning the development of the pandemic. Second, in its policy approach the government should focus not only on combating the pandemic and recovery from it, but also on the coherence of these efforts with other important societal issues. The start of a new term of government is a particularly important moment in this regard.

To this end, the KNAW and the WRR begin this publication with an analysis of the broad societal impact of the pandemic. This is followed by an outline of five future scenarios for the COVID-19 pandemic. Finally, we address the consequences of these findings for the major policy challenges the Netherlands will be facing in the coming years.

The pandemic has had major consequences for Dutch society. New policy challenges have arisen and existing ones have become more profound or visible, while others have shifted into the background (at least temporarily). The greatest new policy challenge involves bringing the pandemic itself under control through testing, tracing and vaccination. The healthcare sector is also facing major new challenges. Healthcare services specifically related to COVID-19 have to be provided, ICU capacity needs to be scaled up and the available hospital beds must be allocated as fairly as possible. In addition, former COVID-19 patients and people with 'long COVID' are in need of follow-up care. The pandemic has nevertheless also had unexpected positive effects in the area of healthcare, including a reduction in premature births.

At the same time, the pandemic has deepened challenges or made them more visible. Even before it began, there were important health disparities between people of higher and lower socioeconomic status (SES), and the pandemic has had a more severe impact on groups of lower SES. Similar effects can be observed in terms of education. For years there have been concerns about the increasing inequality of opportunities within the educational system in the Netherlands, and the pandemic has further exacerbated that inequality. The process of digitalisation accelerated, too, generating enormous opportunities. At the same time, however, this new situation has revealed many drawbacks with regard to privacy, dependence on large companies and cybercrime. Moreover, the pandemic has highlighted ongoing questions concerning international

economic relations and dependencies. It has also shifted other policy challenges into the background (at least temporarily). Various measures related to sustainability have been postponed or relaxed, and regular healthcare has suffered serious delays that have yet to be resolved. Finally, the pandemic has had repercussions for governance and law. The government has been confronted with difficult trade-offs between protecting public health and safeguarding individual freedoms and democratic procedures.

Today's society is thus not the same as it was early in 2020. The desire to return to 'normal' daily life is strong, but the further development of the pandemic is uncertain. With the goal of providing guidelines for coping with that uncertainty, the WRR and the KNAW have outlined five scenarios for the possible course of the pandemic.¹ These are based on four driving forces: mutations of the virus, vaccination, immunity and human behaviour.

- 1 *Return to normal*: COVID-19 is completely eliminated. Throughout the world, enough people are immune due to (re)vaccination or recovery from infection. The virus is not mutating in a way that escapes immunity.
- 2 *Flu+*: COVID-19 becomes endemic, with annual waves. Most people do not become seriously ill, although vulnerable groups remain at increased risk. Booster vaccinations may be necessary, depending on the course of the pandemic and the duration of immunity. The virus continues to mutate, but not in a way that leads to major changes in its severity or spread.
- 3 *External threat*: The virus is under control in the Netherlands and most European countries, but not in many other parts of the world. There, it continues to circulate and mutate into new and dangerous variants. Strict border policies are enacted in an effort to prevent new outbreaks in 'safe' countries.
- 4 *Continuous struggle*: COVID-19 remains a serious threat. Vaccines are not working sufficiently (or for a sufficiently long period) and new variants are continuing to develop, at least some of them resistant to the existing vaccines. Ongoing appeals are made for society to be resilient.
- 5 *Worst case*: COVID-19 continues to claim more victims each year, and it continues to circulate throughout the world. The immunity that has been built up and the effectiveness of vaccines are limited. It is uncertain when the pandemic will die out and, until then, serious outbreaks continue to occur. Society and the economy experience a long period of disruption.

These scenarios do not only describe the possible development of the virus and the pandemic, but also the societal impact. The questions facing the government and society in a 'return-to-normal' scenario are different from those accompanying a 'worst-case' scenario. Against this background, four main recommendations have been formulated in this advice.

(1) Anticipate different scenarios. This can prevent the government and society from being constantly caught off-guard and forced to take *ad hoc* decisions. Some policy choices would be wise in all scenarios. The most important one of these involves working towards effective vaccination on a global scale, as this reduces the

¹ A pandemic occurs on a global scale. Although the scenarios in this publication have been outlined for the Dutch context, the situation in many other affluent countries is likely to be comparable and so those scenarios may also be applicable, *mutatis mutandis*, in their context.

risk that more dangerous variants of the virus will develop. Other policy choices will differ from scenario to scenario (e.g. with regard to which measures are appropriate), but it is possible to prepare for several different scenarios in this regard.

(2) Aim for broad societal resilience. The next crisis could just as likely emerge from another direction. Although not every possible threat can be foreseen, important steps can be taken in advance when it comes to the ability of society as a whole to cope with shocks. This means that it is not merely a matter of solving or preventing crises, but also of enabling society to anticipate and cope with them.

(3) Link the challenge of recovery from this pandemic to an approach to long-term issues. The world is facing a variety of long-term policy challenges that do not exist in isolation, but are connected to each other. It is important to incorporate such coherence into the recovery policy.

(4) Protect the values of the democratic rule of law. The pandemic has been a stress test for public administration and the democratic system. There are no simple answers to the trade-offs that must be made between fundamental rights. Even in a crisis, however, it is necessary to ensure the presence of sufficient safeguards for democratic processes and fundamental rights.



Foreword

After all these months, it is clear that the COVID-19 crisis involves more than just fighting a virus. The pandemic is having a much wider impact, placing enormous strain on healthcare, leading to students missing classroom education and causing major losses in some cultural and economic sectors, even as other sectors flourish. Although the vaccination campaign is now in full swing, the pandemic is not yet over and its further course remains uncertain. Mutations of the virus, vaccine effectiveness, vaccination readiness, the duration of immunity and human behaviour play a decisive role in this regard, in combination with the measures that have already been taken.

In this advice, the WRR and the KNAW outline five scenarios for the possible course of the COVID-19 pandemic. These are not predictions, but they do describe plausible futures to help guide strategic thinking. They demonstrate that, depending on the course of the pandemic, there will be either more or less leeway for recovery in such areas as healthcare, society and the economy. This calls for both the government and society as a whole to anticipate different scenarios and the societal challenges associated with them.

Such anticipation can prevent the government and society from being caught off-guard and having to take important decisions on an *ad hoc* basis. The Netherlands and the rest of the world will possibly be living with coronavirus for years to come. This will have major consequences for healthcare, as well as for many other policy domains. For this reason, the government cannot focus its policy approach exclusively on the COVID-19 pandemic. Rather, policy relating to the pandemic should be developed in alignment with other important societal issues. The approach to this pandemic and its consequences therefore calls for policy based on more than virological and medical knowledge alone; it is of at least equal importance that it also draw on relevant knowledge and insights from the behavioural and social sciences, and that this input play a clear role in advisory and decision-making processes.

In this advice, the WRR and the KNAW aim to chart the policy challenges related to the COVID-19 pandemic for the Netherlands. This is the final publication of a joint WRR and KNAW project that offered scientific-strategic guidance for government policy in the coming years. This project comprises three publications. In early June 2021 an interim note was published for the *informatie*, containing five possible scenarios for the further course of the pandemic.² A collection of brief expert papers on the impact of COVID-19 in several important areas was published in July.³ In this concluding publication, the scenarios are further elaborated and presented along with the findings reached by the WRR and the KNAW based on the earlier publications, input from experts and further study of the relevant literature.

2 The *informatie* is the independent presiding official in preliminary negotiations between political parties to form a new government following the general election of 17 March 2021. The interim note in question, entitled *Scenariostudie COVID-19; Tussentijds bericht* [Scenario study on COVID-19: interim note], was published on 1 June 2020 and is only available in Dutch (at <https://www.wrr.nl/adviesprojecten/coronacrisis/documenten/brieven/2021/06/01/brief-aan-de-informateur-scenariostudie-covid-19>). However, the scenarios outlined in it correspond with those presented in this publication.

3 This collection, entitled *COVID-19: Expertvisies op de gevolgen voor samenleving en beleid* [COVID-19: Expert visions on the implications for society and policy] was presented on 15 July 2020 and is only available in Dutch (at <https://www.wrr.nl/adviesprojecten/coronacrisis/documenten/publicaties/2021/07/15/covid-19-expertvisies-op-de-gevolgen-voor-samenleving-en-beleid>).

This advice was prepared and compiled by a project group co-chaired by Tanja van der Lippe and André Knottnerus. Its other members were Josta de Hoog (project co-ordinator), Ruth Mampuy (researcher), Myrthe van de Pavert (student trainee) and Frans Brom (director of the WRR). We are grateful to the project group and the members of the advisory committee: Catrien Bijleveld, Godfried Engbersen and Maarten Prak. We also owe a debt of gratitude to all interviewees, as well as to the experts who have contributed papers and the five reviewers who provided comments on the final draft version: Dirk Bezemer, Ron Fouchier, Janneke Gerards, Paul 't Hart and Brenda Penninx (a list of interviewees is provided in Appendix A and an overview of the project group, supervisory committee and reviewers in Appendix B). Finally, we would like to thank Ernst Hirsch Ballin, Anne-Greet Keizer, Ivonne Rietjens, Bart Stellinga and others from the WRR and the KNAW for their comments on previous versions. Responsibility for the content of this publication rests with the WRR, the KNAW and the project group.

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THE NETHERLANDS SCIENTIFIC COUNCIL FOR GOVERNMENT POLICY

**KNAW**

1 Introduction

For years there had been warnings of a new pandemic, and virologists even predicted that it might well be caused by a coronavirus.⁴ The world was nevertheless caught off-guard by COVID-19.⁵ Even after the virus had reached Italy, the scale of what was to come in the Netherlands had not yet sunk in. Until right before the first lockdown, it was inconceivable that public life would be brought largely to a standstill by a virus that had first emerged in China.⁶ With the COVID-19 pandemic, the inconceivable suddenly became an all-encompassing reality.⁷

This new reality has been part of our daily lives for a year and a half. People have lost loved ones, the healthcare system has been placed under enormous strain and parts of the economy and society have been brought to a complete standstill. Things that are usually taken for granted, like going to school or work and visiting relatives, were suddenly no longer a given. Forecasts concerning the development of the COVID-19 pandemic have had to be adjusted several times since it began. In early 2021 the Dutch government introduced a 'six-step plan' for relaxing the COVID-19 measures it had imposed.⁸ But shortly after the beginning of the summer of 2021, the acceleration towards reopening society and the economy turned out to be short-lived, with a number of wide-ranging relaxations being reversed after only two weeks. Once again, society was forced to adjust its expectations.

It has become clear in the past year and a half that the pandemic and the efforts to fight it have had far-reaching consequences for society as a whole, as well as for ongoing policy challenges within many domains. In this advice, the Royal Netherlands Academy of Sciences (KNAW) and the Netherlands Scientific Council for Government Policy (WRR) offer scientific-strategic guidance based on scientific knowledge and expertise, for the next phases of combating the pandemic as well as for enhancing the coherence with important long-term political and societal challenges. The start of a new term of government is a particularly important moment in this regard.⁹ This analysis encompasses two elements: outlining the broad societal impact of COVID-19 and developing scenarios for the course of and recovery from the COVID-19 pandemic.

This analysis is explicitly not intended as an evaluation of coronavirus policy in the Netherlands. Although such an evaluation is obviously important, it requires another study. Given the fact that both the pandemic

4 Experts had long predicted the major pandemic potential of viruses that cause respiratory infections (Sridhar 2020). After the SARS epidemic, the World Health Organisation (WHO) began warning about a new outbreak of a coronavirus (WHO 2003). In 2004 the Health Council of the Netherlands, in collaboration with the WHO and the National Institute for Public Health and the Environment (RIVM), issued an advisory report on emerging zoonoses and pandemic risks, and the associated prevention, preparation and response (Gezondheidsraad 2004). The 2013 MERS outbreak was also followed by advice to be alert to the development of coronaviruses (De Wit et al. 2016). In 2017 the Johns Hopkins Center for Health Security published a scenario study for a pandemic caused by a coronavirus (Schoch-Spana 2017).

5 In official terms, SARS-CoV-2 is the virus and COVID-19 is the disease it causes. Given its broader familiarity, the term COVID-19 is used primarily throughout this publication.

6 Outbreak Management Team (OMT) member Aura Timen, in an interview in the newspaper *NRC Handelsblad* (Korteweg 2020).

7 Boin et al. 2021.

8 *Overzicht zesstappenplan 2021* [Overview of the 2021 six-step plan], available at www.rijksoverheid.nl/onderwerpen/coronavirus-covid-19/documenten/publicaties/2021/04/13/informatieblad-corona-13-april-2021.

9 The Netherlands held elections for the House of Representatives on 17 March 2021. Negotiations concerning the formation of a government were ongoing at the time of publication.

and its societal impact are still actively developing, it is too early for any thorough international comparison. The rapidly changing developments further imply that some specific figures used as illustrations in this advice could change within a short time. We regard the uncertainty concerning the development of the pandemic and its societal impact as an essential characteristic of these times. We return to this point in the conclusion.

For this advice, interviews were held with scientists from various disciplines and domains, policymakers at the national and local level and other experts (see Appendix A). Scientists from various disciplines were asked to write brief papers based on the recurring themes identified in these interviews. This collection of papers was published in July 2021 under the title *COVID-19: Expertvisies op de gevolgen voor samenleving en beleid* [COVID-19: Expert visions on the implications for society and policy]. Additional sources include international scientific literature, previous work by the WRR and the KNAW and the work of other advisory councils and planning agencies. In addition, sessions were held within the WRR with the KNAW Social Sciences Council (SWR) and the Corona Advisory Committee, on which the chairs of the various advisory councils of the KNAW were represented.

The broader implications of the pandemic for various policy domains are outlined in Chapter 2. What have been its consequences for health, social cohesion, the economy, sustainability, digitalisation, governance and law? The pandemic has given rise to new policy challenges, while increasing the visibility or depth of some existing ones and, at least temporarily, decreasing the attention paid to others. This discussion is followed by an outline of five scenarios for the future development of COVID-19 (Chapter 3). Although many would like to have the pandemic behind us as soon as possible, such an outcome looks increasingly unlikely. In the concluding chapter we consider the policy implications of these scenarios. To this end, we formulate two main messages: (1) both the government and society must prepare for different scenarios for the development COVID-19; and (2) the government should link its policy approach to the pandemic with other important societal issues.

2 Broad implications of the pandemic

Dutch society is different from what it was in January 2020, when COVID-19 still appeared to be a limited outbreak of a virus in another part of the world. The pandemic and the measures that have been taken to fight it have left traces across society – not only within the families who have lost loved ones and in the healthcare system, but also in education, the hospitality industry, arts and culture, public administration and the rule of law. After more than a year and a half of the pandemic, with the associated upscaling and downscaling of response measures, society has changed – perhaps permanently.

Although new policy challenges have emerged, many of the societal issues the Netherlands is currently facing are not new. This chapter considers the broad implications of the COVID-19 pandemic for six societal themes: healthcare, social cohesion, the economy, sustainability, digitalisation and governance and law. These have been selected based on the topics raised by scientists, policymakers and other experts during the interviews (see Appendix A). They can also be recognised in the topics being discussed as part of the formation of a new government, as well as in the themes arising in the dialogues the central government had with society last year with regard to the Netherlands after the crisis.¹⁰

2.1 Healthcare

The COVID-19 crisis has given rise to a major new policy challenge relating to public health and healthcare: to gain control over a threatening and subsequently rapidly developing pandemic. It has required contact tracing, setting up large-scale testing, acquiring sufficient personal protective equipment, ensuring sufficient ICU capacity, developing vaccines and launching a massive vaccination campaign. The crisis is also challenging the Dutch healthcare and public health system in a broader sense.¹¹

This paragraph focuses primarily on these broader implications, as the pandemic has also had far-reaching consequences for the healthcare system, beyond COVID-19 care. The acute treatment of COVID-19 patients has generated a massive backlog in regular healthcare services in the Netherlands. An estimated 340,000 to 380,000 operations have not been performed, the majority of which must be made up.¹² This is in addition to the ongoing regular healthcare services that hospitals must be able to continue providing. The National Institute for Public Health and the Environment (RIVM) has estimated that the postponement of hospital care alone during the first wave of COVID-19 will lead to the loss of at least 50,000 years of healthy life.¹³

¹⁰ *Informateur* Mariëtte Hamer in *NRC Handelsblad* (Lammers 2021); DG samenleving en COVID-19 2021 [Directorate-General for Society and COVID-19, 2021].

