



# COVID-19 FORESIGHT

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*This document is a first draft summary of ongoing research at Policy Horizons Canada (PHC). The content reflects initial desk research and interviews. For more details see the annex.*

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## About our COVID-19 foresight research

Policy Horizons Canada is a strategic foresight organization within the Government of Canada (GoC), with a mandate to help the Government develop future-oriented policy and programs that are more robust and resilient in the face of disruptive change on the horizon.

In line with its mandate, PHC aims to contribute to GoC policy makers' thinking about the potential medium- and long-term consequences of the COVID-19 pandemic and the implications for policy.

Amongst its activities, PHC conducts research on the question: **“What shifts might we experience in the medium term that challenge our policy assumptions and tools?”**

As such, Policy Horizons Canada is engaged in a scanning exercise that includes:

- desk research and literature reviews,
- engagements and collaborations across government departments and agencies
- conversations with national and international foresight practitioners, experts, and stakeholders

Many seasoned foresight practitioners, forecasters, and eminent economists believe the world is experiencing the highest level of economic, political, and social uncertainty in decades. The number of “known unknowns” is extremely high. Foresight—the assessment of what might happen or be needed in the future—is more needed than ever. This work is ongoing and adds to the wealth of foresight occurring throughout the GoC.

## About this document

The insights from our COVID-19 foresight research are synthesized in this document, which is updated regularly, and distributed to decision makers and stakeholders to promote forward-looking thinking and decision making.

This document synthesizes some of the potential changes, disruptions, and shifts that may arise because of COVID-19. It highlights key critical uncertainties and poses future-relevant questions.

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# COVID-19 Foresight

The COVID-19 pandemic is accelerating certain trends, spurring disruptions, opening new possibilities, and broadening the realm of the possible.

In this section we discuss some of these. Below is a list providing an overview of the areas covered, followed by a more detailed analysis.

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## HEALTH

### **Trajectory of COVID-19: Can medicine control the virus?**

The greatest uncertainties about the impact of the COVID-19 pandemic are, unsurprisingly, about the trajectory of the virus itself, and the abilities of governments to manage it with medicine.

Our capacity to control COVID-19 – either through a preventative vaccine or effective treatments of infection – will shape our ability to influence our futures.

There are many immediate and longer-term uncertainties. In the short term, how long will it take to have adequate mass testing capacity? And how might new technologies evolve (e.g. home-based testing)?

At the time of writing, it is also not clear whether people will develop long-lasting immunity to COVID-19. And even if they do, how might we manage possible mutations of the virus? Will the pandemic persist? Or will immunity, an eventual vaccine, or public health measures extinguish it? And if there is a vaccine or treatment, when could it be widely deployed?

In one scenario, COVID-19 would become endemic across most of the world. Depending on the effectiveness of public health measures, continuing levels of infection might be treatable within the limits of well-developed healthcare systems. Where improved treatment protocols are available, they might decrease the rates of mortality and serious complications. But in areas with fragile health systems, the baseline levels could swamp hospitals and public health institutions, causing much greater mortality, health problems, and disruption.

### **Access to vaccine or treatment: A highly competitive market dynamic or managed as public goods?**

Who will have access to a future vaccine or treatment? The question is legitimate for two reasons. First, some countries are selling COVID-19 tests and personal protection equipment (PPE) to the highest bidder in the marketplace. Second, nationalistic strategies have emerged to develop and/or acquire potential vaccines and treatments.

At the same time, other initiatives are emerging that are managed for the public good. The Coronavirus Global Response, led by the European Union, is a case in point. It aims to raise enough funds to ensure that diagnostics, treatments, and vaccines are developed collaboratively and provided to everyone.

A “winner” of the race to treatment and vaccines could attempt to use that victory to significantly shape geoeconomic, geo-political, and societal futures. It may take time for production to meet global demand. This, in turn, may mean a limited supply of treatment and vaccines, at least initially. As a result, there will likely be an ethical debate about who can benefit, and equally important, who decides.

## **Long-term physical distancing: Who is more likely to break the rules?**

In several countries, the overlooked needs or special circumstances of certain population groups have contributed to COVID-19 hotspots and other shocks. If physical distancing remains in place to manage COVID-19, it is important to consider if some groups may be overlooked if they have barriers to respecting physical distance measures, or have limited patience to do so for long periods.

In some areas, tensions between citizens and law enforcement are already complex. Additional limits to freedoms and restrictions on social behaviours could lead to unrest or decisions to defy the rules (e.g. suburbs of Paris, some religious communities). As another example, some parts of the population have financial or physiological unmet needs that become strong enough to break physical distancing rules. These could include, for example, people living in poverty who need to earn a living; single people wanting to build a relationship; and people who gain their esteem and sense of identity from charitable work or group dynamics. People will make trade-offs between their own needs and the needs of the larger public differently. Appreciation of risk also varies greatly across individuals, and notably across age groups.

## **Mental health: Will trauma be short-lived or sustained?**

Some people are experiencing the pandemic as a trauma. COVID-19 and containment measures are challenging many basic human needs such as physical and financial security, belonging, and physical touch. Many people meet their needs for support and personal esteem through professional or non-professional in-person contact with others. Beyond this, the pandemic and its containment measures have often been accompanied by some version of “war” narratives.

Will living this way translate into short-lived trauma or more long-term post-traumatic stress disorder? Will it occur at the individual, group, or societal level? The answer depends on a broad set of factors, including how long the pandemic continues, as well as the number of

waves of lockdowns and openings. How many people will be hurt by the economic impact? Will people feel empowered to make choices, or feel forced to live in traumatic and stress-inducing circumstances? The question is particularly pressing in the case of children for whom COVID-19 will provide a major formative event.

The definition of traumatic living conditions is not one-size-fits-all. For some, it may manifest in returning to a workplace they feel is unsafe. For others, it may be the requirement to telework due to additional lockdowns or cuts to overhead by cash-strapped firms. For still others, the trauma may manifest as the prospect of loss of steady employment, housing, or even family members.

## **Pandemics: More frequent and devastating occurrences are likely, possibly from synthetic biology**

In the first two decades of the 21st century, five new pandemics have emerged—about twice as many that occurred in the entire 20th century.<sup>1</sup> More are likely to come, and one of these will likely be even more devastating than COVID-19.

