UNPRECEDENTED AND UNFINISHED:

COVID-19 and Implications for National and Global Policy

International Science Council
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PREFACE

The COVID-19 pandemic brought unprecedented disruption to lives and businesses around the globe. As a health crisis it has tragically cost millions of lives, but its impacts go way beyond health and the pandemic is far from over. This report examines the wide-ranging consequences of the pandemic. It seeks to describe how various decisions in one area of policy impact other areas of public life and personal wellbeing, and what this means for longer-term outcomes as we progress through the pandemic then rebuild and recover. Crucially, we need to learn how to mitigate devastation arising from such crises in the future.

What is clear is that managing the pandemic continues to be about much more than managing vaccine distribution chains. COVID-19, like all health crises, is a broader socio-political challenge. Speaking at the 2021 Conference of the International Network for Government Science Advice, Chor Pharn Lee said, 'science gives us vaccines, but pandemics are social'[1].

1 INGSA 2021: *Building Back Wiser: Knowledge, Policy and Public in Dialogue* Allen K., Simon-Kumar N., Mills G. (Eds.) Access via: https://ingsa.org/ingsa2021/ (Download 'Viewpoints')

This means we cannot afford to respond to pandemics as if they are only health issues, nor solely through a life sciences lens. This report seeks to support the shift in thinking that is required to achieve a more comprehensive 'worldview' of pandemics and similar emergencies. It presents tools to map policy domains and scenarios and to observe interactions over approximately a five-year timeline. The lessons outline actions to be taken around an emergency such as a pandemic, both before and after, as well as beyond the sectors of health. Pandemics play out the way they do because of the way our societies are organized and our governments govern.

Given the unprecedented nature of the impact of COVID-19, the community of scientists and science advisors behind this report call for an equally unprecedented ongoing and accelerated response from the global community, governments, and civil society.

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EXECUTIVE SUMMARY

A. Why is a COVID-19 future scenarios exercise important?

The object of this report is, firstly, to inform policy-makers and the public about the wide-ranging, long-term impacts on the entire global community from COVID-19, and to help elucidate the key decisions and actions that could shift the evolution of the pandemic towards more positive and equitable outcomes across societies. Secondly, it should inform planning and responses to other existential crises, whether pandemics, natural disasters, or the impacts of climate change.

Some two years after the World Health Organization (WHO) declared the SARS-CoV-2 outbreak a Public Health Emergency of International Concern, COVID-19 and the successive emergence of variants of concern continue to put the global community, and every nation, under significant stress.

While the rapid development of vaccines has been a huge scientific success, made possible through unprecedented collaboration between the public and private sectors, neither vaccine deployment nor the imminent application of antiviral therapies will be enough to address the multiple consequences of the pandemic. Furthermore, the far-reaching consequences across all domains are far from over, and some will unfold well into the future.

In many countries, health systems remain overburdened; in others, notably in Africa, there is little access to lifesaving vaccines and there are ongoing challenges relating to issues such as vaccine hesitancy.

Too many governments have reacted to the pandemic as if it is solely an acute public health crisis, and have continued to focus narrowly on health consequences in their country. The result has been an uneven response, with insufficient global solidarity, a tendency to short-term planning, and too little consideration of the broader impacts on societies.

This report therefore provides an entry point to addressing the wide-ranging impacts of COVID-19 in two parts.

Part 1 sets the scene by outlining three plausible scenarios over a five year time horizon that could conceivably emerge from the pandemic's cascading impacts, taking into account policy interactions and uncertainties that may affect outcomes. These scenarios are intended as simply as illustrations to help the global community plan for the future, by seeking to assess the broader impact of decisions taken today and the costs of inaction.

Part 2 then provides recommendations on how the global community can prepare for the future to mitigate the impacts of COVID-19 and address other existential crises that we will inevitably face. The hope is that this should improve outcomes and provide many lessons for other global emergencies.

B. What approach was used?

A systematic approach was used to develop plausible five-year scenarios. The International Science Council (ISC), with support from the United Nations Office for Disaster Risk Reduction (UNDRR) and the WHO as observers, appointed a high-level oversight panel of 2 observers and 18 geographically diverse experts in public health, virology, economics, behavioural science, ethics, sociology, and other areas (see Appendix II).