¹¹ Mackenbach 2021.

¹² Between the initial appearance of coronavirus in March 2020 and August 2021, an estimated 340,000–380,000 fewer operations were performed than normal. According to the Netherlands Healthcare Authority, 170,000–210,000 of these operations will have to be made up (see: www.nza.nl/actueel/nieuws/2021/08/27/schatting-inhaalopgave-170-tot-210-duizend-operaties).

¹³ RIVM 2020.

Follow-up care is also needed for patients with ‘long COVID’¹⁴ and for former COVID-19 patients with complications.¹⁵ In addition, it is unclear how large this group will ultimately be and how long these patients will continue to experience complaints.¹⁶ With regard to long COVID, in the Netherlands many tens of thousands of people from different age groups will need to visit physiotherapy and pulmonary clinics for a long time after having been infected with COVID-19, thus placing an additional burden on the healthcare system.¹⁷ One of the factors underlying a more serious illness due to COVID-19 is an unhealthy lifestyle.¹⁸ During the crisis, the promotion of a healthy lifestyle has thus been mentioned regularly as an important preventive measure.¹⁹

The contact-restricting measures made it more difficult for other viruses (e.g. the ‘normal’ flu virus) to spread. In some cases, however, this could mean that a flare-up will occur once social contacts are resumed.²⁰ During the COVID-19 pandemic, findings have also been reported that could yield a number of teaching points for good healthcare, thus qualifying for further investigation. One example is a decrease that was observed in premature births and low birth weights. Explanations offered for this include the possibility that the anti-coronavirus measures had advantageous effects on these outcomes. In addition, an increase in the number of people with mental complaints has been observed as a result of the crisis.²¹ Some, for example, have found themselves struggling with feelings of anxiety and depression. This, too, constitutes an additional challenge for the healthcare system. Patients with long COVID and with mental complaints could possibly experience long-term damage to their social functioning, as well as in their personal lives and on the labour market.²²

Even before the crisis, clear disparities could be observed in the Netherlands between people of higher and lower socioeconomic status (SES).²³ The pandemic has exacerbated these. From an international perspective, people with lower incomes are at higher risk of more serious illness and death from COVID-19,²⁴ its effects have also been more severe for lower-income groups in the Netherlands.²⁵ This is in line with lessons from history: pandemics always cause greater health detriment for groups of lower socioeconomic status.²⁶ Factors that play a role in this regard are likely to include a previous history of poorer health, living as a large family in a small

14 Patients with long COVID are defined as those former COVID-19 patients who continue to experience symptoms (e.g. fatigue, loss of smell/taste, confusion, coughing, shortness of breath and muscle pain) after three months or longer. These are long-term effects of the disease (RIVM 2021a; Sudre et al. 2021).

15 According to one British study involving 73,000 COVID-19 patients who had been admitted to hospital, nearly 45% developed complications. One question in this regard concerns how long the associated health problems persist (Drake et al. 2021).

16 Nalbandian et al. 2021; Willyard 2021.

17 De Visser and Fossen 2021.

18 Lange and Nakamura 2020; Hamer et al. 2020.

19 The government has reiterated the importance of a healthy lifestyle during the pandemic (see: www.rijksoverheid.nl/onderwerpen/coronavirus-covid-19/gezondheid-en-zorg/gezond-leven-in-tijden-van-corona). According to a Dutch study on lifestyle changes during the first wave of COVID-19 in the Netherlands, people were more likely to adopt an unhealthy lifestyle than a healthy one. Additional research is needed to determine the long-term persistence of such changes (Van der Werf et al. 2021).

20 Gomez et al. 2021; Servick 2020.

21 This was observed in parallel with a slight decrease in the symptoms reported by people with multiple mental-health problems (see: Abbott 2021; Pan et al. 2021).

22 Davis et al. 2021; Giuntella et al. 2021.

23 Mackenbach et al. 2019; Broeders et al. 2018. Social-economic status (SES) is an indicator of the position of people within society that is derived from their income and level of education.

24 Bamba et al. 2020; Douglas et al. 2020; Oh, Choi and Song 2020.

25 De Visser et al. 2021.

26 Hoes et al. 2018; Pini et al. 2019; Prak 2021; Summers et al. 2014.

home with no garden or easily accessible green space, employment that make it more difficult to work from home and differences in lifestyle (smoking, overweight).²⁷ In addition, people from lower-income groups and those in poorer health (perceived or actual) experience more anxiety and stress due to COVID-19 than is the case for people in higher-income groups and those who perceive themselves as being in good health.²⁸ Moreover, it is known that low income and poorer health (perceived or actual) are often associated with one another.²⁹

2.2 Social cohesion

Social cohesion refers to the manner in which different groups in the Netherlands live together and the mutual trust between citizens, as well as the trust between citizens and important institutions (including government) and the occurrence of inequalities between citizens. A low level of trust and major inequalities pose a threat to social cohesion. The trust that citizens have in each other was shown to be relatively strong during the pandemic, and there has been evidence of mutual solidarity. The willingness of people to help each other has not decreased during the pandemic. General trust in the Dutch government has decreased, however, following an initial observed increase. At the same time, a number of disparities and inequalities in society have become more visible or deepened, including those related to education and the labour market.³⁰

The consequences of contracting COVID-19, as well as the societal consequences of the pandemic and the measures taken to fight it have not been the same for everyone.³¹ Groups that have been affected particularly heavily include young people, the elderly, those with psychological problems, homeless people, families with young children and families in which domestic violence occurs.³² Within families, women have generally had to bear a disproportionate share of the additional burdens resulting from the pandemic.³³

On the other hand, some people have actually felt better as a result of the relative calm in society during the pandemic.³⁴ People with more social capital also reported greater well-being during this period than was the case for those with less.³⁵ All things considered, it is important to pay attention to the fact that the effects of the coronavirus pandemic have been more profound for people who were already vulnerable or in a position of disadvantage.

In the Netherlands, education is a determining factor for a person's position within society. Educational differences are an important 'proxy' for other social-economic differences, including those in terms of

27 Hamer et al. 2020; Knottnerus and Tugwell 2020.

28 Snel et al. 2021.

29 Adler and Newman 2002; Foraker et al. 2011; Signorello et al. 2014.

30 Engbersen et al. 2021; Grasso et al. 2021; SCP 2021a.

31 The British Academy 2021; Settersten et al. 2020.

32 De Vries and Pols 2020; SCP 2021b.

33 One pan-European study indicates that the gender disparities in the Netherlands have been significantly larger than in other European countries: "Across Europe, there were wide variations from one country to another: in Belgium, Germany, Slovenia and Spain, the gender difference in caring for children or grandchildren was just 1 or 2 hours, while in the Netherlands (49 hours for women compared to 23 hours for men), the difference was most marked" (Bhardwaj and Obaid 2021; Eurofound 2020; Yerkes et al. 2020).

34 Stallard et al. 2021; Vazquez et al. 2021.

35 Social capital is determined by people's social contacts and networks and by the trust they have in other people and in institutions (Snel et al. 2021).

income, social and cultural capital, trust (political and general) and health.³⁶ In education, not everyone receives equal opportunities. In Year 8 of compulsory education (the final year of primary school), for example, children whose parents hold a university degree are more likely to be recommended for higher streams in secondary education than peers with the same test scores whose parents have not completed their schooling or have only a vocational qualification.³⁷ The COVID-19 crisis has further exacerbated this inequality. Due to the closure of schools, students with university-educated parents further extended their advantage over the rest.³⁸ Both material resources (having a laptop, one's own room and a workplace) and immaterial ones (having parents who can help) played a role in this regard.³⁹ In the Netherlands, pupils completing primary school received lower average recommendations for their streaming in secondary education than had been the case in previous years. As a result, an estimated 14,000 children have missed out on higher recommendations.⁴⁰ These are relatively frequently those from a migrant background or whose parents have only few years of schooling and/or low incomes.⁴¹ Inequality of opportunity seems to have increased during the pandemic, not only in primary education but also at secondary level and for first-generation university students.⁴²

The Netherlands Ministry of Education, Culture and Science (ocw) has allocated €8.5 billion to correct the deficiencies.⁴³ There has nevertheless been considerable debate concerning the best way to use these funds, and some experts have suggested that they might even exacerbate existing problems (e.g. the teacher shortage) in some places.⁴⁴

Disparities in the labour market are not new. There have long been warnings about a divide between people in permanent employment and those with 'flexible' arrangements. The latter category consists of temporary contracts, zero-hours contracts and self-employment without staff (zpp'ers).⁴⁵ Compared with other European countries, the Netherlands has a relatively large percentage of flexible employment relationships.⁴⁶ Because they are not uniform, the consequences of the COVID-19 crisis differ within this group. More than half (51%) of all self-employed people without staff reported that demand for their products or services decreased due to the pandemic, while 11% reported an increase in demand.⁴⁷ This does not imply that this group is less satisfied in all respects, though. Most self-employed people

36 Bovens et al. 2014; De Lange et al. 2016.

37 Reported by the Netherlands Inspectorate of Education, 2019 (see: www.onderwijsinspectie.nl/onderwerpen/staat-van-het-onderwijs/trends-in-het-onderwijs/nederlands-onderwijs/kansenongelijkheid-loopt-niet-verder-op).

38 Inspectie van het Onderwijs 2021a; Onderwijsraad 2020.

39 Bol 2020.

40 Swart et al. 2020, cited in Inspectie van het Onderwijs 2021b.

41 Inspectie van het Onderwijs 2021b; Zwier et al. 2021.

42 Diversity Office 2020 and accompanying press release (www.scienceguide.nl/2020/05/corona-versterkt-ongelijkheid-onder-studenten-op-de-vrije-universiteit/); SER 2021a.

43 '8,5 Miljard voor Nationaal Programma Onderwijs' [8.5 billion for national education programme] (see the press release dated 17 February 2021: www.rijksoverheid.nl/actueel/nieuws/2021/02/17/85-miljard-euro-voor-nationaal-programma-onderwijs). In addition, teachers, school managers and support staff at schools with major deficiencies will temporarily receive additional salary (RTL Nieuws 2021).

44 *Brief Algemene Rekenkamer aan de Voorzitter van de Tweede Kamer der Staten-Generaal* [Letter from the Netherlands Court of Audit to the Speaker of the House of Representatives], 31 March 2021, reference code 21002446 R.; Remie & Veldhuis 2021.

45 Commissie-Borstlap 2020; Kremer et al. 2017; WRR 2020a.

46 Eurofound 2020; SCP 2020a; WRR 2020a.

47 Van de Ven et al. 2021.

without staff report being satisfied or highly satisfied with their work, for example, and their level of satisfaction is no lower now than it was before the crisis.⁴⁸

Unemployment grew sharply at the beginning of the crisis and then decreased slightly. In the second quarter of 2021, the number of job vacancies even exceeded the number of unemployed people.⁴⁹ Due in part to generous government support, the consequences have not been as great as was feared at the beginning of the crisis.⁵⁰ By comparison with the end of 2019, unemployment in the Netherlands has increased primarily amongst young adults, people with a vocational qualification or no qualifications and those of non-Western origin. University graduates have been less affected.⁵¹ This disparity corresponds with the divide in the labour market mentioned above, in which there is a core of permanent employees (many of whom are well-paid, hold a degree and are older) well-protected against economic or personal setbacks and a group of flexible workers (many of whom receive lower pay, hold a vocational qualification or have not completed their schooling and are young and/or from a migrant background), who are less resilient to shocks⁵² and were more likely to become unemployed during the pandemic.

A support scheme for the self-employed (including those without staff) was introduced during the crisis. This added further depth to pre-existing discussions concerning the substantial difference between permanent employees and flexible workers with regard to protection against risks. The Social and Economic Council (SER) has since issued an advisory report on this matter, which has been supported by employers and employees alike. This states that, whereas core work should in principle be organised under employment contracts of indefinite duration, other forms of contract should be better regulated.⁵³

Existing disparities in the housing market also became more visible and acute during the pandemic. For some time now it has been very difficult – particularly for first-time buyers and socially vulnerable groups – to find affordable and suitable homes in the Netherlands.⁵⁴ People with overcrowded housing have experienced several forms of disadvantage since the outbreak of COVID-19. Home schooling and working from home – where possible, given the nature of the work – are more difficult, the risk of infection is greater and there are fewer possibilities for rest or relaxation. In spring 2021 the mayors of 15 large cities raised the alarm about the gap between residents of vulnerable neighbourhoods and the rest of the Netherlands, which appeared to be becoming unbridgeable. Together, those neighbourhoods are home to a million people⁵⁵ for whom the effects of the crisis have been especially severe.

48 In 2016, 81% of all self-employed people without staff reported being satisfied with their work, as compared to 78% of those in permanent employment. Only 66% of all temporary employees reported being satisfied (CBS 2017). Following the outbreak of the coronavirus, 81% of all self-employed people without staff reported being satisfied (or highly satisfied) with their self-employment – a level equal to that before the crisis (Van de Ven et al. 2021).

49 CBS 2021, available at: www.cbs.nl/nl-nl/nieuws/2021/33/meer-vacatures-dan-werklozen-in-tweede-kwartaal.

50 De Klerk et al. 2021.

51 De Klerk et al. 2021.

52 Vlekke et al. 2021; SCP 2020b.

53 SER 2021b.

54 Ministry of the Interior and Kingdom Relations (BKZ) 2020; Dekker, Muis, Sieben and Van Houwelingen 2019.

55 J. van der Meulen 2021.

2.3 Economy

During the second quarter of 2020, the pandemic led to a contraction in the Dutch economy by 8.5% – the largest ever recorded by Statistics Netherlands (CBS).⁵⁶ Although its initial effects were severe, the economic impact of COVID-19 has thus far been less serious than expected, partly due to the extensive support packages provided by the Dutch government. In its baseline forecast of June 2020, CPB Netherlands Bureau for Economic Policy Analysis (CPB) predicted a decline of 6% in gross domestic product (GDP) for 2020.⁵⁷ In the end, however, that was only 3.7%. The Dutch economy is now expected to recover quickly. In March 2021 CPB predicted growth of 2.2% for 2021.⁵⁸ In June the Dutch central bank, De Nederlandsche Bank (DNB), put that figure at 3.0%⁵⁹ and in August CPB forecast nearly 4%.⁶⁰ These expectations are nevertheless strongly dependent on the further development of COVID-19 (see Chapter 3). Economic development is obviously not the same for every sector. Moreover, this rapid recovery does not apply to many other countries. In low-income nations, recovery is lagging seriously behind.⁶¹

Governments have spent massive amounts of money to fight the pandemic and to keep their economies going. In 2020 alone, the national debt in the Netherlands increased by €46 billion to reach €423 billion. As a percentage of GDP, this is a rise from 48.7% to 54.5% (5.8 percentage points).⁶² For countries like the Netherlands and Germany, this increase is quite bearable. In nations that already had a high national debt, however, the proportionate increase has been far greater. In Greece and Italy, for example, debt as a percentage of GDP rose by 25 and 21 percentage points to reach 206% and 156% respectively. The coronavirus pandemic has thus magnified the existing economic disparities within the eurozone. In response, the European Central Bank (ECB) has further expanded the purchase programme which has been in place since the financial crisis. In addition to the existing asset purchase programme, an emergency pandemic scheme worth €1,850 billion has been set up.⁶³ At the same time, a European Recovery Fund amounting to €750 billion was also created. This represents a major new step, as it is the first time the countries in eurozone have taken on debt together.⁶⁴ Although the fund provides sufficient relief to make it through this crisis, it does not yet solve the underlying problem of diverging economies within the Economic Monetary Union (EMU), which the crisis again seems to have exacerbated.⁶⁵ The political choices which must be made with regard to the future of the euro remain open.⁶⁶

A great deal of support has also been provided at the national level, in the form of both *ex gratia* payments and loans. This raises difficult questions concerning the proper moment at which to start phasing out such