In the 20th century, pandemics such as the Spanish flu and HIV/AIDS had higher death tolls than COVID-19 to date. In the 21st century, some pandemics have much higher mortality rates (e.g. Ebola 25–90 percent, MERS 35 percent). In a report published in September 2019, the World Health Organization (WHO) pointed out that if a 1918 influenza-type pandemic were to occur today, it would kill up to 80 million people and wipe out five percent of the global economy.<sup>2</sup>

While COVID-19 is a naturally occurring virus, it is plausible that pathogens could be created intentionally or unintentionally. This becomes more likely with the ability to both map microbial genomes, and to synthesize and access genetic material. State or non-state actors could

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<sup>1</sup> <https://www.visualcapitalist.com/history-of-pandemics-deadliest/>

<sup>2</sup> World Health Organization (2019), Report.

design pathogens to harm animals, plants, or humans (either directly or indirectly by harming needed biological resources).

Given the potential impacts on health and the economy, the risk of unintentional creation or release of synthetic organisms may rise in prominence as a public and policy concern. Best practices to identify, isolate, and treat COVID-19 could prove invaluable in responding to intentional introduction of a synthetic biology pathogen. PHC's [\*Biodigital Convergence report\*](#) might be a relevant resource for thinking about the broad context in which we might experience and manage bio-risks and opportunities.

# ECONOMY

## The shape of economic recovery: Will it be V, U, L, or W?

There is significant discussion around the “shape” of the economic recovery (e.g. V, U, L, or W). Many interventions seem intended to keep the economy on “life support” until the pandemic is under control. This assumes that economic activity will rebound once that happens (a V-shaped recovery). However, “the economy” is an aggregate of many activities. While an aggregate measure may follow a particular pattern, individual patterns may vary significantly within different sectors of the economy.

Furthermore, the shape of the economic recovery may vary based on the metric used. Different shaped curves, for example, may be seen for gross domestic product (GDP) growth, employment levels, or the value of the stock market. Relying heavily on traditional macroeconomic indicators may skew COVID-19 responses toward activities that will be positively reflected in these metrics.

Moreover, even before the pandemic, policy makers were asking questions about the degree to which economic metrics reflect the welfare of citizens. The collective “time out” on economic activity may be an opportunity for reflection. Is the current set of core economic metrics a sufficient measure of how well people are doing? Would other metrics help broaden the analysis?

Emergency fiscal measures may be an appropriate short-term response to a system-wide shock. However, they may be difficult to sustain if the economy rebounds unevenly. Depending on the rate or extent of recovery in different sectors, governments may need more targeted responses over time. The different possibilities for economic recovery (i.e. uneven, slower than expected, or more U- or W- shaped than V-shaped) are considered below.

## Economic opening: Uneven across jurisdictions, impacting value chains

If jurisdictions do not control the pandemic in the same way, blocks or “bottlenecks” may occur in supply chains.

On the supply side, long and complex global supply chains to produce physical products mean different parts of the chain are in different places. All parts need to work for the supply chain to function. In some countries/regions, one part of the supply chain may be open (i.e. workers can go back to work). In others, the chain may be closed (e.g. workers are sent home because of a second or third outbreak of COVID). It may not be possible to switch on every element at the

same time. This may make the restart uneven and intermittent. Governments will have little opportunity to intervene in bottlenecks arising in other countries.

Similar bottlenecks can occur on the demand side. Even if supply chains are fully operational, the markets for their goods could still be on lockdown. Consequently, people could not buy them. For example, car factories might produce cars in the People's Republic of China (hereafter "China") or Japan for export. However, if American and European economies are still locked down, there is no market demand for those cars. The factories may have to shut down to prevent excess inventory, even if there is no COVID-19 in their jurisdiction.

## **Consumer and corporate confidence: Uncertain fast return to pre-COVID-19 levels**

The impacts described above could persist even if many aspects of economic activity resume. While incomes may stabilize, many people may not spend as much as they did before the pandemic. There are several reasons why this could happen.

First, consumers and corporations may have drawn down equity or increased debt during the pandemic to make up for lost revenues. Many may be looking to pay off debt or rebuild savings to a level that would make them resilient against further shocks. Some could be highly averse to risk if the pandemic put them in a precarious financial situation, leading to fewer non-essential expenditures and investments.

Second, borrowers may face higher interest rates and greater risk premiums from investors due to higher perceived or real risk of default or insolvency. This trend can already be seen in higher mortgage rates charged by banks. These rates have increased despite a significant (unprecedented) drop in the Bank of Canada rate and lowered capital requirements in banks that free up more money for lending.

Third, although banks help the economy function, they are also businesses. They may minimize losses from bad loans to consumers or businesses to help protect shareholder value. This, in turn, could lead to tight or costly money supply from banks, as well as in bond and equity markets. Lack of access to money in the short term could push companies that could be financially viable over the longer term into insolvency.

Fourth, if the pandemic lasts a long time and job prospects are scarce, many post-secondary students may stay in school. This may increase debt loads for students and/or their parents, and reduce consumer spending for both. Students may manage these debts by shifting some or all of their studying online and continuing to live at home. However, these moves reduce

spending and employment in college and university towns that would normally see a large influx of domestic and foreign students.

Fifth, the hospitality and entertainment sectors may take a long time to recover. Consumers may continue to spend less due to financial uncertainty or risk aversion. Many may still fear catching COVID-19 or another virus that may subsequently appear. This could affect the popularity of live performances, festivals, or sporting events. It may also reduce activities that require closer contact, such as going out to restaurants, bars, and movie theatres or visiting museums, galleries, and theme parks.

Sixth, retail travel may remain depressed, particularly situations that put travellers in close contact with people from other regions. Airlines, cruise ships, and resorts may not recover for a long time if retail travellers fear a re-emergence of COVID-19 or the outbreak of a new pathogen.

Finally, corporate expenditures on travel, accommodation, meals, and entertainment may also decline. This would be intended to save money, but also to avoid risk. On the one hand, businesses may want to reduce the risk of exposing employees to infection. On the other, they may want to avoid negative publicity. Large business gatherings (e.g. conventions) or international meetings, for example, are hot spots for contracting infections. Consequently, public opinion might criticize corporations that put the wider public at risk by holding these types of events.