In Phase 1, from March to November 2021, the oversight group and its technical advisory and project management teams undertook an extensive number of consultations with the aim of outlining the drivers and possible outcomes of

the pandemic over a five-year horizon. This was accomplished by the following:

1. *Identifying the many factors* that would have an impact on the evolution of the pandemic and/or be influenced by the pandemic.

2. *Identifying key vectors of uncertainty.* These are critical events or policy issues that could significantly influence the long-term outcome of the pandemic.

3. *Developing a systems map* of the interactions between various dimensions of policy and how they affect the delivery of outcomes. This map is used as a conceptual device to guide policy-makers about the wider impacts of the decisions that they make within their specific policy domains.

4. *Describing some plausible global outcome scenarios* over five years.

In Phase 2, from January to April 2022, a further 17 international policy experts participated in interviews or responded to a questionnaire in order to identify key lessons and implications across each policy domain. This was followed by an integrating expert workshop to develop a set of recommendations that would have the most positive impact on ending this pandemic and increasing resilience to future crises.

This report summarizes the findings and the implications of these extensive consultations and analyses.

C. What are the drivers and how are we managing the impact?

The global experts engaged in phase 1 of this project identified 53 critical factors that could most significantly impact the long-term outcomes of the pandemic. Some are already prioritized by some governments, the private sector and certain multilateral actors. These include vaccine and antiviral supply and access, biosecurity preparedness and response planning, and the surveillance of emerging viral variants of concern, along with other public health and social measures to control the epidemic.

Overwhelmingly, however, our conclusion is that many of the factors that will have the most significant impact on societies over the long term (five years or beyond) are not being prioritized sufficiently by many governments or by the global community today. These include policies to improve fundamental government services such as public health system capacity, the provision of care for vulnerable populations, the state of education systems, and access to mental health services. Other critical factors include the spread of misinformation – particularly on social media – geopolitical opportunism, poor access to capital markets for low- and middle-income nations, the weakening of the multilateral system, and loss of progress on the UN Sustainable Development Goals.

D. What future COVID-19 scenarios should the global community prepare for?

Developing scenarios does not claim to predict the future. As this report points out, there are too many uncertainties to do that. But by considering a range of plausible futures as useful illustrations, this process allows policy-makers to identify actions that might narrow the landscape of possibilities to a more acceptable range.

The primary goal of the project was to explore outcomes beyond the direct impact of COVID-19 on health. As an illustration, three global COVID-19 futures are outlined for the year 2027. The project's expert consultation considered the first of these scenarios to be the most likely, the *Continuity* scenario; the second, plausible but more pessimistic, referred to as *Missed Recovery*; and the third, plausible but more optimistic, *Collaboration Plus*. These outcomes will be influenced by the evolution of the vectors of uncertainty that the project identified. More extreme and intermediate scenarios are, of course, also possible. Each scenario considers the interactions between the state of the COVID-19

pandemic, including ongoing evolution of the virus and vaccine development, global population health, the level of social wellbeing, societal stability, the state of the global economy, inequality levels, impact on the sustainability agenda, and the impact on future threats.

The **Continuity scenario** describes a near future where global and regional collaboration has led over the next five years to effective vaccines (continually updated in relation to the evolving nature of the virus). The unvaccinated population remains primarily in low-income countries, although vaccine-hesitant groups everywhere remain a stumbling block to achieving widespread immunity. Additional manufacturing capacity has allowed for the supply of updated vaccines and boosters in most countries. Some public health and social measures have been maintained or temporarily re-established in countries where there have been surges of COVID-19. Greater awareness of the importance of robust social and health systems has resulted in the implementation of some social recovery mechanisms and investment, but such actions are sporadic and uneven within countries and internationally. As a result, and because of its biology including presence in non-human hosts, COVID-19 has become an endemic disease across the world, with seasonal surges occurring, requiring updated vaccines and the use of antiviral pharmaceuticals. Progress toward the United Nations Sustainable Development Goals (UN SDGs) slowed during the first few years of the pandemic, but could then accelerate, in part because of lessons learned during the pandemic. However, trust between citizens and State has been adversely affected, in part by disinformation, with a rise in populism and loss of social cohesion, creating broader political implications at both national and global levels.