56 CBS 2020a.

57 CPB 2020.

58 CPB 2021a.

59 DNB 2021.

60 CPB 2021b.

61 World Bank 2021.

62 Eurostat Government Debt 2021, data code: GOV_10DD_EDPT1.

63 ECB 2020.

64 Segers 2021.

65 Schout and Van Riel 2020.

66 Boot and Stellinga 2021; see also Raad van State 2017.

support.⁶⁷ If that is done too quickly, it could lead to the Netherlands into economic difficulties despite everything that has gone before. Moreover, several sectors (e.g. events, arts and culture) are particularly vulnerable as they may not be able to operate at full capacity for a long time in the aftermath of the pandemic.⁶⁸ On the other hand, extending a period of support for too long could cause the economy to overheat or make companies overly dependent on the government. And an excessively dominant government role could undermine private responsibilities and slow down innovation.⁶⁹ In addition, corporate debt has increased further due to this support and the persistence of low interest rates⁷⁰ at a time when the private debt burden in the Netherlands is already relatively high.⁷¹ At the macro level, this has consequences for the volatility and resilience of the economy.⁷²

The pandemic has also brought international interconnections and dependencies into sharper focus. Global internationalisation and mobility gave the virus a chance to spread quickly. Moreover, the pandemic revealed the vulnerabilities and dependencies of international trade chains.⁷³ Although this initially appeared mainly in the area of medicines and personal protective equipment, the effects have since been felt in other areas as well. Many factories continue to face problems supplying certain products and components from abroad, including computer chips, electronic components, plastics and steel.⁷⁴ Europe and the United States have now taken steps to stimulate the production of some items (e.g. computer chips) on their own soil, but this does not resolve the issue of international dependencies.⁷⁵ At the same time, international trade chains are also becoming more a part of the international geopolitical system.⁷⁶

2.4 Sustainability

The world has been facing and continues to face a monumental challenge with regard to sustainability. The earth is heating up, resulting in an increase in weather extremes and a rise in the sea level. These changes are already visible.⁷⁷ Major sustainability challenges are also occurring with regard to biodiversity and the use of resources, land and water. Although news reports were dominated by COVID-19, many calamities that could be related to climate change occurred in 2020 as well.⁷⁸ The year is not yet over, but halfway through 2021 there have already been record-breaking heat waves and natural fires in the United States, Canada and southern Europe, while Germany, Belgium, the Netherlands and other countries have had to cope with serious floods. These events have also been linked to climate change.⁷⁹

67 Boot and Stellinga 2021; Claeys et al. 2021.

68 Travkina and Sacco 2020.

69 Arnoud Boot in an interview with NRC (Stellinga 2021). See also: Boot 2021a; Boot 2021b.

70 Overvest and Smid 2021; Engbersen 2021.

71 WRR 2019a.

72 IMF 2019; WRR 2019a.

73 Boot and Stellinga 2021; Sheikh 2021; Schippers 2021; WRR 2020b.

74 An analysis conducted by ING of figures from CBS reveals that around 18% of all manufacturers are experiencing production problems (ING 2021a).

75 Whalen 2021.

76 Sheikh 2021.

77 IPCC 2021.

78 UNDRR and CRED 2021.

79 Aravindan and Mackenzie 2021; Cornwall 2021; IPCC 2021.

The pandemic has not led to any substantial change in the challenge posed by sustainability. In nearly all affected countries, though, it did lead to temporary improvements in air quality.⁸⁰ At the beginning of the crisis, CO₂ emissions dropped significantly and air pollution was reduced, partly due to the massive decrease in international air (and other) traffic and industrial production.⁸¹ As the economies of various countries picked up and lockdowns alternated in different parts of the world, however, this effect largely disappeared again.⁸² In the long term, the Organisation for Economic Co-operation and Development (OECD) expects that the pandemic will have a small but possibly permanent downward impact on the levels of environmental pressures.⁸³

The sustainability effect was variable and sector-dependent. Emissions related to transport decreased sharply, while air pollution and the use of land and raw materials for agriculture were less affected.⁸⁴ Some temporary effects were also observed with regard to consumer products. Due in part to lockdowns and shop closures, people throughout the world ordered more products online than ever before, which also led to an increase in packaging materials and transport.⁸⁵ Logically, the pandemic was accompanied by an enormous increase in the consumption of single-use personal protective equipment (e.g. face masks) and testing materials.⁸⁶

As many countries shifted their priorities towards fighting the pandemic, policy (and sociopolitical debate) in other areas was put on the back burner for a shorter or longer period. This was apparently the case with sustainability as well, at least temporarily. Internationally, there was an increase in signals about deforestation, poaching and illegal fishing linked to loss of work and income and an increase in poverty and hunger, especially in low-income countries.⁸⁷ Moreover, economic recovery from the pandemic is expected to be slower in those countries and the protection of their biodiversity will constitute an even greater challenge in the coming years.⁸⁸ During the pandemic, some countries assigned less priority to the enforcement of environmental legislation.⁸⁹ This was also the case in the Netherlands, where the government postponed payment of the CO₂ levy due to the consequences of the pandemic.⁹⁰

A deeper question concerns whether the pandemic will affect the ways in which people cope with the issue of sustainability. It could be that it has made people realise how vulnerable they are, which might in turn increase the urgency of this and related themes.⁹¹ The hope has been expressed several times that the pandemic will create momentum to establish or accelerate a transition to a more sustainable future.⁹²

80 Corlett et al. 2020.

81 Andreoni 2021; Dellink 2021a; Dellink 2021b.

82 Dellink 2021b; PwC 2020.

83 Dellink 2021b.

84 Dellink 2021b.

85 Leal Filho et al. 2021; OECD 2020a.

86 Benson et al. 2021; Patrício Silva et al. 2021.

87 Brancalion et al. 2020; Lu 2020; Rondeau et al. 2020.

88 Diffenbaugh et al. 2020; The World Bank 2020.

89 OECD 2020b.

90 Markus 2020.

91 Cramer 2021.

92 EASC 2020; Rli 2020.

The European Commission has indicated that it would like to work towards accelerating the sustainability-related measures in its recovery policy.⁹³ In reality, though, it appears that recovery packages consider sustainability only to a limited extent and, where they do, the primary focus is on climate change and other important challenges (e.g. counteracting the loss of biodiversity) are not within their scope.⁹⁴

The pandemic has also demonstrated that, if no measures are taken, systemic vulnerabilities within a society can have a major impact on it.⁹⁵ In this respect, COVID-19 could be regarded as a dress rehearsal providing insights into what climate change, the exhaustion of natural resources and the loss of biodiversity could mean for society.⁹⁶ Finally, there is a more direct link between challenges relating to sustainability and the risk of pandemics.⁹⁷ Major ecological changes, including deforestation (e.g. in favour of agricultural land), the loss of biodiversity and global warming, increase the risk of zoonoses (diseases that can be transferred from animals to humans).⁹⁸ Due to its density of population and intensive livestock farming, the Netherlands numbers amongst the countries with a relatively high risk of zoonoses.⁹⁹ In addition, our nation contributes indirectly towards deforestation in other countries (e.g. through the import of soya-based animal feed) and thus towards a potentially higher risk of zoonoses.¹⁰⁰

2.5 Digitalisation

The pandemic has strongly accelerated the process of digitalisation.¹⁰¹ Due to the lockdowns, many people had to work from home and children and young adults were educated at home for long periods of time. Errands and shopping also shifted to the online domain.¹⁰² The Netherlands was relatively well-equipped for these changes. Together with a few other countries (e.g. Iceland and Norway), we are a European leader with regard to internet access.¹⁰³ At the same time, this development underscores how digital infrastructure has become a public infrastructure, such that accessibility is no longer a luxury but essential to everyday life. Nevertheless, access to digital resources is not a given for everyone.¹⁰⁴ People may be excluded from digital life for financial reasons or because of their limited ability to acquire digital skills.

COVID-19 has enhanced the visibility of the vast possibilities of digitalisation (e.g. with regard to care, distance learning and working from home)¹⁰⁵, but also highlighted its potential drawbacks. For example, digital environments offer far-reaching possibilities for monitoring others. Concerns have arisen with regard to whether universities and schools should be allowed to monitor students during examinations in

93 Verwest et al. 2020.

94 Mackenbach 2021; OECD 2020b, 2021.

95 WBCSD 2020.

96 Cramer 2021.

97 EASC 2019. Knottnerus 2020a; OECD 2020b; Tollefson 2020; UNEP 2020; WRR 2014; Gezondheidsraad 2004.

98 Bekedam et al. 2021.

99 Bekedam et al. 2021; Jones et al. 2008, cited in WRR 2014.

100 Bekedam et al. 2021.

101 Oldekop et al. 2020.

102 Online retail sales grew by 43.5% in 2020, a trend observed in other countries as well (ING 2021b; Schwab and Zahidi 2020).

103 Eurostat digital economy and society statistics – households and individuals, data code: ISOC_CI_IN_H.

104 CBS 2020b.

105 Chearavanont 2020; Hollander and Carr 2020.

order to prevent cheating¹⁰⁶, as well as with regard to the extent to which employers should be allowed to monitor their employees.¹⁰⁷

The increase in digitalisation also illustrates our dependence on a small number of large, mostly foreign tech companies. The use of cloud-based facilities and the communication platforms operated by these firms has accelerated. Within the educational context, for example, Google increased its market share by providing the Google Workspace for Education package free of charge.¹⁰⁸ In an advisory report published in April 2021, a working group from the Association of Universities in the Netherlands (vsnu) expressed concerns about the use of American cloud-based services with regard to issues including the privacy of students, uncertainty about the protection of personal data sent to the United States and the long-term financial consequences of these choices.¹⁰⁹ The Ministry of Education, Culture and Science (ocw) has also voiced concerns about educational institutions having little or no insight into what was being done with the metadata from these applications or the extent of their dependence on the terms and conditions of the tech companies providing the services.¹¹⁰ These issues call for reflection with regard to both dependence on tech companies and the ‘digital sovereignty’ of the Netherlands.¹¹¹

The pandemic has also revealed the limitations of algorithms. Digital systems trained according to historical data have difficulty processing disruptions properly.¹¹² At the beginning of the pandemic, for example, human intervention was needed within the supply chain in order to process the unexpected changes in the demand for face masks, hand sanitiser, toilet paper and suchlike items.¹¹³ Google Maps also had to adjust its algorithms in order to process the massive changes in mobility patterns.¹¹⁴

At the same time that work, shopping, education and care were moving into the digital domain, crime was doing the same. The pandemic thus had an effect on cybercrime, particularly with regard to online fraud and scams.¹¹⁵ This was also consistent with a longer-standing trend. Remarkable attacks were carried out on vital cyberinfrastructure¹¹⁶, too, further illustrating the international interconnectedness of this type of crime.

Digitalisation is also playing an important role in the fight against the pandemic, particularly with regard to testing, contact tracing and monitoring compliance with the preventive measures put in place. Initial expectations were high. In the Netherlands, the CoronaMelder (coronavirus alert) application was presented as an important route out of the lockdown. Its development took more time than initially hoped, however, and

106 Sheikh and Prins 2020; WRR 2019b.

107 Das et al. 2020. There are indications that the use of employee monitoring software has increased, although the figures that have been found vary greatly (see also: Storm van Leeuwen 2020; Van Zwieten 2021).

108 Van Est and Kool 2021.

109 vsnu Werkgroep Publieke Waarden [working group on public values] 2021.

110 OCW 2021.

111 Helberger and Eskens 2020; Moerel and Timmers 2020; Sheikh and Prins 2020. It also calls for reconsideration concerning the manner in which digital platforms are taxed (for more on this point, see Cnossen 2021).

112 Faraj et al. 2021.

113 Heaven 2020.

114 Faraj et al. 2021; Lau 2020.

115 Bijleveld 2021; Levi and Smith 2021.

116 Bijleveld 2021; Levi and Smith 2021.

ultimately it made only a modest contribution to combating the pandemic.¹¹⁷ Other countries also developed similar apps, which send ‘pings’ to close contacts of individuals who have tested positive for COVID-19, accompanied by a request to go into quarantine and have themselves tested. In the United Kingdom this led to a ‘pingdemic’, which caused major labour shortages in many sectors and even placed the food supply chain under pressure.¹¹⁸

Testing, tracing and vaccination result in the collection of enormous volumes of medical and other data on a substantial proportion of the population, by both the government and private parties. This entails risks concerning what will happen to that data, how long it will be kept, who will have access to it and how it will be secured. In the Netherlands, for example, it proved quite easy for unauthorised staff of a community health service (GGD)¹¹⁹ to download information about large numbers of individuals, including highly sensitive details such as social security numbers.¹²⁰ In February 2021 the External Supervisory Committee for Digital Support in the Fight Against COVID-19 argued that a greater sense of urgency was needed with regard to security and privacy in all data and registration systems related to the pandemic.¹²¹

Digital means were also used for monitoring compliance with the measures put in place. In Italy the government analysed location data from citizens’ mobile telephones in order to assess how many people were adhering to the lockdown rules.¹²² In China, Russia and some other countries, the authorities went even further, using facial-recognition software to track down people who were not abiding by the quarantine measures.¹²³ The pandemic has thus clearly revealed the two sides of digitalisation. On the one hand it has made it possible to take advantage of opportunities more quickly, but on the other it raises a number of important questions with regard to digital divides, digital surveillance, digital dependencies, privacy and so on.

2.6 Governance and law

In addition to having a major impact on society, the pandemic has had ramifications for governance and law.¹²⁴ It put the democratic rule of law to the test in an exceptional manner.¹²⁵ In a situation of great uncertainty, COVID-19 has confronted governments throughout the world with extremely difficult trade-offs between public

117 The combination of testing, regular contact tracing and the CoronaMelder app resulted in a decrease of 12.7% in the reproduction factor, but the app contributed a share of only 0.3% to this (Klinkenberg et al. 2021).

118 Klingert and Wickham 2021.

119 The GGD is a service every local authority service in the Netherlands must maintain, by law, to undertake a number of tasks relating to public health. These included the control of infectious diseases.

120 Verhagen 2021.

121 Begeleidingscommissie Digitale Ondersteuning Bestrijding COVID-19 2021.

122 Newlands et al. 2020.

123 DW 2020; Yang and Zhu 2020.

124 It is important to note that the COVID-19 pandemic has not been the only shock to confront public administration during the past year and a half. The results of the Parliamentary Commission of Inquiry on Childcare Allowances bruised both the self-image and the public image of the Dutch state as having a reliable and effective government (Kahn 2021). In the childcare allowances scandal, tens of thousands of parents were wrongly labelled as fraudsters for years, with major personal and financial consequences. The parliamentary commission found that “basic principles of the rule of law were violated” (Parlementaire Ondervragingscommissie 2020: 3).

125 Raad van State 2020; Oomen (2021) and Uzman (2021) refer to an institutional stress test.

health, individual liberties and other societal goals.¹²⁶ During weekly press conferences, the Dutch government announced restrictions on individual freedoms – in some cases mandatory, in others as urgent recommendations – of a kind that had not been experienced in the Netherlands for a long time.

This was a threefold ‘stress test’ for the democratic rule of law in the Netherlands: substantive, procedural and operational. In substantive terms, several matters were at stake. The first concerns the government’s duty (and even its constitutional obligation¹²⁷) to protect public health. In addition, the same government is required to respect and protect a series of liberties and rights, including freedom of movement, freedom of assembly, freedom of religion and the right to privacy.¹²⁸ It must further take into consideration the prohibition against discrimination and the principle of equality, while also respecting basic social and economic rights.¹²⁹ These fundamental rights are not absolute. They must function “alongside other values and interests within a balanced, internally consistent consideration”.¹³⁰ Moreover, fundamental rights can sometimes conflict with each other. Most of these rights may be restricted only if there is a legal basis for doing so, if there is a legitimate aim and if the restriction is appropriate, necessary and proportionate for achieving that aim.¹³¹ In considering whether a restriction is appropriate, necessary and proportionate, the government has considerable discretion, particularly with regard to the constitutional duty to protect public health.¹³² Ultimately, these are difficult choices, which require weighing the various values at stake. There is no simple manual for doing that.¹³³

The second component of the stress test is the question of whether the right procedures have been followed, in line with the democratic rule of law. The legal basis for the pandemic-response measures taken in the Netherlands has not always been clear, particularly at first.¹³⁴ Some were established through legislation and some in emergency ordinances, while others were issued as urgent government recommendations or desirable social norms.¹³⁵ The emergency ordinances issued through the security regions¹³⁶ were originally the most important legal instruments used¹³⁷, even though they are not subject to the same democratic control as laws enacted jointly by the government and parliament. It is also questionable whether these ordinances meet the constitutional requirement that any infringement of fundamental rights have a ‘statutory basis’, which in turn requires a ‘formal law’; that is, a law that has been adopted jointly by the government and the States General (i.e. the Senate and the House of Representatives). By contrast, the ordinances relied solely on

126 For example, see Engler et al. 2021.

127 Art. 22(1) of the Dutch Constitution; see also Art. 11 ESC and Art. 12(1, 2, sub c) IVESCR.

128 Uzman 2020.

129 For an overview of the fundamental rights at stake, see European Committee of Social Rights 2021.

130 Raad van State 2020.

131 Raad van State 2020; Uzman 2021. These substantial requirements are derived from international law (ECHR). The Dutch constitution has a somewhat different system of restrictions. For a discussion of this matter, see e.g.: Staatscommissie Grondwet Staatscommissie Grondwet (2010); Julicher (2020).