## **Oil: Petroleum prices may remain depressed for a long time**

The demand for oil has quickly dropped by about 30 percent due to reduced consumption of transportation fuels in the face of the COVID-19 lockdown. This alone would have led to lower prices in the short term. However, the pandemic-induced demand shock also coincided with a supply shock. In early 2020, a breakdown in OPEC+ saw the Russian Federation and Saudi Arabia both increasing production and competing for market share. While there are some signs that producers will reduce production, the agreement may not hold. Regardless, the cuts only amount to about one-third of what would be needed to match supply with current demand.

Canadian oil companies operate in this global context, but have little control or influence over it. With 96 percent of its oil production going to the United States (U.S.) in 2018, Canada has essentially one buyer. Conversely, the U.S. has access to a wide range of suppliers, including itself. Over the past decade, the U.S. has gone from a large importer of oil to a net exporter. This is primarily due to the fracking revolution. Due to ongoing production in the first months of 2020 (despite the drop in demand), most oil storage capacity was full across the globe. Storage was particularly acute in the U.S., specifically in Cushing, Oklahoma where Canada sends

much of its western oil for storage and distribution to American refineries. This lack of storage led to the negative price of oil in April. Contracts coming due in April required buyers to take physical delivery of oil at the Cushing terminal and buyers had to bid against each other for the remaining limited storage capacity.

As storage becomes full, it backs up through the supply chain. Eventually, producers must reduce or shut-in operations (i.e. cap production lower than availability). At storage terminals in the U.S., Canadian producers compete with American counterparts for storage or sales to U.S. refineries. No producer will want to shut-in production of existing wells or oil sands operations; it is expensive to restart. Furthermore, geotechnical issues may prevent bringing some fracked wells back online if they have been shut down for too long. As a result, U.S. producers may accept lower than break-even pricing for an extended period to keep wells operating. This could suppress demand and/or prices for Canadian imports. This, in turn, could cause increased shut-in of Canadian production or force producers to accept even lower prices than U.S. producers. Either case will likely lead to fewer jobs and capital expenditures in the Canadian oil sector.

More pipelines may not change this dynamic. The Keystone XL pipeline, for example, would connect to the Cushing, Oklahoma hub. A pipeline to an ocean port might open other markets. However, Canadian producers would have to compete in those markets with other suppliers with lower production/transportation costs per barrel.

As a further consideration, U.S. President Trump has signaled he may impose a tariff on imported oil to maintain price stability for U.S. producers and avoid layoffs in the sector. While such a tariff could target oil from overseas or Mexico, it could affect Canada as well. Although it would take time to reconfigure refineries and infrastructure, the U.S. may one day become self-sufficient in oil. In that case, it would not require Canadian oil imports.

The impacts of oil prices and production extend beyond the economy. There are significant implications for national unity and for government revenues at provincial and federal levels.

## **Quantitative easing: Not guaranteed to create economic growth**

In response to the 2009 global financial crisis, decision makers used quantitative easing (QE). Although QE injected huge amounts of cash into the economy, it did not cause inflation as expected. PHC analysis suggests that QE money flowed largely into the stock market. As a result, QE did not create inflation at the consumer level. Rather, the “inflation” occurred in equities where stock prices increased relative to earnings.

In bailing out companies in previous crises, it appears governments have largely transferred money to the owners of those companies, many of whom already had significant wealth. Many of them did not need to spend the cash influx to keep themselves comfortable. Most did not want to hold cash because it declines in value over time due to inflation. As a result, they invested the cash influx. However, most of that investment went to increasing share prices (because demand exceeded supply) or buying back shares rather than going into capital to increase production and create employment. Some also went into mergers and acquisitions, but that centralized ownership rather than increased output. In some cases, merging companies may have reduced jobs.

Some QE may also have gone into luxury real estate and goods. This, in turn, may have contributed to high prices in prime real estate in “world class” cities, including Vancouver and Toronto.

QE increased inequity in the U.S. and possibly did the same in Canada. People tend to invest or save surplus money. These choices have a low multiplier effect on the economy.

## **Real estate: Downward pressure on prices is likely**

The economic crisis could put downward pressure on housing and rental prices. Some sources cite a drop of 10–15 percent over the coming year. People who lose their jobs could be forced to sell their homes. They would find it hard to re-enter the housing market until they find long-term employment, or end up paying significantly higher interest rates for mortgages.

Some major cities have put limits on Airbnb rentals. Homeowners can only rent their principal residence, and rooms in it, on Airbnb. This could put several thousand units back on the market. Homeowners and investors simply cannot afford to carry the units as the return from yearly rentals is much smaller than from daily rent. This addition to the housing supply (an eight percent increase in March in Toronto) during the economic crisis could add to the downward pressure on housing prices.

Ex-urban, rural, and remote communities may be desirable living places. They could permit lower costs alongside the convenience of online delivery and fewer interactions/hot spots for diseases.

Office and retail space could also see a big hit. Many businesses with Class A office space (e.g. banking, insurance, investment, law, and accounting) may have a smaller footprint because of automation, virtual work, sector consolidation, or bankruptcy. In addition, physical distancing requirements call for more square meters by employee, which makes office space more expensive.

## **Income inequality: Accelerated and deepening**

The trend of income inequality is likely to accelerate. Many low-income people have lost jobs and assets. At the same time, skilled and professional workers have kept their salaries, benefits, and homes. Automation or a recession could deepen these inequalities.

Many low-paid front-line workers have risked their lives to keep essential services going. Will they demand a new deal? Current short-term income support programs could raise expectations that a new deal is possible.

## **Inequality: New possibilities could emerge**

New kinds of inequality could emerge as the pandemic continues. Single parent families make up 20 percent of households (of which 81 percent are lone mothers). This group faces barriers to labour markets. It has struggled with kids at home and could continue to do so if kids cannot go back to affordable day care, school, or summer camps.

People on low income can face several disadvantages. They may be unable to self-isolate or practice physical distancing. Their kids may go to a poor school or have no money for Internet, tablets, etc. Home schooling may not be possible. They may lack a house that can accommodate a separate space for a home office, making it hard to work from home. They may not have a car, and so face health risks from public transit use. They may have limited or remote access to health care.

Finally, vulnerable groups are less able to return to the workforce. They may remain in isolation for months or years until a vaccine is available. This group includes seniors and those with compromised health, representing 10–20 percent of the population.