The **Missed Recovery scenario** depicts a world in five years' time with declining societal conditions and increasing inequalities, arising from growing geopolitical tensions as already illustrated by the Ukraine conflcit, protectionist policies and poor global and regional collaboration in response to the pandemic. The use of COVID-19 boosters – updated for new variants in some instances – has been authorized in most countries in response to waning immunity and poor immune response in vulnerable groups, in response to more pathogenic or transmissible variants and among those with high exposure. But some low-income countries still have limited access to initial vaccine doses and antiviral medicines. Less than 60% of the global population has been effectively fully vaccinated against COVID-19. Restrictive public health and social measures, such as work-from-home policies and regional lockdowns, are still required in some countries. In this scenario, COVID-19 recovery mechanisms and investment in social care and health systems have been limited. As a result, COVID-19 remains largely uncontrolled, with severe recurrences in parts of the world. The rise in populism has further compromised international cooperation and promoted a rise in authoritarian governance. The multilateral system, already weakened, is further compromised and progress towards the UN SDGs is severely set back.

The more optimistic **Collaboration Plus scenario** depicts a world over the next five years where COVID-19's importance has been reduced because of high levels of international collaboration. More than 70% of people have received an effective COVID-19 vaccine. Vaccine development and enhanced manufacturing and distribution capacity allows a high protection rate to be maintained globally. Effective antivirals are widely available at a cost that allows access for low-income countries. Public health and social measures to control the virus are much less restrictive. The shock of the pandemic has prompted high income countries to commit to substantial investments in green recovery from COVID-19 and to building up their social care and health systems. Health systems in low-income countries can still be overburdened when surges of COVID-19 do occur, but the disease has become more manageable. Governments and the multilateral system have taken lessons from the pandemic and strengthened disaster-preparedness and science-advisory mechanisms to enhance resilience against future crises. The weakening of the pandemic has allowed multilateral actors to reprioritize the UN SDGs.

In summary, the experts interviewed considered any of these three scenarios, or intermediate scenarios that draw on them, to be entirely possible. It is therefore crucial that the global community focuses on actions that can be taken to achieve the best possible outcome. To do this, they need to understand the drivers that shape these scenarios and how these might interact.

To support this interrogation of scenarios, various aspects of the COVID crisis are explored using the concept of policy dimensions, or 'clocks'. Seven clocks are used to represent the critical factors that will affect the mid- to long-term outcomes of the pandemic. These are health; social; national governance; economics; global governance; the environment; and science and technology. Clocks are used to represent these factors because they occur at varying speeds, and their impacts will be realized on different timescales. Countries and regions may also be at different phases of these clocks at any one time.

E. What are the key recommendations for how the global community prepares?

Mapping the clocks, the vectors of uncertainty and the resulting outcomes provides an overview of the complexity of the pandemic's impact and the multiple chain reactions that it has unleashed. Decisions and actions must be scrutinized in the context of cascading risks, complex feedback loops and multiple trade-offs.

Considering the multidimensional nature of the COVID-19 pandemic, Part 2 of the report outlines the most important lessons and policy implications that are widely applicable for either national or multilateral action. The aim is to suggest ways to shift the current trajectory towards a more optimistic outcome that is closer to the Collaboration Plus scenario.

Some of the key recommendations are shown in Table 1. These include the following:

1. Global and regional cooperation are essential as a core component of seeking remedies and ongoing protection. Current shortcomings in the multilateral system highlighted by the handling of the pandemic (and indeed of the Ukraine crisis) call for reform in the way this operates to handle major crises. This is especially the case given the need to navigate through COVID-19 while facing multiple risks related to climate change, geopolitical tensions, food security and other areas.

2. In order to address the widening inequalities that have resulted from the pandemic, governments need to focus on ensuring that the benefits of any future economic recovery are widely shared. This means investing in several areas of overlapping impacts, including: inclusive governance; the acceleration of international mechanisms to ensure high-quality therapeutics for low-income countries; elimination of the digital divide in education; and mitigation of social isolation arising from the pandemic through mechanisms for engagement across society.

3. Governments must review and reframe the way they assess risk, integrating it more formally into policy development. Transdisciplinary thinking and a focus on resilience are required both before and during a crisis to increase preparedness for and resilience to a wide range of disasters, considering interconnected risks and consequences.

4. Governments must prioritize building and maintaining trust, help strengthen societal cohesion, and foster cooperation and resilience. Community engagement should be a central activity in preparedness plans for pandemics and other crises, with a diversity of views heard.