132 Raad van State 2020.

133 Claassen 2020.

134 Loof 2020.

135 Raad van State 2020.

136 Security regions are regional bodies responsible for fire services, disaster relief, crisis management and medical assistance. Every Dutch local authority is a member of such a region, with its mayor sitting on the board. This is chaired by the mayor of the largest member authority.

137 Julicher and Vetzo 2021; Raad van State 2020.

the emergency powers contained in Articles 175 and 176 of the Local Government Act. The Council of State has ruled that this is not the specific statutory regulation required for an infringement of fundamental rights, but that it is defensible for a short period of time if the infringements concerned are enacted according to this broader law.¹³⁸ In December 2020 a Coronavirus Act was introduced to provide a statutory basis for many of the measures concerned.

Another aspect of the process concerns temporary legislation. In the Netherlands, the temporary Coronavirus Act entered force on 1 December 2020. Since then it has been extended multiple times.¹³⁹ This law grants the government considerable leeway for measures that restrict liberty. During crises, temporary legislation is often introduced in order to provide the government with additional manoeuvrability that it lacks under normal circumstances. But previous experience shows that temporary legislation has regularly become permanent after the crisis in question has ended.¹⁴⁰ If a law is temporary and created for a particular crisis, the balance of interests may play out differently than in the case of legislation intended to apply for a longer period.

The third stress test is operational. The pandemic has confronted the Dutch government with a massive operational challenge. This has involved working across institutional boundaries, and the public sector has demonstrated great adaptive capacity.¹⁴¹ To a great extent, ongoing policy implementation and the provision of public services managed to continue despite the crisis and the lockdowns.¹⁴² This has resulted in a new appreciation of professionals, including those in the education and healthcare sectors.¹⁴³ There has also been criticism, however, and problems related to the necessary conditions for good public services have been brought into sharper focus. Despite repeated warnings about potential pandemics, important preparations had not been made. For example, GGDs were repeatedly unable to scale up the contact-tracing process sufficiently and in a timely manner.¹⁴⁴

Particularly at the beginning of the crisis, the security regions were important policy arenas. They formed a prominent starting point for the formulation and direction of policy, often in consultation with the Minister of Justice and Security. Although this arrangement worked efficiently, it also allowed for little democratic control over this manner of making policy and regulations. It also meant that the mayors of larger cities (who chair the security regions) played a more prominent role. This has shed light on the long-standing issue of the role of regional authorities in the Dutch system of public administration and their embedding within the nation's democratic structure.¹⁴⁵ COVID-19 has also presented local authorities with additional challenges.

138 Raad van State 2020.

139 Raad van State 2021. For a critical discussion of this point, see: Van Noort 2021; Voermans 2021.

140 One example is the Crisis and Recovery Act (CHW) of 18 March 2010, containing rules for the accelerated development and completion of public works and infrastructure projects. This law was in force until 27 February 2020, after which it became the General Environment and Planning Act. Although the CHW was intended to be in force for only a short period of time – it included a provision that it would lapse on 1 January 2014 – it was subsequently decided to extend its term.

141 Groeneveld 2020.

142 Schillemans 2021.

143 Noordegraaf 2020.

144 See also Mackenbach 2021.

145 Peters 2021; Peters et al. 2020; Studiegroep Interbestuurlijke and Financiële Verhoudingen 2020; Evaluatiecommissie Wet veiligheidsregio's 2020.

The enforcement of the emergency degrees sparked numerous discussions between members of the public and municipal enforcement officers (BOAs), and additional support was needed for vulnerable groups. In addition, the pandemic may eventually create a need for cutbacks at the local level at a time when local finances are already under considerable strain.¹⁴⁶

In the Netherlands as in many other countries, a reality is apparently emerging in which negative test results and/or vaccination become a precondition for access to certain activities. Under the Temporary Coronavirus Certificates Act, proof of vaccination or a negative test result can be required for access to sports and youth activities, cultural institutions, events, hospitality facilities and establishments of further and higher education. This development raises questions concerning substantive, procedural and operational issues. Vaccination and test certificates could potentially play a role in containing the virus, protecting health and allowing a safe reopening of society. Nevertheless, their use as a condition for access also touches upon other fundamental rights, including the right to privacy and bodily integrity. This has been leading to difficult discussions, not only with regard to the government but also affecting individual organisations that choose to impose such a requirement.¹⁴⁷ In procedural terms, questions have arisen concerning the fact that no purpose is specified in the Temporary Coronavirus Certificates Act.¹⁴⁸ It is more difficult to weigh up proportionality in the restriction of fundamental rights when its purpose is not made clear. In practice, a number of complicated operational issues have also come to light. Problems emerged with regard to testing capacity and the app used for access, for example, which made it relatively easy to commit fraud. The necessity of holding a test or vaccination certificate also led people to try to obtain certificates from the GGD without actually having been vaccinated.¹⁴⁹

2.7 Interim conclusion

This chapter charts the consequences the pandemic has had and continues to have in six areas: healthcare, social cohesion, the economy, sustainability, digitalisation and governance and law. It is clear that new¹⁵⁰ policy challenges have emerged. First and foremost, obviously, are those related to public health. Fighting a pandemic requires contact tracing, setting up large-scale testing, increasing healthcare capacity, developing vaccines and launching a massive vaccination campaign. Long COVID is posing a new challenge to the healthcare system, with considerable uncertainty regarding the ultimate scale, severity and duration of symptoms. The pandemic has also raised questions concerning the trade-off between health and other fundamental rights.

Some existing challenges have been exacerbated, too. They include the inequalities in education between the children of parents with different educational backgrounds. Differences in the labour market, too,

146 Peters 2021; Boogers et al. 2021.

147 In early 2021 the Health Council of the Netherlands and the SER published an advisory report on these difficult questions (Gezondheidsraad 2021; SER 2021c). This summer UNESCO issued a statement addressing the ethical issues surrounding test and vaccination passports (UNESCO 2021).

148 Februari 2021a. In the explanatory memorandum, the absence of a specific purpose is explained as follows: "The objectives being pursued through the use of test certificates depend on various factors, including epidemiological circumstances" (Kamerstukken II 2020/2021 35807, nr. 3 Memorie van Toelichting).

149 Wassens 2021; Kalkman 2021.

150 'New' is obviously relative in this regard. A number of these challenges have also taken centre stage during previous pandemics and crises.

between staff with permanent contracts and flexible workers, have been brought into sharp focus during the crisis. Moreover, people in vulnerable neighbourhoods seem to have been particularly badly affected as they have been suffering from the adverse effects of the pandemic in multiple respects, resulting in an accumulation of disadvantages. In addition, the acceleration of digitalisation brought about by the pandemic has increased the visibility and urgency of both its opportunities and its drawbacks. The situation has clearly highlighted the international dependencies associated with globalised trade, as well. This began with regard to personal protective equipment, but as the pandemic has dragged on it has also highlighted the effects of such dependencies in other areas, as is the case with the shortage of computer chips. Finally, the pandemic has shifted attention for other policy challenges into the background (at least temporarily). Several measures relating to sustainability have been postponed or relaxed, and regular healthcare has suffered serious delays.

The impact of the pandemic as described in this chapter is relatively short-term. The pandemic is not yet behind us, however, so we will not be able to document the true scale of many of the actual and potential effects we have described until more time has passed. The next chapter examines possible future developments and their potential repercussions for the Netherlands. The final chapter brings together these two tracks: what impact COVID-19 has had to date on the policy challenges that have been outlined and what further impact it could have in the years to come. That chapter concludes with the main recommendations for policy.

3 Future scenarios for the COVID-19 pandemic

The further development of COVID-19 is uncertain. From a societal perspective, many continue to pin their hopes on a ‘return to normal’.¹⁵¹ This is nevertheless not the only possible future for the pandemic. Since early 2020 there have been several moments of hope that it was largely over (e.g. after the first lockdown, after the second wave and when the first vaccines became available), but time and again the Netherlands (like many other countries) faced a new rise in infections, another wave or a new variant of the virus. In addition to its impact on health and healthcare, the resulting uncertainty is also having an impact on our entire society, thereby affecting government policy as a whole.

Scenarios can provide a way of coping with such uncertainties. To this end, the WRR and the KNAW have developed five scenarios for the future course of the COVID-19 pandemic. They are based on the article entitled ‘The coronavirus is here to stay – here’s what that means’, published in the scientific journal *Nature*.¹⁵² In that article, the authors discuss the results of a worldwide survey of more than 100 immunologists, infectious disease experts and virologists concerning how the coronavirus might develop. The basic scenarios have been supplemented and further fleshed out with insights from additional scientific and other sources¹⁵³, as well as from our own interviews (see Appendix A) and the collection of publications entitled *COVID-19: Expertvisies op de gevolgen voor samenleving and beleid* [COVID-19: Expert visions on the impact for society and policy].¹⁵⁴

For each scenario, four partially overlapping driving forces are outlined that seem likely to determine the development of the virus and the continuing societal impact of the pandemic. The first is the degree of immunity against the virus within the population due to recovery from infection and/or vaccination. The duration of that immunity is also an important factor in this regard. A second driving force is vaccination itself. This refers to the availability, accessibility, effectiveness and safety of vaccines. The third factor is the mutation or reintroduction of the virus. This concerns the possible emergence of new variants that could cause the virus to evade acquired immunity either in whole or in part, as well as the implications of such mutations for the contagiousness and pathogenic potential of the virus. Even after successful control, the virus could also be reintroduced from animal hosts or reservoirs.¹⁵⁵ The fourth driving force is human behaviour.¹⁵⁶ Observance of hygiene measures, interactions with other people and willingness to be vaccinated are all important to the

151 NOS 2021.

152 Phillips 2021.

153 Amongst others, Kissler et al. 2020; Coutinho 2021. Prof. R. A. Coutinho and Prof. R. A. M. Fouchier have verified the scenarios from an epidemiological and virological perspective.

154 WRR/KNAW 2021.

155 Considerable uncertainty continues to exist with regard to the role of animal reservoirs of SARS-CoV-2. Several wild and domestic animals have been shown to have antibodies and thus to have been in contact with the virus. Virologists are concerned that, in animals, the virus mutates into variants that evade the accumulated human immunity or that it could be reintroduced through different animal species in the future, after the current pandemic is under control. (Mallapaty 2021).

156 For example, human behaviour (e.g. respecting or not respecting measures) influences the number of infections and thus, in part, the development of the pandemic. Conversely, the pandemic also influences our behaviour (e.g. how we cope with threatening situations and uncertainties); for an overview, see Van Bavel et al. 2020. During a press conference on 9 October 2020, Dutch prime minister Mark Rutte emphasised that, “Only through our behaviour will we be able to curb the virus”. At the WHO press conference of 9 July 2021, coronavirus expert Maria van Kerkhove once again stressed that human behaviour – more specifically human mobility and the refusal to adhere to health and social restrictions – accounted for two of the four most important factors contributing to the new rise in the number of infections (see: www.youtube.com/watch?v=FYeYIoWViNQ).

development of this pandemic. Although policy choices obviously influence its course as well (we return to this point in 3.6), we have chosen not to include them as a separate driving force. Policy also plays an indirect role in the four factors just listed, as they cannot be separated from policy-related aspects (e.g. vaccination campaigns and the anti-COVID measures in force). Finally, we describe the pressing issues and policy implications for each scenario, with regard to both care and society in the broader sense. This is not intended as an exhaustive list, but as an outline to provide an idea of the implications of the different scenarios.

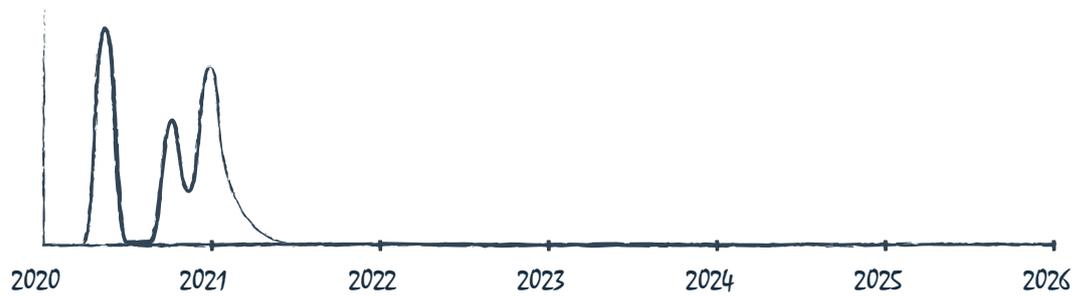
Five scenarios are elaborated in this chapter.¹⁵⁷

- Scenario 1: Return to normal
- Scenario 2: Flu+
- Scenario 3: External threat
- Scenario 4: Continuous struggle
- Scenario 5: Worst case

The scenarios are not about predicting, but about exploring possible future developments and their implications. They offer a way to make the complexity and uncertainty surrounding strategic policies more manageable and to increase possibilities for anticipatory action. In reality, elements of different scenarios could become intermingled or the Netherlands might move from one to another. Moreover, based on future developments, other scenarios might become conceivable. The scenarios should thus not be read as a menu of choices but as tools for strategic policy development. All concern only the development of COVID-19 and its variants; the simultaneous emergence of a new epidemic or pandemic due to another virus and the possibility of more than one type of crisis at the same time have not been considered. This does not mean that such a situation is inconceivable – consider, for example, the recent floods in the border region of Belgium, Germany and the Netherlands – only that it falls outside the scope of these scenarios.

¹⁵⁷ A pandemic occurs on a global scale. Although the scenarios in this publication have been outlined for the Dutch context, the driving forces described are comparable in many other affluent countries and so are their situations more generally. The scenarios outlined here are thus also more broadly applicable within that context.

3.1 Scenario 1: Return to normal



Fictive graph of the number of fatalities due to covid-19 in the period 2020–2026. This figure and the others in Chapter 3 are intended solely as illustrations visualising the scenarios presented (and the differences between them); they are not in any way predictions of the course of the pandemic.

Description

In this scenario, coronavirus is eliminated: the virus is no longer present in the population. Throughout the world, enough people are immune to the virus because they have been vaccinated and/or recovered from an infection. Effective and co-ordinated government action (national and global) has contributed to worldwide vaccination. The anti-coronavirus measures have been suspended. The Netherlands has ‘returned to normal’, in the sense that the virus no longer plays a role in daily life. The health-related, economic and social consequences of the pandemic will nevertheless remain visible for a longer time.¹⁵⁸

Main dimensions

Immunity. Throughout the world, sufficient people are immune due to (re)vaccination (possibly limited to at-risk groups) or recovery from infection.¹⁵⁹

Vaccination. Safe, effective vaccines are available, and they can be produced quickly and on a large scale. In addition to preventing infection and disease, vaccination prevents transmission of the virus to other people.¹⁶⁰

Mutation and/or reintroduction. The virus is not mutating in such a way that would allow it to evade the built-up human immunity and the functioning of the available vaccines, and it is ultimately eliminated. The possible introduction (or reintroduction) of zoonoses like SARS-cov-2 from animal hosts (e.g. pets, production animals) or reservoirs (e.g. bats, birds) continues to be a risk.¹⁶¹ In this scenario, however, because the virus has been eliminated in humans, the risk of reintroduction or the emergence of new mutations applies primarily to animals. For this reason, regular monitoring is conducted, with timely intervention within the animal population if the virus should reappear.