Will reopening the economy create new inequities? Will those who can return to the job market earlier get the first job opportunities? Will new job opportunities privilege people who are well-off because they have more physical space in their house and faster Internet? Will some schools open and others stay closed? Will poorer areas end up with higher density classes with less space between students? Will some people be allowed to travel and others not? Will ex-COVID-19 patients be given special privileges because people don't believe they can be infected again?

Young people may demand greater equity among the generations. As PHC discussed in the [Next Digital Economy](#) paper, youth already feel less prosperous compared to previous generations. They might feel they are “paying” more than their fair share when factoring in their precarious jobs, low income, burden of national debt, etc. A narrative is already circulating that youth have lost their freedom and livelihoods by protecting older people from COVID-19.

Will the public tolerate giving special advantages to some groups of people to address new inequities? Will old inequities be addressed? Will new fault lines emerge? Will new and existing disadvantaged groups accept the status quo? Or will we see increasing demands for change or accommodation?

## **Pensions: Can providers meet their obligations?**

Public and private pension plans carry investments that may take years to recover. The collapse in energy prices, the coronavirus, and geoeconomic tensions could ricochet through the Canadian economy for years.

Banks and the Canada Pension Plan (CPP) have dramatically reduced their direct exposure to the oil and gas sector over the last few years. It represents one to two percent of major bank and CPP portfolios. However, a significant part of the Canadian economy still depends on oil, gas, coal, and related services and infrastructure. For example, energy stocks represent 17 percent of the S&P/TSX Composite Index. These are included in all passive investment vehicles for this index. Falling energy prices, stock valuations, stranded assets, and lower royalties to governments could be a drag on the economy and thus slow recovery of pension investments.

Beyond energy, pension funds confront other issues. These include slow economic growth, low interest rates, and high government debt due to economic support and stimulus packages. Such issues could further undermine the ability of banks and the CPP to meet obligations. Recession, depression, or dramatic shifts in global trade rules would make matters even more challenging.

Payments from personal investments, as well as from public and private pension plans, could be reduced. If that happens, seniors, disabled, and other vulnerable people could depend more on the state. This growing dependence would occur just as government revenues are falling and prejudice against older people is rising.

It also generates broader questions. How will this impact the willingness of younger generations to pay taxes and contribute to pension funds? How will it change investment behaviour if people have no old-age security and need to build it themselves?

## **Strategic economic sovereignty: how far does this go?**

We are seeing signs that governments worldwide are accelerating plans to achieve strategic economic sovereignty—programs to secure strategic resources and economic inputs.

“A strategic resource is an asset that is valuable, rare, difficult to imitate, and non-substitutable. It gives countries and businesses an opportunity to develop a competitive advantage over rivals.” In June 2019, the U.S. Government identified 35 minerals whose supply chains were seen as essential to the prosperity and security of the country.

The commodities that are considered “strategic resources” are shifting. For instance, there is a global surplus of oil, but growing demand for lithium and other rare earth minerals for batteries and electronic components. In a post-COVID-19 world, food—or water or phosphate for fertilizers—might be considered strategic resources.

Geopolitical rivalry for strategic resources may increase in several ways. Great powers or local hegemons might take over resources or related governments by force, bribery, or outright purchase. China has been investing in strategic mineral operations all over the world for decades.

An alternative scenario would be to innovate. The U.S. plans to invest in increasing the supply of strategic resources through new mining surveys and techniques, recycling and reprocessing, and the invention of technological alternatives.

An open liberal trading system assumes the purchase of supplies on the open market at market prices. It benefits from low costs and efficient allocation. However, that assumption might be risky. Local innovation and production of strategic resources may strengthen. Over time, this could have an impact on Canadian mining and manufacturing, for example.

## **Supply chains: “Smart supply chains” are needed**

There is pressure to reconfigure supply chains to be more resilient. A number of options and implications exist to unwind or re-invent a globalized economy.

Three broad options are possible following an end to the intense COVID-19 pandemic period:

- De-globalization or a return to local/national supply chains: for essential goods with no substitutes (e.g. surgical masks), production could be reshored and be done locally. Exports may be restricted as needed.
- Resilient global-regionalism: a continued but more geographically diversified, globalization of value chains that marry resilience with economic benefits. For important goods with possible substitutes (e.g. food), a hybrid approach would incentivize local production, but allow trade to keep prices competitive during non-crisis times.

- Globalization 2.0: where design of the value chain depends on the nature of the good and its importance. For most goods not critical for survival and where a competitive price is a key factor (e.g. a smart phone), efficient globalized supply chains would serve the public interest.

In the medium term, a set of smart technologies (e.g. artificial intelligence [AI], 3D printing, and synthetic biology) will transform manufacturing. One can imagine Canadian manufacturing units participating in global supply chains and, in a crisis, repurposing quickly to serve local or national needs.

The demand for “short supply chains”—which can be costly, inefficient, and not resilient—might need to be redirected toward a demand for “smart supply chains”.

Supply chains for robust and resilient services in times of crisis are worth exploring. AI, telepresence, and robotics can bring expertise and presence for assistance, support, care, repairs, and ongoing essential services in a protracted crisis. Some of it could be programmed into the products and infrastructure built over the next decade.

## **Role of the state in the economy: Rebuild or innovate?**

A variety of demands could push governments to play a larger and more forward-looking role in the economy. At the same time, governments may be under pressure to cut budgets, reduce costs and, perhaps innovate.

In a period of economic stagnation or recession, individuals and businesses might avoid taking further risks and expect long-term financial support from the government. What happens if the economy does not pick up? Do the same support programs continue? What if many loans are not repaid? Does the government resell these assets or perhaps try to revive them with new business models (e.g. worker-owned coops)? As the government becomes effectively the guarantor against these risks, does it place new conditions on the loans to satisfy broader social, economic, and/or environmental objectives? Does the government attempt to redirect the stimulus instruments to specific challenges (e.g. build a renewable energy grid to address climate change)?

An overarching question for governments is whether to rebuild the old economy, or support innovation and transform the economy. Either way, governments play a role. If they choose to rebuild the old economy, then the old toolkit in a “shareholder model” may work. If they choose innovating to build equity, resilience, and sustainability, then a “stakeholder model” may be needed, in which government is a catalyst and facilitator.

## **Public debt: How will the public acceptance of debt evolve?**

How will taxpayers feel about the increased debt? As the costs of the COVID-19 response become evident, will taxpayers resent the tax burden required for social supports, or will they continue to express empathy in the medium term?