5. There is a need to address the challenges of disinformation, and to strengthen pluralistic science advice systems to increase trust in science, thereby protecting societies from risks.

6. Equally, there is a need invest in R&D for the public good. As part of this, the UN should develop a more integrated approach to science so that challenges can be overcome by working towards common goals.

7. Policy learning at the local, regional, national, and international level must be increased. This includes sourcing multiple kinds of data and knowledge to learn what precipitated events and what went wrong, in order to develop better mechanisms to address future risks.

F. Key messages

The pandemic has affected every society and is truly a global crisis. Policy-makers have focused predominantly on national solutions. However, a global crisis requires global and regional cooperation and solutions, in addition to well-thought-through national and local responses.

Although the pandemic will continue to affect every aspect of social, political, economic, and diplomatic life, many decision-makers continue to take a short-term perspective, neglecting the potential impact of their decisions on non-health-related policy domains far into the future.

This project provides a template for policy-makers and experts to consider local decisions in a wider context. It highlights the types of decisions that might lead to better and more equitable outcomes, and illustrates the complex interactions between these decisions.

The future course of the pandemic, and its consequences that extend well beyond the health regime, will depend on policy decisions taken today. Such decisions will shorten or prolong the course of the pandemic and mitigate or aggravate its impacts.

Therefore, Part 2 of the report makes recommendations across several action areas to help mitigate future risks, with the goal of moving towards a Collaboration Plus scenario. These areas cover global equity; understanding risks; trust and public mobilization; science diplomacy; capacity development for science advice and resilience building; multilateral system reform; and investment in policy learnings (see Table 1).

Table 1: Policy recommendations to mitigate the long-term impacts of COVID-19 and prepare for future crises

POLICY/ACTION AREA	MAIN RECOMMENDATION	ACTIONS
Global equity	Focus on reducing growing inequalities affecting societies' capacity to cope with COVID-19	1. Improve health system access, capacity and adaptability 2. Support the recovery of education 3. Support the care economy
Understanding risks	Review and reframe the way risk is assessed and integrate it more formally into policy development	1. Focus on consequences, not just specific risks 2. Reframe long-term risks around actionable measures to address acute needs 3. Remain vigilant to other existential risks, 4. Don't deprioritize sustainability
Trust and public mobilization	Build trust through coherent decision-making and reliable information	1. Ensure trust through transparent decision-making and information flows 2. Mitigate misinformation and disinformation with planning and trust 3. Adapt the crisis management approach as the situation changes 4. Change definitions of success rather than focusing just on case numbers and deaths
Science and science diplomacy	Prioritize science collaboration and diplomacy in times of peace, so that research can be promptly and equitably mobilized in a crisis	1. Invest in R&D and sharing of benefits for the public good 2. Ensure recognition of the work of scientists in lower- and middle-income countries 3. Support further developments in open science to ensure equitable access 4. Enhance science advisory mechanisms at both the national and multilateral level
Capacity development for science advice and resilience building	Ensure broad capacities in science advice, evidence synthesis and brokerage	1. Invest in an effective array of evidence synthesis and brokerage capabilities 2. Build capacity and support advice sharing with low-income countries 3. Plan for science communication, science literacy and 'risk listening' 4. Establish a UN Science Advisory Board

POLICY/ACTION AREA	MAIN RECOMMENDATION	ACTIONS
Multilateral system reform	Reform the multilateral system to enhance international cooperation and regional responsiveness before and during crises	1. Address structural weaknesses in the WHO and other multilateral stakeholders 2. Establish multiple coordinated processes to mobilize the wider national, regional and international community at earlier stages of a crisis 3. Support the role of civil society and the private sector in reducing social deficits 4. Improve international agreements in view of COVID-19 responses
Investing in learning	Increase capacity for policy learning at local, regional, national and international levels	1. Analyse the role of people and their mobility in zoonotic outbreaks to understand how human actions can exacerbate effects 2. Analyse what went wrong in events, focusing on developing understanding and mechanisms to address future risks 3. Seek out multiple kinds of data and knowledge to learn the right lessons 4. Improve understanding internationally through cooperation in the multilateral system

To read the full report please visit
https://council.science/publications/covid19-unprecedented-and-unfinished