¹⁵⁸ According to the expectations of European experts, even if the number of infections were to decrease significantly, these consequences would continue to be tangible (see Iftekhar et al. 2021).

¹⁵⁹ The duration of vaccine-induced immunity can range from several months to several years. For COVID-19, however, the precise duration is not yet known (see Baraniuk 2021 for the status as of June 2021). Further research is being conducted in this regard, including by the RIVM in the Netherlands; see RIVM 2021b. According to an article published in *Science*, natural immunity (after recovering from an infection) could be present for at least 6–8 months in the majority of subjects (see Dan et al. 2021).

¹⁶⁰ Scientific research has demonstrated that the first-generation vaccines are also quite capable of drastically reducing the transmission of COVID-19 (for variants circulating at the time of the study) to third parties; see Levine-Tiefenbrun et al. 2021.

¹⁶¹ For example, see Bekedam et al. 2021.

Behaviour. People have confidence in scientific institutions and the government, and they adhere to the existing measures as long as they are needed. This means that the willingness to be vaccinated is high and that people comply with contact-restricting measures until the worldwide vaccination level is sufficiently high. This makes it possible for sufficient immunity to be built up within the population to slow down and eliminate the virus. People not wishing to be vaccinated adjust their behaviour and have themselves tested regularly. In this way, they contribute towards the containment of the virus.

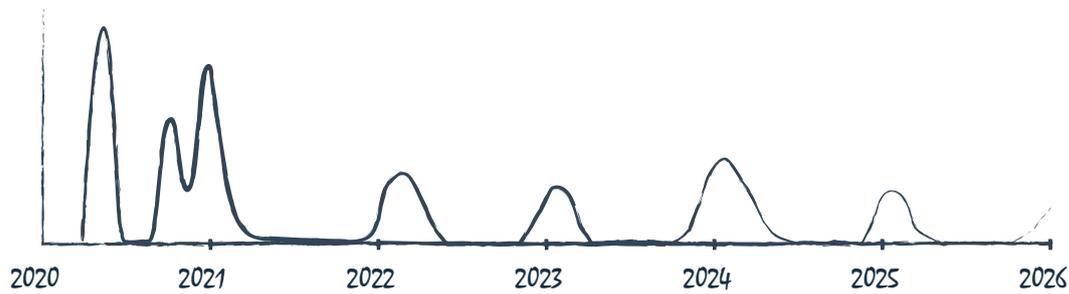
Pressing issues: recovery

General. In this scenario, the policy focus is on recovery. This refers to elimination of the backlogs in the healthcare and education systems as well as to economic recovery.

Healthcare. In this scenario, the medical sector is able to focus on catching up on treatments and operations that have been postponed and on providing care to patients with long COVID. Sufficient attention can also be devoted to the consequences the pandemic has had for mental health.

Society. Many everyday activities can 'return to normal'. More specifically, people are able to return to their workplaces, visit hospitality outlets and attend events, and it is once again possible to travel abroad without COVID-related restrictions. At the same time, certain aspects of the pandemic period that were experienced as positive (e.g. hybrid working, less business-related air travel) can be retained. Digitalisation plays a supporting role in this regard. Restrictive measures can now be phased out, and the temporary Coronavirus Act is not extended any longer. Attention is paid to mitigating the impact of school closures and addressing learning losses in education, which could possibly take years. The economic support measures can also be phased out. At the same time, the approach to the pandemic crisis is evaluated. This review includes examining how the lessons learnt could be used in the future to improve crisis preparation and to enhance institutional and individual resilience within society.

3.2 Scenario 2: Flu+



Description

In the second scenario, the virus becomes endemic.¹⁶² COVID-19 continues to circulate within the population, but the pandemic phase is over and it no longer poses much danger to most people. The annual figures concerning infection and death rates are stable (with limited epidemic variability), due to a combination of worldwide vaccination and built-up immunity. There is an annual COVID-19 wave, which can differ per year depending on genetic changes of the virus and the amount of immunity that has been built up within the population.¹⁶³ This wave (or some part of it) may overlap with the flu season, although it remains to be seen how the patterns of annual cold and flu viruses will relate to each other.¹⁶⁴ The recurring waves of COVID-19 might call for seasonal measures, and repeated vaccination may be necessary.

Main dimensions

Immunity. Most people who become infected experience few effects (i.e. are asymptomatic) or have flu-like symptoms. People are often infected before reaching adulthood¹⁶⁵, thus building up immunity such that they do not become seriously ill in the future. Everyone in the population is exposed repeatedly to the virus. For young and healthy people, this stimulates the immune response time and again, thereby building up their immunity over a longer time.¹⁶⁶ Amongst vulnerable groups¹⁶⁷, immunity wears off more quickly and there is less possibility of generating a good immune reaction¹⁶⁸. These groups are at greater risk of becoming seriously ill and dying from COVID-19.

¹⁶² The common comparison between a possible future endemic variant of COVID-19 and the seasonal flu is not entirely valid. Experts note that the endemic variant of the coronavirus has different characteristics and calls for measures other than those for the current flu; see Pitt 2021.

¹⁶³ In addition, weather conditions (seasonal effects) and human behaviour could have an influence on the scale of the wave of infections.

¹⁶⁴ Jones 2020. The summer of 2021 saw an epidemic of the respiratory syncytial virus (RSV), including in the Netherlands. This virus normally occurs in the winter (RIVM 2021c).

¹⁶⁵ Throughout the world, relatively few children are reported as having COVID-19. Moreover, children do not become as seriously ill and hardly ever require admission to hospital (RIVM 2021d).

¹⁶⁶ Longer immunity following infection with COVID-19 is possible (Dan et al. 2021).

¹⁶⁷ The groups especially susceptible to COVID-19 correspond with the most vulnerable groups for other infections, like influenza: the elderly (70+), people with underlying health conditions or obesity and people with compromised immune systems. Recent studies have also focused on ethnic disparities in the clinical outcomes of COVID-19. According to Sze et al. (2020), people of African or Asian origin are at greater risk of more serious illness than is the case for White people. As explained by Chaudhary et al. (2020) and by Frydman et al. (2020), this could be due to background-related disparities with regard to thromboembolic events. Further research is needed.

¹⁶⁸ For example, vaccines appear to be less effective in immunocompromised people (Couzin-Frankel 2021).

Vaccination. To begin with, everyone wishing to be vaccinated has been vaccinated. Throughout the world, people have built up sufficient immunity through vaccinations and recovery from infection. In addition, booster vaccinations are offered periodically to healthcare personnel and vulnerable groups. Repeated vaccination is performed on a broader scale if the immunity in the population proves to be of limited duration. There is continuous worldwide surveillance and monitoring of mutations (as is currently the case for the flu), in order to determine whether and when vaccines should be adapted.¹⁶⁹ A decline in immunity within the population could also constitute a second reason for revaccination, whether with the same type of vaccine or a different one. Vaccinations provide protection against serious illness after infection and they do limit transmission to others, although they cannot prevent it completely.¹⁷⁰ For this reason, the virus continues to circulate within the population.

Mutation and/or reintroduction. The virus continues to change through mutations, but not in a way that leads to any major changes in its transmission or pathogenic potential and not so rapidly that existing or modified vaccines cannot keep up with it. Throughout the world, different variants may be dominant in different countries, regions or continents. As is already the case with influenza, the World Health Organisation (WHO) issues recommendations each year concerning the composition of the vaccine cocktail in various parts of the world, based on the known mutations.¹⁷¹ Because the virus is also circulating amongst humans, surveillance of animal hosts or reservoirs focuses primarily on new variants that have not yet occurred in the human population and that could possibly pose an additional risk.

Behaviour. Society 'learns to live with the virus' and behaviour is adjusted as needed and depending on the season in order to contain each wave of COVID-19 more quickly, thereby limiting the potential damage. Throughout the world, the willingness to be vaccinated is sufficient to achieve stable immunity in large parts of the population during the first few years. People not wishing to be vaccinated adjust their behaviour and have themselves tested regularly. Willingness to receive repeat vaccinations is sufficient (particularly amongst vulnerable groups and healthcare workers) to limit serious illness and hospitalisations.

Pressing issues: recovery and upscaling

General. This scenario leaves room for recovery policy relating to healthcare, education and economy, along with a number of new, permanent policy challenges. The flu+ scenario calls for seasonal upscaling of healthcare capacity. If the annual wave of flu is accompanied by a wave of COVID-19 (either at the same time or partially overlapping), ICU capacity must be adjusted accordingly.

169 "From the other four coronaviruses, we also know that built-up immunity offers at least partial protection for only a limited time" (Coutinho 2021). In the summer of 2021 there were signs that the first-generation vaccines brought to market at the beginning of the year were less effective against new variants (for example, see: Hart 2021; Rabinovitch and Lubell 2021; Reimann 2021; Tada et al. 2021; Eguia 2021).

170 According to scientific research, the first-generation vaccines were also quite capable of strongly reducing the transmission of COVID-19 to third parties (Levine-Tiefenbrun et al. 2021). In the summer of 2021, the first signs emerged that a new variant could also be spread by vaccinated individuals (Steenhuysen et al. 2021).

171 For example, see WHO 2020a.

Healthcare. In this scenario, the seasonal upscaling of healthcare capacity is important. Should the need arise, a sufficient number of ICU beds must be available, staffed by personnel with appropriate expertise. At the same time, however, ways of reducing the need for such upscaling, including better treatments¹⁷² and the prevention of serious infections (e.g. through preventive measures) are also being explored. If the reserve capacity of the regular healthcare system is insufficient, it could cause delays in eliminating the backlog of regular care in addition to necessitating the postponement of routine operations.¹⁷³ Moreover, additional care is needed for patients with persistent physical and mental complaints related to long COVID.

This scenario also requires research-based consideration of the need to organise new rounds of vaccination, and at what frequency. Within the context of prevention, a healthy lifestyle (and thus a reduced risk of more serious illness due to COVID-19) could also help to reduce the burden on the healthcare system and so this factor is receiving more attention.

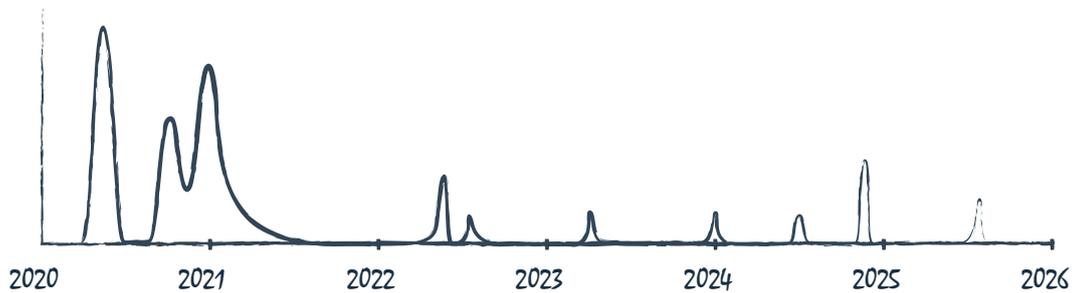
Society. In this scenario as in the previous one, many of the measures now affecting daily life can be phased out gradually. People can return to their workplaces, visit restaurants and attend events, and it is once again possible to travel. At the same time, certain aspects of the pandemic period that were experienced as positive (e.g. hybrid working) may be retained. Seasonal measures might be necessary (e.g. social distancing and face masks in crowded places). Although temporary, these measures could nevertheless have major consequences (e.g. for the cultural and events sectors). The situation in this scenario might also call for seasonal flexibility in working from home. This will not be possible, obvious or easy for everyone in society.

One recurring and important question in this scenario concerns when measures need to be scaled up and down, as well as the extent to which they can or should be imposed on society. This will always require trade-offs between different interests and fundamental rights. Although economic support measures are now being phased out, they might be needed again on a seasonal basis if certain sectors (e.g. events, arts and culture) are unable to operate at full capacity for part of the year.

172 Efforts are being made to develop more effective treatments (e.g. antiviral drugs and other supplementary medications), with the goal of ultimately making it possible to treat COVID-19 more quickly and effectively, such that its effects are milder, posing less of a burden on the healthcare system. Despite major strides in catching up in this domain of research, considerable progress remains to be made and the repertoire of effective anti-viral drugs before COVID-19 was highly limited (Dolgin 2021).

173 Since the start of the pandemic, the number of intensive-care nurses leaving the field has exceeded the number entering it, resulting in an apparent shortage of qualified personnel. This has led to a reduction in ICU capacity, as noted in an article published in the Dutch newspaper *De Volkskrant* (Piekartz and Hermus 2021).

3.3 Scenario 3: External threat



Description

The virus is under control in affluent countries that are able to afford vaccines or can develop and produce them themselves, and that have also been able to set up a systematic vaccination programme. By contrast, the virus is rampant in other countries, sometimes mutating into dangerous new variants.¹⁷⁴ This has disruptive effects on the societies and economies of those countries, with international implications as well. In this scenario, there remains a threat of reintroduction from countries where there is less or no vaccination and where the virus continues to circulate. Vulnerable groups and unvaccinated people are at greater risk of becoming seriously ill or dying from the virus. Reintroduction leads to regular outbreaks in the Netherlands and other affluent countries, and contact-limiting measures are therefore necessary. In the event of reintroduction with new variants, even vaccinated people could still be infected and possibly fall ill.¹⁷⁵

Main dimensions

Immunity. In the Netherlands, most people are immune due to vaccination or recovery from infection. The same is true in other affluent countries. This immunity can decrease with time, however, especially amongst vulnerable groups. In addition, new variants introduced from other countries could possibly escape the built-up immunity.¹⁷⁶

Vaccination. Vaccines are available primarily in affluent countries, where they are applied through systematic vaccination programmes. Less affluent countries have difficulty obtaining sufficient vaccines for their populations and/or they struggle with a low level of willingness to be vaccinated. Although vaccination provides protection against serious illness, it cannot fully prevent transmission.¹⁷⁷

Mutation and/or reintroduction. In countries where vaccination is limited or not taking off, the virus continues to circulate and mutations occur that lead to new variants. The virus is not becoming any less virulent and people

174 “The higher the number of SARS-CoV-2 infections worldwide is, the more chance there will be that variants will emerge for which the current vaccines offer reduced or no protection” (Coutinho 2021; Eguia et al. 2021).

175 This was the case in the summer of 2021, when it became known that the Delta variant (previously known as the ‘Indian variant’) could also infect vaccinated people (see: Keulemans 2021; Hacısuleyman et al. 2021; Jia and Gong 2021; Kroidl et al. 2021).

176 Coutinho 2021; Hart 2021; Rabinovitch and Lubell 2021; Reimann 2021; Tada et al. 2021; Eguia 2021.

177 Steenhuisen et al. 2021.

can become seriously ill if they have not built up immunity. The more the virus can circulate, the more new variants can emerge, including types able to evade existing vaccines. The introduction of such variants to the Netherlands constitutes a risk. In addition, the possible reintroduction of the virus or the introduction of new variants from animal hosts or reservoirs is a point requiring attention. Where possible, worldwide surveillance is conducted in order to monitor reintroduction and new variants.

Behaviour. In the event of local outbreaks, human behaviour will exert a major influence over the course of the infections. Because the virus is under control in affluent countries, a false sense of security might arise and the desire to 'return to normal' could increase substantially. Conversely, the regained sense of security could provide additional motivation to adhere to measures during local outbreaks, in order to prevent larger ones. Internationally, there are 'safe' and 'unsafe' countries, even though closing or strictly monitoring borders poses a massive practical challenge. A real chance of reintroduction therefore remains.

Pressing issues: international travel and trade

General. The priority in this scenario has to do with travel and international trade. Because the virus continues to mutate throughout the world, and because reintroduction could cause problems even in countries where vaccination is widespread, the focus is on the strict control and demarcation of those nations where the virus is under control. This may be at odds with the free movement of persons agreed upon within the European Union.¹⁷⁸ If global co-operation concerning vaccination policy can be established, a transition to a more favourable scenario might occur. If such co-operation proves impossible, a chance will remain that new and risky variants will gain a foothold in the Netherlands and other 'safe' countries as well.