For how long will citizens expect the government to continue supporting the economy? And how does that line up with the expectations of a classic, free-market economy? Is a new economic model emerging?

Some considerations go beyond the debt created to support the wages of citizens. Support systems put in place by many developed economies might change the relationship between the state and businesses. Governments in many countries have temporarily nationalized the economy. They have become the guarantor of last resort. Citizens and residents — taxpayers — have taken on much of the risks for many businesses. Will citizens expect new conditions on how businesses behave, or how they are forced to behave? How will citizens think about bailout plans for businesses for sustained lockdowns and recovery? For example, would an insurance company that failed to lower rates while people are no longer driving their cars receive further support? Would banks that made loans (enabled by QE) mostly to large corporations receive further support? Will there be more demand for fairer wages for low-income workers? A higher commitment to sustainability?

## **Migration**

Immigration is needed to attract the right talent to grow an economy or to acquire temporary labour in specific sectors such as agriculture and fisheries. However, this has become more complex due to public health considerations. Some countries and communities may actively discourage or ban internal migration or immigration as an existential threat for two reasons. First, they may fear a lack of effective response to COVID-19 in the countries supplying the immigrants. Second, they may fear becoming the source of the next pandemic.

A limited supply of “safe” foreign temporary workers could generate international competition. Health considerations could also become part of migration agreements between countries.

At a global level, new waves of massive migration could occur from and within regions where the pandemic has accelerated famines, conflict, economic collapse, or failed states, especially in Africa and the Middle East.

# THE NEXT DIGITAL ECONOMY AND THE FUTURE OF WORK

The pandemic has brought into light many aspects of the [Next Digital Economy](#) and of the [Future of Work](#), which PHC has previously addressed.

The transition to a digital economy and the game changers affecting the amount and nature of work are likely to accelerate because of COVID-19. Many examples have already become mainstream. These include remote work, repurposing of multi-functional manufacturing platforms, onsite 3D printing where goods are needed, and temporary value chains. Changed behaviours, mindsets, and business models will have an impact on the future. Four aspects are considered here.

## Automation: Probable acceleration

COVID-19 has created a production shock because humans could no longer function in production/value chains. This had a tremendous cost for the economy, and for many businesses. Robots are more robust than humans. Businesses and other institutions are likely to make stronger business cases for adopting technologies and funding innovations that reduce or eliminate humans from the production value chain.

The trend toward automation might also occur due to the lack of required human resources. For example, in a COVID-like world, temporary farm workers are less easily available; cleaning personnel in the home or across enterprises are less desirable; and there are not enough delivery truck drivers to respond to increased demand from online shopping.

Previous PHC work noted the rate of automation relies on more than technical feasibility. It also depends on social acceptability and regulation, both of which will likely favour more automation. For example, policy makers may be pressured to create and adapt safety policies governing autonomous vehicles.

## Remote work: Remote cognitive and physical work is likely to accelerate

Due to containment measures, many employees have been equipped to work from home, and learned how to work remotely. As a result, they could experience both its benefits and inconveniences. While organizations often had reservations about staff working from home, they now have a real-life pilot. What worked and what did not? What can be done remotely and

what cannot? What flexibilities and boundaries/safeguards are sensible? Learnings from the current situation are likely to bring more flexibility to remote working.

The option of working from home might have secondary impacts. For example, informal research shows soon-to-be-retirees prefer to stay in the labour force if they can continue working from home. If this arrangement became more available and acceptable, would career professionals postpone retirement?

Another aspect is the notion of being “present” or “in person.” Some functions legally require people to be present, provide “wet” signatures, and so forth. Yet court hearings, notary and legal services, government services, insurance claim inspections, etc. are all rapidly adapting to a world where people are not physically present. Adaptations during the pandemic to remotely deliver legally binding services will likely continue after the end of mandatory physical distancing.

PHC’s [\*Future of Work\*](#) report addressed the idea that “where people work and earn may not be where they live and spend.” It noted that “local” has been challenged as an important staffing consideration for many jobs. Whether employees were living close to their workplace did not matter. Indeed, for a number of jobs, remote and onsite work functioned equally well. This might change assumptions for hiring.

The report also noted that advanced telepresence would allow workers to perform physical tasks from a remote location. This included the idea of “tele-grunt” services, where offsite experts use telepresence to direct low-skilled workers in carrying out complex tasks. If human contact remains undesirable/dangerous or unfeasible due to travel restrictions, this type of practice might increase.

## **Employer–employee relationships: Less long-term employment is likely**

The [\*Future of Work\*](#) report notes the changing relationship between employers and employees as a key game changer. Long-term, more formal employment was already declining before the pandemic. The financial insecurity/turbulence faced by businesses and the economic downturn will likely accelerate the growth of nonstandard, precarious employment—part-timers, gig workers, and those with multiple employers. This comes when people will likely be looking for more financial security for years/a generation to come, and the prospect of being a gig worker or independent might be less attractive. The demand for universal basic income or universal basic assets, as well as for arrangements such as portable benefits systems, is likely to increase.

## **Digital infrastructure: An increasingly critical foundation**

As much of our economy, lives, and government services have been migrated online in a gulf of innovation, the underlying digital infrastructure becomes increasingly critical. Access to, and resilience of, digital infrastructure will likely become more important.

Cyberattacks on digital infrastructure are increasing. With a longer-term perspective, the need/expectation for more attention to the security and resilience of this crucial infrastructure is clear. Possible increased tensions in international relations might also play a role in these reflections.

From a societal perspective, demand for access to this infrastructure as a public good could also increase. This is especially true if other public services increasingly use digital infrastructure and access is revealed as a key determinant in outcomes. Such services could include education, health, and government services.

## SOCIOECONOMIC

### **Life & livelihood: Will the economic, public health, or social imperative prevail?**

How will governments frame the relationship between the economy and social institutions in the management of and recovery from the pandemic?

On the one hand, an economy-first or a public health logic may prevail. In this case, governments could face difficult choices that pit health needs against scarce economic resources. Any benefits at one end might be cancelled out by a loss at the other. For example, it could set the safety of more vulnerable populations against a desire to stop the continuing destruction of private wealth. Investment in health could also come at the expense of economic opportunities for both workers and investors. In this light, younger generations might feel resentment. Would they think responses to the pandemic are forcing them to pay an unfair price to reduce risks to older generations? In dire circumstances, a “survival of the fittest” mentality could emerge.

On the other hand, a social-first logic could reframe problems posed by the pandemic as opportunities. How can governments create abundant quality of life by strengthening supportive social institutions, building resiliency, and alleviating inequalities? The pandemic has demonstrated the extent to which economic activity rests upon social services and systems, such as childcare, education, household and community relationships, and public health capacity.

An emphasis on social wellbeing could create conditions for government to re-evaluate investments in the social institutions that support individual and community development throughout the human lifecycle. The pandemic may expose gaps and opportunities for early childhood development, entry into the labour force, and care for the elderly.

### **Economic opportunity: Who enters the economy first has economic and social implications for years to come**

The economy is likely to be reopened in stages to balance the risk between public health and the economy. Decisions about who goes back and when—led by provincial strategies, employer preferences, and employee circumstances—could shape the opportunities and life chances of different groups.

Here is a broad set of considerations of short-term realities that could affect long-term prospects:

- Essential workers on the front lines are more likely to be women and visible minorities. As a result, these populations could bear a higher risk of burnout and infection. Will wage subsidies to these workers lead government and society to value their work more in the longer term?
- Those who can continue to work remotely could be expected to return last to shared workplaces, leaving this population both healthiest and least affected economically.
- Early job displacements disproportionately affected women (services). The need for childcare and fewer job openings may increase gender disparities. Childcare and schools require close physical contact and social gathering to supervise children. Without access to childcare and schools, who can return to work? Does the decision reinforce “traditional” gender roles? Early adjustments at home could be lasting. However, a prolonged closure of the economy could later edge deeper into male-dominated employment in goods production.
- Single parents, particularly on low incomes, may have fewer options about whether they return to work and return their children to school/daycare, unless they receive subsidized childcare or paid leave assurances. Parents who can keep their children at home may choose to do so, or be asked to, in order to limit class sizes.
- A shift to single-income households will test the resiliency of those depending on two incomes. This is true in financial terms, as well as for each partner’s satisfaction with their role.
- There will likely be more job seekers than positions, placing downward pressure on wages. Shift schedules to enable physical distancing could also reduce hours and earnings.
- Early career job displacements deeply affect youth and precarious workers.
- To the extent employers can choose who returns to work, they may favour young and healthy workers who are more likely to rebound if infected.
- Questionable forms of COVID-19 risk assessment could arise. This could enable discrimination based on age, race, gender, class, or health to influence which workers return or are hired.

## **Social unrest: Will it come, when, and from where?**

COVID-19 arrived when concerns over inequality were already widespread; discontent had been linked to the growth of populism. As a result, the pandemic prompts uncertainty about the future of social peace. Crises that threaten basic human needs often provoke momentous

social disturbance. The chances of these disturbances increase in proportion to pre-existing levels of dysfunction.

Arguably, inequality has yet to prompt a transformative disruption in Canada. This could be due to a basic social safety net, social deference, a certain approach to individual responsibility, and the distraction provided by entertainment culture. Will COVID-19 change that? The pandemic has exposed existing inequalities and their disproportionate impacts on racialized communities, women, children, the elderly, and Indigenous peoples in ways that are difficult to ignore. A slower economy and more competitive job market post-pandemic may well deepen these pre-existing inequalities and extend them to more people.

In the future, inequality may affect more citizens. The contrast between the masses and the elites may grow clearer. And governments may appear unable or unwilling to respond. Such a future is primed for upheaval. However, this outcome is far from certain. For example, the Government could expand social supports, build resiliency, or redistribute wealth. An interesting question is whether emerging digital media and entertainment culture would absorb and redirect unrest, or amplify it.

Beyond the occurrence (or not) of mass protest, the location of any protests might also change. Like so much else, protest could play out more extensively online. This would be supported by increased mainstream online experience, sustained physical distancing rules, and increased surveillance in the physical world. Future protests and infrastructure blockages might happen online.

## **Charities: A sector at risk**

The pandemic has hit the charitable sector hard. Many traditional sources of fundraising such as benefit events have dried up even as demand for some charitable services is overflowing. In the short and medium terms, a more difficult economic landscape might also reduce both charitable giving and volunteering.

Large, well-connected, broad-based charities are most likely to access emergency funding and adjust to the new fundraising environment. But many smaller, specialized charities may not survive. This is a problem because the small ones disproportionately serve the most vulnerable populations, such as sex workers or marginalized persons in remote communities.

This dynamic could increase demands on government to provide services directly to communities with which it has fewer direct contacts and less experience. On the other hand, the pandemic could lead to innovative ways to support the rich and diverse ecosystem of small charities.

## **Social cohesion: Are we really “all in this together”?**

Will the sense of shared vulnerability to a health threat, and shared experiences of pandemic response bring Canadians together in new ways? Will excluded populations feel that we really have been “all in this together” as Canadians? And will privileged members of Canadian society feel increased connection to marginalized communities?

The pandemic has cast a stark spotlight on the many inequalities of Canadian society. In many ways, it has worsened the effect of those divisions. Poor and homeless Canadians have been especially at risk, as have elderly Canadians in institutions and some Indigenous populations. There will be many opportunities for casting people as “others”, as well as blaming groups for spreading the virus, or for not playing their part. This could lead to a retrenchment of antagonistic group identities.

But the pandemic has also brought inspiring stories of compassion and empathy to light. In some cases, it has coaxed out our best capacities for cooperation, selflessness, and charity. Bonds forming between neighbours, communities, regions, and generations may provide examples of how groups overcome differences. Will these be replicated and generate community resiliency, or abandoned after the intense phases of the pandemic end?

## **Millennials & Generation Z: How will the pandemic affect their perception of economic and social opportunities?**

Will Millennials and Generation Z acquire the tools to be more or less resilient through the pandemic and after? Youth were already experiencing difficulties due to the fallout from the Great Recession and the negative impacts of the changing nature of work. Consequently, they may re-engage in both the economy and society at different speeds.

The nature of social engagement is thought to be heavily influenced by the conditions in place when people enter adulthood and attempt to join the workforce. Will young people retreat into fear, caution, and conservative spending habits? Or will they blossom after being empowered to achieve life opportunities and financial wellbeing? Young Canadians will judge the role and legitimacy of government based on how well they see themselves and their values reflected in its responses to the pandemic.