Healthcare. This scenario calls for irregular and temporary upscaling of healthcare capacity in the Netherlands during outbreaks due to reintroduction from abroad. The need to do so could possibly be limited to local or regional levels, on the condition that new infections are signalled in a timely manner. Enforcing a strategy of 'intensive containment' requires effective source and contact tracing in addition to the monitoring of adherence to quarantine rules. Outbreaks can cause delays at the local or regional level in eliminating backlogs in regular healthcare, in addition to requiring the temporary resuspension of routine operations.

Society. If a localised outbreak occurs due to reintroduction, temporary local measures will be needed. Their success will play a decisive role in determining the ultimate scale of the outbreak. The uncertainty and unpredictability of localised outbreaks could impose a strain on the base of trust and support within society that is needed to sustain these measures. Groups who are already vulnerable in the education system or the labour market will run a risk of being affected repeatedly.

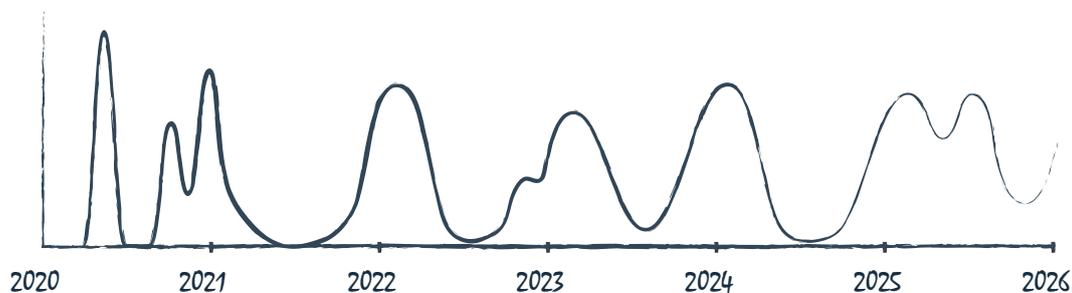
In this scenario, international travel is not possible without restrictions. Free travel is possible only within a zone of safe countries where the virus is under control. Outside this, travel cannot be taken for granted and

¹⁷⁸ Art. 21 Treaty on the Functioning of the European Union (TFEU).

could possibly be subject to conditions or control measures. This may lead to social and political discussions concerning the situations in which and the conditions under which international travel to high-risk areas is considered acceptable or necessary. These could include business and economic interests, as well as family matters.

International trade and commercial traffic continue to be disrupted for a long time. Although digitalisation could offer a partial solution for international working, persistent manufacturing and supply delays in producing countries raise the threat of longer delivery times for certain products, which cannot be resolved directly at the national or local level. This is likely to bring the discussion of dependencies in international trade more into focus. For a nation as dependent on imports and exports as the Netherlands is, this is a very important issue.

3.4 Scenario 4: Continuous struggle



Description

In this scenario, COVID-19 continues to circulate, causing large numbers of infections and a substantial amount of illness because vaccines are not sufficiently effective (or are not effective for a sufficiently long period). Vaccinations are being administered throughout the world and new vaccines are being developed, but it remains a cat-and-mouse game. New variants of the virus emerge that can cause serious illness, especially amongst vulnerable groups and unvaccinated people. Contact-limiting measures (e.g. working from home and following online education) take on a permanent character, and access controls, the use of coronavirus alerts and quarantine regimes play a prominent role in daily life.

Main dimensions

Immunity. Immunity following vaccination or recovery from infection wears off quickly.¹⁷⁹ The immune system is not able to react as effectively to new variants of the virus as it does to the old ones.¹⁸⁰

¹⁷⁹ Coutinho 2021; Hart 2021; Rabinovitch and Lubell 2021; Reimann 2021; Tada et al. 2021; Eguia 2021.

¹⁸⁰ Also referred to as 'antigenic imprinting', 'original antigenic sin' or the 'Hoskins effect', this is a sort of bias of the immune system in which old antibodies are deployed against new variants instead of new ones being developed (Vatti et al. 2017).

Vaccination. Vaccines are available, but the virus changes through mutations more rapidly than new ones can be developed, produced and rolled out. Those that are available were developed using different technologies, some of which can be modified relatively easily and quickly (mRNA vaccines), whereas with others this requires more time or might be less successful.¹⁸¹ New vaccines provide temporary protection against serious illness but do very little to prevent viral transmission.

Mutation and/or reintroduction. Mutations to the virus quickly and repeatedly generate new variants against which existing vaccines are not sufficiently effective. In this scenario, the possible reintroduction of the virus from animal hosts or reservoirs plays a subordinate role, given the extent to which it is already circulating throughout the human population. The priority given and the capacity available to monitor the virus in animals come under increasing pressure, thereby increasing the risk of delays in the identification of new variants from this direction.

Behaviour. The uncertainty and decreasing effectiveness of vaccination severely tests the willingness of people to be vaccinated. On the one hand this may lead to a decrease in confidence in vaccines and preventive measures, with a part of society feeling that there is no point in being vaccinated again and again; on the other, the situation in this scenario may lead to a race amongst a part of the population to be the first to secure new, possibly more effective vaccines. Moreover, partial social isolation may arise as affluent people, in particular, retreat into their own safe 'bubbles'.¹⁸²

Pressing issues: COVID-19 care versus society

General. The focus in this scenario is the trade-off between healthcare related to COVID-19 and other societal objectives. As the pandemic drags on, balancing various public tasks with fundamental rights becomes more complicated. Other aspects of society are also at risk of disruption. Deficiencies in education continue to increase, and the economy is disrupted by persistent supply-chain problems and a lack of workers, who are unable to do their jobs because of illness or quarantine obligations.¹⁸³ Although digitalisation can provide some relief in order to keep society and the economy running, this is accompanied by simultaneous increases in dependence on big tech and in cybercrime.

The contact-limiting measures are more difficult to maintain now that the situation is dragging on and there is little prospect of an end to the pandemic. The repeated upscaling and downscaling of preventive measures increasingly raises the question of whether trade-offs can continue to be made in the same way and whether there is still enough resilience within various groups (e.g. certain age groups) to cope with it all.¹⁸⁴

181 With vector-based vaccines, for example, this could be because recipients may become immune to the vector used, thus failing to achieve the desired immune response (Hewings-Martin and Cohut 2021; King 2020; WHO 2021).

182 In this regard, consider the mechanism that Putnam (2007) refers to as 'hunkering down'.

183 In 2006 De Nederlandsche Bank wrote about how a substantial flu pandemic could lead to scarcity and higher prices due to the non-availability of workers. On the other hand, energy prices decrease due to a reduction in demand. In structural terms, the composition of the working population could change and mass bankruptcies might lead to permanent damage to and pressure on the financial system (DNB 2006). In the summer of 2021 a 'pingdemic' occurred in the United Kingdom, during which stores had to close or cope with empty shelves because workers were required to quarantine following an alert from the coronavirus app indicating that they might have been in contact with an infected person (see e.g. FD 2021).

184 RVS 2020.

This discussion is further complicated by the fact that this scenario could have a significant negative impact on public health, while imposing additional demands on the healthcare system.¹⁸⁵

Healthcare. COVID-19 rises on the list of causes of death and the number of patients with long-term complaints (long COVID) increases steadily. The current temporary decline in healthy life expectancy could become permanent.¹⁸⁶ The healthcare system faces the continuous multiple challenges of delivering regular treatment, eliminating backlogs, ramping up mental health services and providing care related to COVID-19. It is further possible that, in this scenario, the government will promote healthy lifestyles more compellingly as a means of reducing pressure on the healthcare system.

Society. In a scenario in which a continuous battle is being waged against COVID-19, the trade-off between protecting public health and the broader societal impact of the pandemic measures is permanently on the table. Despite its relevance, the task of producing a social cost-benefit analysis is not simple.¹⁸⁷ This is because of methodological considerations as well as the presence of widely differing political and social perspectives. A significant and growing group of people suffer from long COVID and experience great difficulty in continuing to participate in working and social life.¹⁸⁸ In this scenario, there is a realistic chance of chronic economic stagnation or even recession. Given that economic support measures are not tenable in the long term, choices have to be made: which sectors should be kept afloat and which should be abandoned to their fate? Flexible workers and economic sectors labelled as ‘non-essential’ are likely to be the most seriously affected in this regard. The lack of a positive outlook places considerable demands on societal resilience, leading to an increase in loneliness and depression and perhaps even in polarisation.¹⁸⁹ Social cohesion deteriorates.

185 “It is entirely conceivable, certainly in the somewhat longer term, that the indirect consequences of this damage to the health of the Dutch population will be great, in the form of a less promising progression of average health and/or an increase in social-economic health disparities” (Mackenbach 2021). For the association between COVID-19, health disparities and recovery policy, see e.g. Marmot et al. 2020.

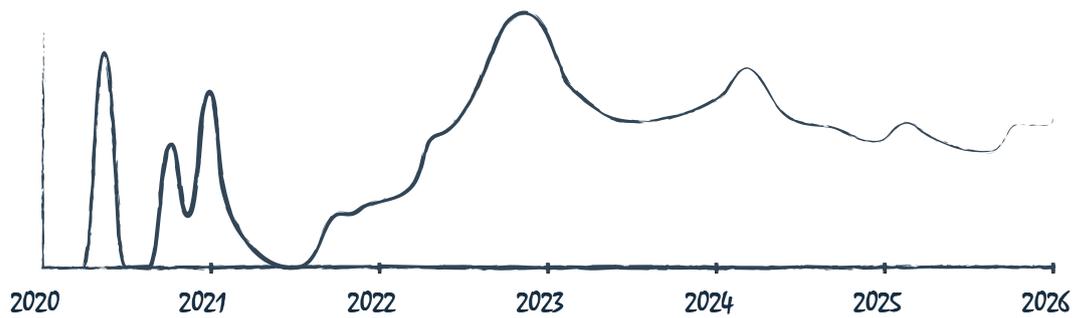
186 Meade 2021.

187 Mackenbach 2021; Helsloot 2021.

188 Longfonds 2021; Meade 2021.

189 “Disinformation breeds in uncertainty concerning the factual status of information and distrust in experts/science. The delegitimising discourse of disinformation has the strongest disruptive effects when it can successfully build on an increasingly more relative truth and distrust in the establishment. Within this context, it can be argued that future inconsistencies and factual discrepancies about vaccines and shifting messages about reopening society could fuel belief in disinformation and conspiracy theories” (Hameleers and Vliegthart 2021).

3.5 Scenario 5: Worst case



Description

The virus continues to circulate throughout the world, and the number of fatalities it causes increases.¹⁹⁰

People who have recovered from infection or been vaccinated are immune for only a limited time, and they are soon susceptible to new variants. Vaccines are available, but the virus changes more rapidly than these can be adapted, produced and rolled out. After a number of years, the virus begins to spread less vigorously and the pandemic may ‘die out’. Until then, however, severe outbreaks may occur for an undetermined period of time so that essentially everyone is at risk of serious illness or even death. Society and the economy experience a long period of severe disruption.

Main dimensions

Immunity. Immunity following vaccination or recovery from infection wears off quickly, and it seems impossible to vaccinate the entire population continuously.

Vaccination. Vaccines are available, but the virus mutates faster than the time needed to develop them and vaccinate the population. All available vaccines are being administered with the reasoning that ‘every little helps’. Meanwhile, research is being conducted as quickly as possible to develop new vaccines against the virus and new treatments for COVID-19, but these efforts routinely require more time and money than is available.

Mutation and/or reintroduction. The virus continues to change, and the new variants cause more fatalities. Vulnerable people and those who have not been vaccinated are at a high risk of dying from COVID-19 infection, but the chances of serious illness and death are also increasing for healthy people. In this scenario, the possible reintroduction of the virus from animal hosts or reservoirs plays a subordinate role to the danger posed by the variants already present within the human population. This possibility does not therefore receive much attention.

Behaviour. In the worst-case scenario, people’s focus largely narrows down to the individual level: ensuring the safety of family and friends and securing certain vital facilities, with more opportunities for those who can

¹⁹⁰ Viruses generally become less deadly over time, but we cannot rule out the possibility that SARS-CoV-2 could be an exception in this regard (see e.g. *The Economist* 2021); The Scientific Advisory Group for Emergencies (SAGE) in the United Kingdom has also not ruled out a more dangerous variant (Haseltine 2021; SAGE 2021).

afford more. Affluent groups pay large amounts of money for new vaccines and treatments. Vulnerable groups in society are forced to perform the riskier jobs, which places them at additional risk of infection.

Pressing issues: survival

General. In this scenario, the focus is on survival. It demands difficult choices, for the healthcare system as well as for society as a whole. Given that public funding is not inexhaustible, decisions have to be made about who receives more, less or no support. Society and the economy experience a long period of severe disruption, not only in the Netherlands but also in the rest of Europe and beyond. Some sectors become barely viable in economic terms (e.g. hospitality, events, arts and culture, tourism), resulting in an impoverished society. International trade is severely disrupted, leading to growing shortages and high prices for consumer products and food.

Healthcare. In this scenario, healthcare capacity is routinely inadequate. ICUs remain overburdened and the backlog in regular healthcare continues to grow. There are shortages of ICU beds, qualified personnel, personal protective equipment, medicines and medical equipment. In fact, there is a realistic risk of a 'code black' situation, which would require difficult ethical choices concerning who will and will not be treated in the ICU. Discussions about vaccines and COVID-19 treatments overshadow most or all other issues in the healthcare system, whilst chronic illness related to long COVID becomes more prevalent and the damage due to other health problems further increases due to the suspension of screening programmes, diagnostic delays and the postponement of treatments and operations. The number of people with mental or psychological complaints continues to rise, and there are long waiting lists for mental health care.

Society. In this scenario, society could potentially go into 'lockdown' for an indefinite period (multiple years). Physical social contacts continue to be highly restricted and many people do not leave their homes except for necessary activities. The availability of modern digital communications and the ability to use them become crucial to functioning in the 'lockdown society'. Those who are able to afford it live in their own digital and socially distanced bubbles, working and studying from home. Others are at greater risk. For example, those who must continue to provide care outside the home or perform physical production work. The diversity of lockdown conditions for various groups widens the social divide, with a risk of increasing polarisation or even radicalisation. Prolonged online education and lack of physical contact with their peers generate chronic deficits in children's learning and social development, possibly leading to irreversible mental problems in the younger generations. Economic support is no longer tenable and so there is a threat of chronic economic and social disruption. Government policy focuses solely on core tasks and maintaining social order. Social cohesion is severely strained.

3.6 Worldwide vaccination and willingness to adhere to preventive measures

In this chapter we have outlined five different scenarios for the possible future development of the COVID-19 pandemic. Although its further course is uncertain, these scenarios can be used to improve our ability to anticipate various possible future developments. Before discussing other areas requiring policy attention in the concluding chapter, we first turn to two factors from the scenarios discussed that need particular consideration: worldwide vaccination and the willingness of people to adhere to measures intended to contain the spread of the virus. These two factors will play a crucial role in determining which scenario

ultimately unfolds, although others, chance amongst them (e.g. with regard to mutations), will be important as well.

First, the necessity of worldwide vaccination. This is crucial to the further development of the pandemic.¹⁹¹ The director-general of the WHO, Tedros Adhanom Ghebreyesus, has pointed to the danger that high-income countries might think that the pandemic is over once a sufficient level of vaccination has been achieved within their own populations.¹⁹² As repeatedly stressed by the WHO, however, no-one is safe until everyone is safe.¹⁹³ As long as there are still countries where the virus is able to spread freely, there will be a greater risk of the development and spread of a virus variant that could escape built-up immunity or that is more contagious or pathological. This would also increase the risk that the Netherlands and other countries will find themselves in the more severe scenarios.