There is also uncertainty about how young generations will form relationships if human contact is restricted during their formative development. Will the loss of daily rituals and rites of passage permanently mark these generations? On the other hand, multigenerational living that provides unpaid care and reduces living expenses may become a new normal. If so, connections may intensify within extended families and groups of housemates.

## **Reconciliation: Will shifting to focus on the COVID response set back or propel relations with Indigenous peoples?**

By challenging some core policy assumptions, COVID-19 may create space for more serious acceptance of Indigenous systems and cultural innovations. This may be particularly true in terms of treatment of older community members; connection with the land through food security and more local travel; and Indigenous teachings that “people can be medicine” and “the land is medicine.”

The vulnerability of underserved communities may attract attention. All Canadians face challenges that highlight the importance of basic infrastructure, communications, and social supports. Will financially strapped Canadians and increasingly indebted governments prioritize resolving land claims and other specific claims? Will a strong desire emerge to address historical and continuing inequalities through reparations and new investments in the future?

## ENVIRONMENT

### **Climate change: Is space opening for a holistic agenda?**

The COVID-19 pandemic and climate change share some similarities. They both refer to biological processes not always easy for human ingenuity to control. They will both have major impacts economically and socially, evoking the sentiment that “we are all in it together.” And they both represent a level of existential risk, requiring significant rethinking and restructuring of the economy.

Will the pandemic spur a greater desire to tackle climate change? Or will desires for an economic recovery push environmental concerns aside?

The global response to COVID-19 will occupy the same years that are crucial to address existential threats for human survival from climate change. There is no “other budget” of funds or time to tackle this “quick emergency” and “long emergency” separately. On the other hand, stakeholders and leadership across different sectors might use the opportunity created by the COVID-19 pandemic to drive a more holistic agenda.

# GOVERNANCE

## Anticipatory governance: Rising demand?

Many observers argue that lack of preparation for the pandemic was a failure of governance, not of foresight. In 2015, Microsoft founder Bill Gates delivered a TED talk on lack of readiness for a pandemic. In 2018, health security organizations ran intricate simulations of rapidly spreading pandemics. In 2019, the World Health Organization warned of the increasing risk of a significant pandemic.

Even with the most complete data, and knowing there was an emerging health crisis in December, governments, on average, waited 1.5 months after the first reported case to take strong measures such as lockdowns.

Humans have short memories, it is often said. However, after traumatic events, memories might be longer. Canadians may watch more closely to see if the Government prepares better for the "next time" a large disruption hits. As a result, the Government may be called upon to put in place stronger systems for foresight, anticipatory governance, and decision making.

## Democracy: On a slippery slope?

Crises such as wars and pandemics produce extraordinary government responses, which often amplify state authority at the expense of civil liberties. This generates a critical uncertainty about the health of democracy and potential growth of authoritarianism in a post-pandemic world. Will autocrats arise to fight a "war" against the virus? Or will competent responses and open information practices of democratic governments revive faith in democratic institutions?

In response to COVID-19, authoritarian regimes have consolidated or expanded their powers. Democratic states have also taken steps to restrict citizen movement and assembly, while deploying new technologies to put citizens under surveillance. In some cases, the surveillance has provoked social unrest couched in terms of resistance to state tyranny. Such unrest could grow—even in countries with strong traditions of trust and deference. It would likely arise if the pandemic persists or intrusions on civil liberties are not rolled back as the crisis abates. These developments might revitalize citizens' commitment to democratic oversight and participation, but could also make populist anti-establishment movements more attractive.

Similarly, democratic publics may see the actions of authoritarian states as more effective responses to COVID-19. They may also value the authoritarian-type measures of some democratically elected governments. If so, they might accept diminished civil liberties. This

could weaken strong democracies and push some weaker democracies worldwide to the brink of collapse.

Elections in an era of physical distancing are another important issue. The first rescheduling of elections has already occurred, which can be a slippery slope for democracies.

## **Surveillance social contract: How much data and privacy are citizens willing to give up in exchange for collective and individual safety?**

The surveillance society has been growing for decades. In response, a highly individualistic view of privacy has been advanced to protect against government or private intrusion. The COVID-19 pandemic could change this dynamic. Will citizens accept, or even demand, new surveillance measures to limit the potential for further outbreaks? Once introduced, surveillance measures tend to stick around.

During and after the pandemic, the question may no longer be “should we live in a surveillance society?” Instead, it may be “what makes for a good surveillance society that is appropriate for an open democratic society?” Until now, the privacy debate has focused on whether individuals can “control” their personal information. It may shift to the general conditions that should be set for large data analysis systems that operate in the background.

These shifts might force us into a more nuanced and less ideological discussion about the relative social benefits of privacy and surveillance. New ways of gathering and processing data, ranging from data trusts, mesh networks, encryption, and anonymization schemes may offer a range of new options. Privacy may not always be on the chopping block when surveillance rolls out.

The pandemic makes these questions practical and urgent. Emirates Airlines is already performing COVID-19 blood tests on travelers. What systems will manage the potential for extracting enormous amounts of genetic and epigenetic information from these same samples? Governments in Asia and even in western nations already use other means to conduct public health surveillance. Examples include mobile phone data, CCTV footage, facial recognition, temperature checkpoints, travel bookings, financial records, social media, and even drones.

Beyond questions about surveillance for public health, the broader issue revolves around how data from surveillance should affect individuals’ opportunities and life chances. Citizens in democracies may move closer to accepting restrictions to their mobility based on information about their infection status. If so, might businesses, employers, and other individuals evaluate and treat individuals based on their shareable personal indicators of health?

## **Solidarity: Will the pandemic mobilize people to address societal issues?**

Effective responses to a crisis such as COVID-19 require national-level mobilization of economic and social resources. This, in turn, demands extraordinary levels of solidarity and coordination among government, industry, and citizens. The outcomes of such mobilization and its impact are uncertain.

Success could inspire widespread belief that focused national mobilization can address persistent complex problems. At the same time, such a belief might undermine confidence in free market solutions. This might inspire grassroots movements to sharpen demands on governments to address chronic challenges, such as inequality, reconciliation, or climate change. These groups could harness the same energy displayed during the acute crisis of COVID-19. At the same time, success against COVID-19 could encourage governments to improve how they connect with citizens.

On the other hand, timid leadership, poor communications, lack of coordination, or scarcity-induced hyper-individualism among citizens could undermine effective mass mobilization. This, in turn, could shatter confidence in government and collective decision-making. That would make effective national responses to both long-standing and novel challenges much more difficult.

## **eGovernance: Launched amid a rapid prototyping phase on a large scale**

Given that gatherings are seen as a risk to public health, parliaments—which convene hundreds of people in one room—have been rethinking how they function. Digital transformation of the machinery of government will be key, as will the manner in which parliamentarians interact with their constituents. New technologies may help government engage with all sectors of Canadian society, from all geographical corners, including vulnerable communities. This could allow for the co-creation of critical social and economic policy and initiatives. Apart from allowing easier access to parliamentarians, for example, e-technologies could help citizens take part in public policy and democratic debate, while preserving the principle of Cabinet confidence.

The pandemic has also forced a rapid move toward online methods of decision making, a process once predicted to take years rather than days. This period may be considered a rapid prototyping phase of eGovernance on a large scale. The experiment may create demands for

sustained investments in and implementation of innovative digital technologies. These would be expected to strengthen the resilience of the economy and of public service delivery.

Uninterrupted data connectivity and data sharing could help governments provide a seamless citizen experience. As more citizen services go online, cybersecurity concerns loom large.

## **Fiscal federalism: Federal government as funder, lender, and guarantor of last resort?**

The federal government may be pressured to be the lender of last resort across multiple sectors affected by the pandemic. The energy, travel and hospitality, and service industries, are particularly hard hit. Important cultural institutions such as arts venues and sports organizations are also vulnerable. International travel for business and tourism could take a long time to come back; if they do, they may be at significantly lower levels. Other sectors may never come back in the same way.

Cities may need to be bailed out, and municipalities are calling for emergency federal funding. Behaviours adopted during the crisis, e.g. virtual meetings and online grocery shopping, may continue after the pandemic ends. This would have significant negative impacts on commercial and retail spaces, urban infrastructure, and public transit—these are significant sources of revenue and investment for many cities and support large numbers of people in the secondary economy.

Given the magnitude of the crisis, provincial governments may also be unable to absorb costs and borrowing requirements on their own. Provinces are legally responsible for their own debt. However, bond markets may assume the federal government is, in practice, a guarantor.

New demands by provinces to support industries concentrated within their borders could change the dynamics of federal equalization. This, in turn, could challenge assumptions about how fiscal federalism operates. Observers also suggest the federal government develop a framework for conditions to be applied to provide financial support. The COVID-19 crisis could present a critical juncture for economics, policy, and fiscal federalism in Canada, with opportunities for transformative change.

## **Trust in government: A rebound to nurture**

In Canada, trust in government (as well as in medical experts and scientists) appears to be on the increase during the first months of the pandemic. Major crises require governments to take extraordinary measures with consequences for citizens' health, economic, and social

situations. Open communication and successful policy responses could continue to enhance popular trust in government. However, significant failures in either area would almost certainly have the opposite effect.

At some point, temporary government support and stimulus packages will unwind. But as science clarifies the trajectory of the virus, there could be additional waves of shutdowns for public health reasons. A difficult and interrupted period of restarting the economy could create challenges for decision making, communication and trust in government.

Trust will need to be nurtured and earned. Otherwise, distrust could feed on resentments about how some public servants are insulated from economic hardship. The politics of blame could degrade citizens' respect for public decision makers. Finally, prolonged insecurity might make populations more vulnerable to disinformation about the pandemic, and undermine commitment to the common good.

In the longer term, shifts in trust due to COVID-19 create critical uncertainties in several areas. These include citizens' engagement with democratic processes and institutions, their orientation toward knowledge authorities, and even their continued adherence to the social contract. These have profound consequences for both the health of democracy and social solidarity.

## INTERNATIONAL GOVERNANCE

### International leadership: Competitive, collaborative, or fragmented?

The rules-based international order (RBIO) and multilateral institutions were already under stress before the pandemic. Their future was highly uncertain and debatable. Would they be patched up to maintain the old order, abandoned, or adapted? Or would new but well-functioning kinds of collaborations and agreements emerge? All those options are still plausible, but the pandemic and its consequences have accelerated the debate.

Many observers note the concept of the RBIO might be shaken beyond repair because of COVID-19. After all, it did not deliver on its promise in a situation that was in everyone's interest to solve everywhere. Trust between nations and in the multilateral system has been broken amid the crisis.

As an alternative to a multilateral organization, the idea of an alliance among like-minded nations could gain traction. The patchwork responses to the pandemic will reveal differences in values between cultures and major economies. Different countries will shape their exit strategies differently, with different underlying motivators. Some will put more weight on the economic imperative. Others will emphasize the public health imperative. Still others may focus on the autonomy imperative.

Still, renewed international collaboration—even in an adapted shape—is possible. Success would depend on the presence of legitimate leadership that desires to collaborate. Such leadership emerged amid tense circumstances such as the aftermath of the Second World War and in the late 1980s between the U.S. and the former Soviet Union. Upcoming elections in key economies will provide signposts on the possibility of pragmatic collaboration.

Will the world's leadership rise to the challenge? Its decision will have profound consequences on everything from the movement of people and redesign of value chains to the potential of collective action on other global issues such as climate change.

### COVID-19 accountability: Who answers and for what?

Across the world, assigning blame for the COVID-19 pandemic continues, and it is linked to a complex web of diplomatic and economic international relations. Several initiatives in different countries are exploring how to hold the Republic of China accountable for the economic fallout and human lives lost. Examples are the U.S.-based class action lawsuit and Australia's probe

into the option of an independent tribunal. The developments and their ultimate outcomes can be defining for future trade relations, election outcomes, and social cohesion.

## **International solidarity: How will the world help developing nations manage COVID-19?**

The consequences of COVID-19 have reached emerging economies and developing nations. The health crisis will likely worsen existing crises in food and nutrition, as well as autocratic rule. Some developing nations will also face loss of income due to low oil prices. Will developed economies focus on their own social and economic problems? Or will they come together to help developing nations? The answer will provide some indication as to the future of international institutions.

## **Other shocks: What's next?**

Global attention is focused on containing the health, social, and economic consequences of the pandemic. However, this focus may neglect other sensitive conditions that might develop into major crises. The possible resurgence of Boko Haram and ISIS are just some examples.

# Annex

External stakeholders and experts who contributed to the conversation (to May 7, 2020)

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