The first requirement for worldwide vaccination is the availability of safe and effective vaccines. The world reached this milestone much more quickly than had been expected.¹⁹⁴ On 11 December 2020 the United States Food and Drug Administration (FDA) approved the Pfizer/BioNTech vaccine, and the European Medicines Agency (EMA) followed suit on 21 December 2020. Various other vaccines would follow. The development of new variants could necessitate new vaccines or modifications of current ones. As of mid-summer 2021, however, the existing vaccines still appeared to be providing good protection against serious illness caused by extant variants. At the same time, we have seen analyses (including by SAGE) that warn of possible decreasing effectiveness and duration of protection in respect of new variants, so continuing investment is needed for research in this area.¹⁹⁵

A challenge of at least equal magnitude concerns the production, distribution and application of vaccines in sufficient quantities. In the Netherlands and a number of other high-income countries, the vaccination programmes are now proceeding well: enough supplies are available to vaccinate everyone 12 years of age and older who wishes to be vaccinated. It should be noted, however, that vaccination rates – including those in the Netherlands – have not yet reached the targets set by governments.¹⁹⁶

The greatest challenge of all, however, is worldwide vaccination. Approximately 11 billion doses are needed in order to vaccinate 70%¹⁹⁷ of the global population.¹⁹⁸ As of 25 August 2021, about 5 billion doses had been

191 Mackenbach 2021; Murray and Piot 2021.

192 WHO media briefing on COVID-19, 7 July 2021, available at: www.youtube.com/watch?v=JThz6cjtqLL.

193 WHO 2020.

194 Thompson 2020.

195 SAGE 2021.

196 As of 25 August 2021, 62% of the population of the Netherlands was fully vaccinated and another 7.5% partially vaccinated (see: https://ourworldindata.org/covid-vaccinations?country=OWID_WRL).

197 It was initially estimated that a vaccination rate of between 60% and 70% would be sufficient to bring the virus under control (Aschwanden 2021). However, the actual rate required is dependent on the emergence of new variants. According to the RIVM, herd immunity will not be achieved until 80% of the population is immune to the coronavirus. This means that eight out of ten people in the Netherlands, including children, would need to be vaccinated or to have recovered from an infection. This percentage applies to the Delta variant, which is currently dominant in the Netherlands (see RIVM, as cited in Van Dongen and Van Soest for *Het Parool* 2021). The scientific advisers to the French government are already pointing to a necessary vaccination rate of 95% (see France24 2021).

198 Padma 2021.

administered, 80% of them in high-income and higher middle-income countries. At that time, only 1.4% of the population in low-income countries had received one dose of a vaccine. Covax was established¹⁹⁹ to provide low-income countries with access to vaccines.²⁰⁰ This organisation is aiming to ensure that around 30% of the world's population has had a vaccine by the end of 2021. At the current pace, however, it is expected that this goal will not be achieved until well into 2023.²⁰¹ Hans Kluge, the European director of the WHO, has stated that it is “painful to see that many Western countries are now starting to consider vaccinating children, while even doctors and nursing personnel in many poor countries have not yet received any shots”.²⁰² This socioethical discussion is becoming even more heated now that several countries have begun a third round of ‘booster’ shots, with more considering following suit.²⁰³

Worldwide vaccination is a complex challenge involving significant logistical, political and ethical issues.²⁰⁴ One of these concerns whether patents associated with coronavirus vaccines should be suspended.²⁰⁵ In this regard, it is interesting to note that, although the emergency accompanying the pandemic has led to restrictions on fundamental rights in a large number of countries, no restrictions have been imposed on patent rights. Discussion on this point is ongoing within the World Trade Organisation (WTO). In addition to sufficient availability of a safe and effective vaccine, equal access to vaccines within countries is an issue that requires attention. In some countries and conflict zones, access to vaccines is difficult for a variety of reasons.²⁰⁶ The issue of willingness to be vaccinated is also at play throughout the world.²⁰⁷ Stagnation in the vaccination rate due to reluctance to be vaccinated is problematic in terms of the favourable course of the pandemic, and it raises many ethical, legal and practical questions concerning justified and effective methods of raising that rate. These issues include the development of effective targeted communication and questions concerning the effectiveness and legitimacy of coercion (direct or indirect) or even mandatory vaccinations.²⁰⁸

Achieving worldwide vaccination is not a simple task, but it is a crucial challenge. And one in which the Netherlands could play a leading role (e.g. in Europe), not only for the sake of the welfare of people in other countries²⁰⁹ but also out of enlightened self-interest. As long as worldwide vaccination has not been achieved, the risk of new variants emerging will remain high. Moreover, there is the recurrent issue of whether the

199 Overview of vaccinations, Our World in Data, available at: https://ourworldindata.org/covid-vaccinations?country=OWID_WRL.

200 COVAX (full name: COVID-19 Vaccines Global Access) is a co-operative arrangement between the World Health Organisation (WHO), the Vaccine Alliance (GAVI), the Coalition for Epidemic Preparedness Innovations (CEPI) and UNICEF. This organisation focuses on the development, production and worldwide availability of COVID-19 vaccines, treatments and tests.

201 Padma 2021.

202 Van Ooij 2021.

203 Maxmen 2021b; Nature 2021; United Nations 2021b.

204 See, for example, Knottnerus 2021a.

205 South Africa and India have submitted a request for such a suspension to the WTO (Usher 2020). For the debate in the Netherlands, see e.g.: Februari 2021b; Chahim et al. 2021; Coutinho and De Swaan 2021; Knottnerus 2020b; Knottnerus 2021b; Knottnerus 2021c. For a discussion of this debate, see also Van Overwalle 2021.

206 In some countries (e.g. Tanzania, Madagascar, Brazil), preventive measures or a vaccination campaign have only recently been initiated (see: Mwai 2021; Africanews 2021; Filho and Feil 2021). Other countries (e.g. North Korea and Turkmenistan) have not yet reported any official COVID-19 cases (see: BBC News 2021; WHO 2021; Reuters 2021). Moreover, in some areas (e.g. Syria, Myanmar, Afghanistan, Haiti), conflicts or an accumulation of crises are making vaccination difficult (see: Lieberman 2021; Zard 2021; Devraj 2021; Laing 2021).

207 De Figueiredo et al. 2020.

208 Knottnerus 2018.

209 Beyrer et al. 2021.

current vaccines do (or will continue to) offer sufficient protection against such new variants. This is in addition to questions concerning when booster vaccinations will be needed. Therefore, the issue cannot be resolved through temporary, *ad hoc* donations of vaccines. Systematic action and global co-operation – political, practical and scientific – are needed.

A second factor from the scenarios that requires particular attention is the role of human behaviour in limiting viral transmission. Alongside worldwide vaccination, the limitation of viral transmission through interpersonal contact could make an important contribution to reducing the risk that the Netherlands and other countries will find themselves in a more severe scenario. The extent to which measures aimed at containing the spread of the virus are in force and the extent to which people adhere to these measures will largely determine the success (or the lack thereof) of efforts to fight infections. Surveys conducted by the RIVM indicate that there is a large base of support in the Netherlands for such measures as hand-washing, social distancing and avoiding crowds, but less so for measures intended to limit social contacts.²¹⁰ Moreover, the existence of ‘a base of support for’ is not the same thing as ‘complying with’, and these measures will not be sufficiently effective if a substantial proportion of the population does not adhere to them. The legitimacy of desired behavioural changes is also determined in part by the extent to which the manner in which they are communicated is perceived as truthful, fair and reasonable. This also means that the government and key authority figures themselves must consistently act in accordance with their own instructions. Citizens are keenly aware of instances when this is not the case, and they are likely to react with deep indignation. This can lead to a situation in which they no longer follow the instructions themselves.²¹¹

People are also more willing to comply with measures if the strategy behind them is clear and systematic, if government communication is customised for different target groups and if interpersonal trust and confidence in institutions and government are robust.²¹² At the same time, there are limits to what can be asked of society, particularly in the long term. Far-reaching measures affecting daily life are increasingly difficult to maintain over an extended period, not so much due to an unwillingness to comply as to an inability to do so.²¹³ For this reason, too, it is important for measures aimed at modifying behaviour to be part of an integrated policy approach, and for knowledge and expertise on communication and behaviour to be included in the advisory and decision-making process. We return to this point in the next chapter.

210 RIVM 2021e.

211 Tiemeijer 2020b.

212 Bargain and Aminjonov 2020; Oksanen et al. 2020; Pak et al. 2021; Visser and Engels 2020.

213 Tiemeijer 2020a; Petherick et al. 2021.

4 The path forward: The need for robust policy

After a year and a half of the coronavirus pandemic, the Netherlands is now at a crossroads. The vaccination rate is substantial, and it continues to rise. The general perception is that the country has put the worst phase of the pandemic behind it. At the same time, however, many uncertainties remain with regard to its further course and its future impact on society and in other areas (e.g. the climate and international economic development). This situation underscores the importance of robust policy. Two points are particularly important in this regard, and they are also the main messages of this advice.

The first is that the government and society should be well prepared for different scenarios. In addition to being primed to cope with different possible virological developments, this also means being ready for the implications of such developments with regard to broader policy challenges. Although the course of the pandemic cannot be predicted, the government and society can prepare themselves by thinking through various scenarios in advance and taking the necessary precautions so that they are not caught off-guard by developments.

The second point is that the government should adopt an integrated approach. Combating the pandemic and its consequences must be done in conjunction with responses to other policy challenges facing society. In the policy-development process, a broad approach of this type requires more than virological and medical knowledge alone. It is at least equally important that the government have adequate behavioural and social-scientific knowledge and insight. A clear role for such knowledge should be included wherever advice and decision-making take place.²¹⁴ Moreover, like medical and scientific know-how, knowledge of this kind should not be based solely on theoretical insights or developed within the context of a few field experiments (as was the case with the recent ‘field labs’ in the Netherlands), but also grounded in sound scientific research and expertise.²¹⁵

The primary objective of this advice is to outline the broad impact of the pandemic. In addition to having consequences for the healthcare system and people who have been directly affected by the virus, COVID-19 and the efforts taken to fight it have had broad repercussions throughout society. In Chapter 2 these were described in terms of six themes: health, social cohesion, the economy, sustainability, digitalisation and governance and law. Students were unable to attend school for many months, but although this affected them all, the impact was particularly severe for those who were already disadvantaged. Some self-employed and flexible workers thrived during the first year of the crisis, while others proved especially vulnerable. The Dutch economy experienced a sharp decline. Overall it has recovered quickly – thanks in part to extensive government support packages – but some sectors have been hit hard over a longer period. Amongst these are arts and culture, the events sector and the travel industry. It remains unclear whether they will ever fully recover or, if they do, how quickly. It is also true that many other countries are in a less favourable economic situation than the

²¹⁴ See also WRR 2017.

²¹⁵ Laboratory knowledge should also be enriched with other types of knowledge in order to ensure that it will truly work in the real world (B. van der Meulen 2021).

Netherlands. Although the issue of sustainability was in danger of fading into the background, the summer 2021 floods in north-west Europe and the recent IPCC report have put it firmly back on the agenda. The pandemic has precipitated an acceleration in digitalisation, in the process revealing both the opportunities and drawbacks of that trend. Finally, the pandemic has been a massive stress test for public administration and the democratic rule of law. In short a crisis such as this pandemic has pervasive implications for society as a whole, both nationally and internationally.

Chapter 3 presented five possible scenarios for the further course of the pandemic, based on scientific literature, interviews and expert consultation: (1) Return to normal, (2) Flu+, (3) External threat, (4) Continuous struggle and (5) Worst case. Such scenarios can provide important input for strategic policy choices in a situation that involves many uncertainties. We then identified two points specifically related to COVID-19 that will be crucial in the near future in limiting the risk of finding ourselves in one of the more severe scenarios, and so require particular attention: worldwide vaccination and human behaviour. In this chapter we take a broader look at the policy challenges facing the Netherlands in the coming years.

As already outlined, significant uncertainties remain about the near and the more distant future. Dutch society has to be aware that it is possibly going to be confronted by even more invasive developments and crises. The Netherlands is also facing geopolitical developments over which it has little or no influence – although this does not mean that there is nothing that we as a nation can do. Although the Netherlands is a small country, it has strong ties with the rest of the world and in the past has repeatedly had to navigate the tumultuous waters of geopolitics and world trade.²¹⁶ This calls for an adaptive and anticipatory attitude. To conclude this advice, the WRR and the KNAW therefore make four main recommendations:

1. Anticipate a variety of scenarios.
2. Aim for broad societal resilience.
3. Link the challenge of recovery following this pandemic to the approach of long-term issues.
4. Protect the values of the democratic rule of law.

4.1 *Anticipate a variety of scenarios*

No one knows exactly how the COVID-19 pandemic will continue to unfold in the coming years. In this advice, therefore, we have elaborated a variety of scenarios. These scenarios are not a prediction of the future, but describe different possible futures that, in practice, could also occur in hybrid forms. Moreover, the Netherlands could shift from one scenario to another (e.g. if a new variant of the virus should emerge, against which the existing vaccines provide insufficient or no protection).

Being prepared for a variety of scenarios increases the capacity available to the government and other parties to take strategic action. The course and duration of the pandemic are difficult to predict, and it is thus likely that policy will have to be adjusted repeatedly to new realities throughout an extended period. This calls for a

216 Cf. WRR 2010 and WRR 2013.

manner of decision-making that differs from what is applied during an acute crisis, in which decisions must be made very quickly. Thinking through different scenarios and their possible consequences for society in advance could be helpful for this process of timely anticipation and informed decision-making. By considering at each step not only the desired outcomes but also the conceivable alternative ones, policymakers could avoid being repeatedly caught off-guard and so policy itself is less likely to be dominated by *ad hoc* measures and shifts.

It is therefore important to continue communicating effectively about the uncertainties in each scenario²¹⁷ and to resist the temptation to choose simple answers or solutions. When announcing the relaxation of pandemic measures, for example, it should always be emphasised that there is a risk they may later have to be reinstated for a shorter or longer period. Not even the best available data and models can provide a precise prediction of the course of infections. This means that any changes to such measures must be approached with caution, as numerous and frequent ones reduce public clarity as to what exactly is expected, which can undermine support.²¹⁸ If people in the Netherlands are going to have to live with the situation for an extended period of time, it is more important to highlight some basic rules clearly than to continually pile one upon another.²¹⁹

Two points important in all scenarios have already been identified in 3.6 above: worldwide vaccination and human behaviour. Achieving worldwide vaccination is one of the areas in which policy can best influence reducing the risk of ending up in one of the more severe scenarios. As long as large parts of the world are not vaccinated, there will be a persistent and substantial danger that more dangerous variants will develop that will be very hard to keep outside the Netherlands or Europe, even with very far-reaching border controls. It should therefore be of great interest to the Netherlands and other affluent countries – from both a humanitarian perspective and out of enlightened self-interest – to contribute actively towards achieving global availability and accessibility of vaccines within the shortest possible time. Although The Netherlands cannot do this alone, it can play a facilitating and organising role within the European and international communities. For example, the Dutch government could choose to intensify its involvement in COVAX (e.g. within the European context) and to integrate the topic of vaccination strategy into bilateral development co-operation relationships.

Being prepared for the possibility that COVID-19 will be around for a long time to come requires making policy choices with long-term consequences now. One possibility is to increase efforts aimed at prevention. The course of COVID-19 is influenced by a number of risk factors (e.g. obesity and high blood pressure), so their mitigation could have a favourable influence over the progress of the disease. This is important in each of the scenarios, and that importance increases with their severity. Moreover, counteracting these risk factors could yield wider health benefits. Preparing for future developments also requires that policy makers now already start thinking through the dilemmas that will come into play in the various scenarios. The ethical policy trade-off concerning support for certain groups or sectors will be different in the worst-case scenario, for

217 See also Aharouay and Valk 2021.

218 RIVM 2021f.

219 RIVM 2021f.

example, than it is in ‘flu+’. Moreover, the more severe scenarios require considering priorities with regard to ICU admissions. If the virus continues to circulate for a longer period, explicit trade-offs will also be necessary between limiting morbidity and mortality due to COVID-19 and other societal goals. This involves questions concerning what is desirable and what is feasible, partly in light of the consequences for the various social sectors involved. As the crisis continues, it will become increasingly difficult for society to continue adhering to restrictive measures and also less and less natural to continue to expect this of the public.

Responsibility for anticipating a variety of scenarios is not limited to the government; civil society organisations and commercial businesses also have a major role to play in this regard. For example, they could develop alternative plans for business models involving greater physical distancing in order to be prepared for the most serious scenarios.

4.2 Aim for broad societal resilience

At present, there is a strong focus on increasing societal resilience by strengthening ‘pandemic preparedness’. This centres largely on medical and public-health preparations for a crisis. Despite prior warnings, the Netherlands – like many other countries – appeared underprepared for the COVID-19 pandemic. And it is still not a given that the situation will be any different in a subsequent crisis.²²⁰ Serious steps must therefore be taken now (e.g. with regard to international monitoring).²²¹ In addition, greater attention should be paid to organising a stronger and more responsive healthcare landscape. This includes creating the ability to scale up ICUs²²² rapidly and enabling proper information exchange and co-ordination during a crisis (e.g. with regard to the number of available ICU and hospital beds). This is of major importance to safeguarding regular healthcare in the future. It is also crucial that these efforts focus not only on curative patient care in hospitals but also give sufficient consideration to the broader public health infrastructure. This should include adequate capacity at community health services, for example, as well as in primary care, care for the elderly, home-based care, youth services and outpatient mental healthcare. Finally, it means ensuring the expeditious development and delivery of vaccines and drugs, the adequate availability of personal protective equipment and creating the infrastructure needed for large-scale testing and vaccination.

At the same time, it is important for the focus of policy to go beyond pandemic preparedness to include resilience in a broader sense. This is desirable not only because a pandemic affects society as a whole, but also because the next crisis could just as easily come from a different angle – as illustrated by the recent floods. Societal resilience is all about the ability of society as a whole to cope with shocks of various kinds. Buffers, variation and firebreaks are important in this regard.²²³

220 Mackenbach 2021; Gezondheidsraad 2004; Maxmen 2021.

221 The first steps have already been taken. For example, a European Health Emergency Preparedness and Response Authority (HERA) has been created. Globally, we have seen the establishment of facilities including the WHO Hub for Pandemic and Epidemic Intelligence. And in the Netherlands the KNAW Pandemic Preparedness Plan also takes a broad view of our resilience as a nation, whilst the Pandemic & Disaster Preparedness Centre considers socially disruptive crises in the broader sense.

222 According to Diederik Gommers, chair of the Dutch Society for Intensive Care, under ‘normal’ circumstances the Dutch healthcare system can accommodate only 100 coronavirus patients in its ICUs (see Van der Plicht 2021).

223 For example, see: WRR 2013, 2016.

Buffers ensure that, in a crisis, there are national stocks of critical items (e.g. personal protective equipment). They are also important at the level of organisations and individuals.²²⁴ For companies, for instance, this involves maintaining a healthy ratio of equity to debt as it is the equity that can serve as a buffer for coping with setbacks.²²⁵ At the individual level, it might involve building an emergency supply of basic goods for use in a crisis²²⁶ as well as arranging financial and social buffers to help safeguard personal livelihoods. As the current pandemic has demonstrated, though, at the individual level not everyone is able to build up sufficient buffers. This means that general societal ones (e.g. counteracting excessive income drops) are needed as a safety net.

Variation means that there are multiple means to absorb the impact of a crisis. The good digital infrastructure in the Netherlands makes it possible for people to work from home and to receive education at home. As the current pandemic unfolded, it proved possible to adjust the organisation of some jobs remarkably quickly, thereby reducing the likelihood of viral transmission due to fewer travel movements and less social interaction. At the same time, the digital infrastructure itself is dependent on a limited number of players and it is crucial to have analogue processes as a back-up, particularly for crucial functions, in case of major digital disruption.²²⁷ As the pandemic has clearly revealed, we are dependent on a limited number of countries and factories for a range of items crucial to contemporary society (e.g. medicines, computer chips). Societal resilience thus also calls for policy relating to crucial dependencies and building greater variation in that regard.

The term ‘firebreaks’ refers to the creation of distance between components in a system in order to prevent a hazard from spreading. In the event of a crisis, such distance can prevent matters from becoming even worse. Early on in the current pandemic, national borders were repeatedly used as firebreaks despite European integration. At this time it became clear that Dutch society is so internationally intertwined that the effectiveness – and indeed the desirability – of such measures was limited. Firebreaks are also important in the digital world. One example in this context is network separation, whereby systems can be temporarily isolated or disconnected.²²⁸

In short, the core challenge for policy aimed at enhancing societal resilience is not only to ‘resolve’ or prevent crises but also to ensure that society is better equipped to anticipate and cope with them. Creating social resilience requires buffers, variation and firebreaks. To this end, it is sometimes necessary to invest at a time when the risk still seems very remote since the potential damage caused by failing to do so then can be many times greater.

224 At present, resilience at these levels is particularly low in the Netherlands (see also Bezemer 2021).

225 See also WRR 2016.

226 To this end, the national government recommends an emergency package including bottled drinking water and non-perishable food, as well as a radio, a torch, emergency blankets and other items (see: <https://crisis.nl/wees-voorbereid/noodpakketten/>).

227 WRR 2019b.

228 WRR 2019b.

4.3 Link the challenge of recovery to the approach to long-term issues

The Dutch government faces a major challenge when it comes to recovering from the current pandemic, even though it is still not clear exactly how long it is going to last. The impact the crisis is having on the healthcare system, the education system and the economy requires attention. At the same time, the pandemic has revealed several opportunities that should be maintained or further developed for the benefit of society. Given its connections with other long-term policy challenges, and their urgency, it is important to link recovery and the lessons and opportunities that have emerged from the current crisis to them.²²⁹ Below, a number of examples are provided to illustrate this point.

In addressing the challenge of healthcare recovery, it is important that the energy and investments being directed towards eliminating the immediate backlogs be embedded within a policy vision for healthcare as a whole. This should include rethinking the importance and organisation of public healthcare (e.g. prevention and the community health services), mental health provision and so on, as well as the co-ordination and trade-off mechanisms between acute crisis care and regular healthcare. These efforts should also include the long-term issues in healthcare (e.g. the expected increase in demand and the shortage of personnel).²³⁰ A long-term societal cost-benefit analysis that includes the broader meaning of prevention and healthcare for society could play an important supporting role in these efforts.²³¹

The Dutch education system provides another example. As observed in Chapter 2, the pandemic has both increased the visibility of and widened the existing inequalities in this sector. Tackling them will require additional efforts in terms of policy and in the professional field. At the same time, the system is also facing other major challenges. For example, greater attention needs to be paid to reading, writing, numeracy and civic education, and there is a need as well to train and retain a sufficient core workforce of teachers.²³² Limited-term funding amounting to €8.5 billion has been made available to address the most acute problems, but evidence from the field indicates that this temporary financial injection will not necessarily provide an answer to the long-term challenges and might potentially lead to *ad hoc* policies. One unintended consequence could be that, in the long term, it becomes even more difficult to address the major challenges. In implementing a future recovery policy for the education system, it is therefore advisable to keep an eye on the long-term challenges, including the training and retention of a sufficient supply of good teachers.

The economic recovery policy provides a third example. This should focus on phasing out direct support measures, but at the same time also help companies in the transition to a new economic environment. Due to the generous support and loans made available by the government, many businesses and entrepreneurs have so far managed to survive the pandemic. In fact, fewer Dutch companies than usual have gone bankrupt during this period. At the same time, these loans (and those taken out privately by some entrepreneurs in order to make it through the crisis) should not be considered in isolation from the broader issue of debt in

229 Hajer (2021) refers in this respect to a 'polycrisis'.

230 WRR 2021.

231 See also Mackenbach 2021.

232 Hooge 2021.

the Netherlands. It is therefore important to link recovery to the question of proper risk allocation and debt settlement. Paying attention to this factor could make it possible for people to start with a clean slate and remain in business.

Recovery cannot be separated from the important societal challenge of sustainability, either, particularly in light of the increasingly urgent climate crisis and the major issues we face with regard to biodiversity and land use. In the process of stimulating new industry and supporting specific economic sectors, it is therefore desirable – and perhaps even necessary – to not lose sight of this particular challenge. Connections with European initiatives could also be sought in this regard.

In short, the challenge of recovery involves more than merely absorbing the damage caused by the pandemic; it also entails linking to other societal challenges at play now and in the longer term.

4.4 Protect the values of the democratic rule of law

An acute crisis may provide justifiable grounds for the temporary restriction of fundamental rights or the imposition of emergency measures that do not fully meet all the requirements of democracy and the rule of law. At the same time, it is especially important in such a crisis to protect ‘the vulnerable’, in all senses of the term. That is, both the vulnerable individuals in society and the vulnerable values that make our democratic rule of law what it is.

It is therefore of primary importance, even in the midst of the storm, to retain sufficient safeguards to protect fundamental rights and democratic procedures. Secondly, an excessive focus on risks can create a society in which substantial infringements of fundamental rights are imposed for the purpose of protecting health and safety. Thirdly, it is important to avoid allowing the temporary to become permanent. There is always a danger that the curtailments to and circumventions of normal procedures that are put in place during a crisis end up taking on a lasting character.

We first address the safeguards. The present crisis has been brought with it difficult trade-offs between the government’s duty to protect public health and individual liberties. During this pandemic, efforts to safeguard public and individual health on the one hand and, on the other, to uphold the right to privacy and religious freedom, the prohibition of discrimination and the guarantee of fundamental social rights (e.g. the right to housing and education) have not always pointed in the same direction. In some cases, they have even clashed. There are no simple answers to such dilemmas. It is important that any trade-offs which do have to be made are as transparent as possible and are discussed carefully beforehand. In the Netherlands, such discussion could benefit from reconsideration of the prohibition on judicial review of the constitutionality of laws.²³³

²³³ Dutch courts are not allowed to consider whether laws are compliant with the constitution. This has been a topic of debate for some time (on this point, see e.g.: Staatscommissie parlementair stelsel 2018; Staatscommissie Grondwet 2010).

Initially, decision-making on matters related to the pandemic largely fell to the security regions. The great importance of the proper functioning of these regional bodies during a crisis of this kind, and their large number, necessitate a more fundamental reflection of their place within the Dutch democratic system.²³⁴

The second aspect concerns the danger that adverse side effects of risk-avoidance measures are not sufficiently recognised in the longer term. For example, an accumulation of crisis measures allowing more collection, sharing and monitoring of data could create a situation in which people have to accept ever-increasing levels of control. There is also a risk that, in the longer term, these measures will create new vulnerabilities relating to privacy and abuse. This aspect could be easily overlooked in the acute need to control and manage a crisis.

Thirdly, there is the necessity to keep a watchful eye on the temporary nature of crisis measures. These should always be introduced with a clear end date. Situations in which such measures could potentially become permanent call for different deliberation processes, with proper attention being paid to values related to democracy and the rule of law as well as their long-term effects and side-effects. Moreover, it is important to avoid excessive reliance on the notion that there is a period ‘during’ the crisis and a period ‘after’ it, as if less importance need be assigned to democratic processes while a crisis is under way. Given the potentially permanent character of COVID-19 and the possibility that other crises will occur in rapid succession, a situation is needed in which good options for controls in line with democratic principles and the rule of law are available even in times of crisis.

4.5 *In conclusion*

Despite advance warnings, the pandemic caught the world – the Netherlands included – off-guard. This will undoubtedly lead to wide-ranging evaluations. In this advice, the WRR and the KNAW have sought to look ahead and in so doing to provide strategic scientific guidance for the benefit of future government and public policy. In no way do we claim to have said all that there is to say about the pandemic, or that we have addressed every issue. In the coming years there are sure to be many studies containing lessons that can be learnt from this pandemic with regard to health and socioeconomic policy, social cohesion, ethics and law, behaviour, good governance and international co-operation.

In light of the uncertainty surrounding the further development of the pandemic and its links to many other societal issues, this advice has two main messages. First, both the government and society must prepare for different scenarios with regard to the future development of COVID-19. And second, in its policy approach the government should focus not only on combating and recovering from the pandemic, but also on the coherence of these efforts with other important issues.

²³⁴ See also Peters 2021.

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Appendix A: List of people interviewed

Position at time of interview*

Anent Airs, Professor of Digital Strategy at INSEAD, member of the Supervisory Boards of Rabobank, Randstad, ASML and Jungheinrich AG.

Paul Depla, Mayor of Breda and Chair of the COVID-19 Social Impact Committee of the Association of Netherlands Municipalities (VNG).

Robbert Dijkgraaf, Director and Leon Levy Professor at the Institute for Advanced Study, Princeton, NJ, USA.

Maxim Februari, philosopher, novelist and public intellectual.

Janneke Gerards, Professor of Fundamental Rights at Utrecht University.

Erik Gerritsen, Secretary-General at the Ministry of Health, Welfare and Sport (VWS).

Lilian Gonçalves-Ho Kang You, lawyer, human rights activist and former State Councillor.

Thom de Graaf, Vice-President of the Council of State.

Paul 't Hart, Professor of Public Administration at Utrecht University.

Johanna Hirscher, partner at McKinsey & Company.

Marion Koopmans, Professor of Virology at Erasmus Medical Centre Rotterdam and member of the Dutch government's Outbreak Management Team.

Bert Kroese, Deputy Director-General and CIO of Statistics Netherlands (CBS) and member of the Coronavirus Crisis Think Tank at the Social and Economic Council of the Netherlands (SER).

Ahmed Marcouch, Mayor of Arnhem.

Loes Mulder, Secretary-General at the Ministry of Social Affairs and Employment (SZW).

Kim Putters, Director of the Netherlands Institute for Social Research (SCP).

Jeroen de Ridder, Associate Professor at VU Amsterdam, Professor occupying the Endowed Chair in Christian Philosophy at the University of Groningen and Chair of The Young Academy at KNAW.

Mark Roscam Abbing, Programme Director-General for Society and COVID-19.

Mathieu Segers, Professor Emeritus of Contemporary European History and European Integration at Maastricht University.

Boudewijn Steur, Programme Director for Strategy and Knowledge on COVID-19 and Programme Director-General for Society and COVID-19 at the Ministry of the Interior and Kingdom Relations (BZK).

Karien Stronks, Professor of Public Health at Amsterdam University Medical Centre (AUMC).

Louise Vet, Professor Emerita of Evolutionary Ecology at Wageningen University & Research, former Director of the Netherlands Institute for Ecology (NIOO-KNAW).

Marianne de Visser, Professor Emerita of Neuromuscular Diseases at AUMC and Board Member of the Netherlands Scientific Council for Government Policy (WRR).

Herman van de Werfhorst, Professor of Sociology at the University of Amsterdam.

Ton Wilthagen, Professor of Institutional Legal Aspects of the Labour Market at Tilburg University.

* The interviewees were consulted because of their expertise and involvement with the subject matter of this advice. Responsibility for the contents of this publication rests with the WRR, the KNAW and the project group.

Appendix B: Project group, advisory committee and reviewers

Project group

Tanja van der Lippe (co-chair), Professor of Sociology at Utrecht University, Chair of the Social Sciences Council of the KNAW.

André Knottnerus (co-chair), Medical epidemiologist, Professor Emeritus of General Practice at Maastricht University, former Chair of the WRR and former Chair of the Health Council of the Netherlands.

Josta de Hoog, project co-ordinator and research fellow at the WRR.

Ruth Mampuys, research fellow at the WRR.

Myrthe van de Pavert, student trainee at the WRR.

Frans Brom, Director of the WRR and Professor of Normative Aspects of Scientific Policy Advice at Utrecht University.

Advisory Committee

Catrien Bijleveld, Professor of Methods and Techniques of Criminological Research at VU University Amsterdam, Council Member at the WRR.

Godfried Engbersen, Professor of Sociology at Erasmus University Rotterdam, Council Member at the WRR.

Maarten Prak, Professor of Economic and Social History at Utrecht University, Chair of the Coronavirus Committee at the KNAW.

*Reviewers**

Dirk Bezemer, Professor of Economics of International Financial Development at the University of Groningen.

Ron Fouchier, Professor of Molecular Virology at Erasmus Medical Centre Rotterdam.

Janneke Gerards, Professor of Fundamental Rights at Utrecht University.

Paul 't Hart, Professor of Public Administration at Utrecht University.

Brenda Penninx, Professor of Psychiatric Epidemiology at VU Medical Centre Amsterdam.

* The reviewers were consulted because of their expertise and provided comments on a draft version of this advice. Responsibility for the contents of this publication rests with the WRR, the KNAW and the project group.

The Scientific Council for Government Policy (WRR) informs and advises government policy on issues that are of strategic importance for society.

The Royal Netherlands Academy of Arts and Sciences (KNAW) is a society of scientists from all disciplines and a government advisor on scientific practice.

Project team:

Tanja van der Lippe (co-chair)

André Knottnerus (co-chair)

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Ruth Mampuys (researcher)

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