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COVID-19 and the Need for Dynamic State Capabilities: **An International Comparison**

by Mariana Mazzucato, Rainer Kattel, Giulio Quaggiotto and Milica Begovic

UNDP GLOBAL POLICY NETWORK

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COVID-19 AND THE NEED FOR DYNAMIC STATE CAPABILITIES:
AN INTERNATIONAL COMPARISON

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Abstract

Early lessons from countries' responses to COVID-19 show the importance of investing in a combination of both long-term capacities and dynamic capabilities in the public sector, including the ability to meaningfully interact with other value creators in society such as the private sector and citizen innovators.

Drawing on examples from across emerging markets, the paper identifies a number of such capabilities, and argues that they will be critical for governments in the aftermath of the crisis and in rebuilding economies and societies.

Foreword by Mariana Mazzucato and Achim Steiner

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More than one year into the COVID-19 pandemic crisis, we are still far from grasping its long-term implications for the developing world, which are likely to be far-reaching and wipe out decades of progress on fighting poverty and gender inequality. As the global crisis continues, it triggers new issues such as vaccine inequity and escalating debt, presenting governments with an ever-growing list of interconnected challenges. It is still too early, therefore, to draw definitive lessons on the most effective responses to the pandemic.

But what we can already say is that some of the early black-and-white predictions about countries' abilities to manage the crisis did not hold true. For example, as this paper shows, many countries in the developing world have handled the sanitary and public-emergency response quite successfully, particularly if compared to more advanced economies. Meanwhile, in some developed countries, the hollowing-out of the public sector, whether due to outsourcing or privatization, have hindered the pandemic response.

This complex crisis has required that we revisit our mental models and resist easy dichotomies, such as between the state and the market. What matters is how different value creators come together, how they are governed, and what organizational capabilities they have.

Effective governance cannot be conjured up overnight but rather requires long-term investments: something for which UNDP and the UCL Institute for Innovation and Public Purpose (IIPP) have been strongly advocating. It is only a public sector that has developed a combination of long-term capacities and dynamic capabilities that is able to engage effectively with different sectors of society and the economy to carry out the comprehensive response needed to weather a pandemic.

This paper identifies some key capabilities as they emerged from governments' responses in the developing world. They include capabilities to: create dynamic safety nets for workers; design contracts that foster bottom-up experimentation so that public funds have a higher multiplier and crowding-in effect; yield a proactive relationship with data and digitalisation; and foster partnerships. The same combination will be crucial to build resilient and inclusive societies in the long term.

It is our hope that documenting these examples will encourage policymakers across the world to ask what can be done to take stock of the extraordinary efforts made by the public sector under condition of duress and turn them into a "new normal" where "agile stability" is invested in and placed at the center of government. Given many competing priorities and fiscal constraints, it will require forward-looking leadership to do so. Both our organisations stand ready to help.

Introduction: The role of the public sector in fostering resilience and a summary of key recommendations

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Government agencies and ministries came together, fully mission-driven; walls and turf boundaries were broken down. Everyone is thrown into the same mission, driven by the same purpose, and suddenly there are no silos.

Leo Yip, Head of the Singapore Civil Service

The COVID-19 pandemic presents a massive challenge for societies, and specifically governments, worldwide. "COVID-19 is far more than a health or socio-economic crisis; it is also a governance crisis, testing not only the resilience of governance systems and public sector institutions to adapt, function, and innovate in their delivery of public services, but also exposing underlying vulnerabilities in the social contract."[2] Governments in emerging markets are particularly tested, having to address dilemmas such as how to ensure compliance with social distancing in high-density areas like urban slums, how to provide social protection for returning migrant labourers, or how to tackle the compound effects of the pandemic and natural hazards (from locusts to typhoons).

The pandemic response also requires an unprecedented level of collaboration between public and private sectors domestically and internationally, from the race for a vaccine to rethinking global supply chains. One of the biggest lessons is that public-sector capabilities to manage a crisis of this proportion are dependent on the cumulative investments that a state has made in its capacities to govern and manage. These prior investments in the form of institutions, infrastructure, human resources and public-private partnerships provide the public sector with a greater set of options to choose from when facing emergency conditions such as a pandemic response. The pandemic has shown that capacities to provide 'core government functions' — such as the ability to raise adequate revenue, provide core executive coordination of key tasks, and establish public administrations to provide public services[3] — provide vital building blocks for agile crisis responses.

The crisis has also brought to light fundamental vulnerabilities in many societies, which are particularly evident in the gendered impacts of the pandemic: "Virtually every society and community depend on women for safety and resilience during the crisis, from essential care, childcare, domestic work, to maintaining other essential sectors such as retail and food supply. Women health care and community workers comprise more than 70 percent of the frontline pandemic workforce."[4] The pandemic threatens to undermine key developmental gains of the last decades. Thus, governments' responses should aim to build long-term resilience as capacities and capabilities to, "Protect people and planet; preserve gains across all the Sustainable Development Goals (SDGs); ensure equality; promote transparency,

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[2] UNDP. (2020). Integrating Transparency, Accountability and Anti-Corruption in Socio-Economic Impact Analyse. Available at: https://www.undp.org/content/undp/en/home/librarypage/democratic-governance/anti-corruption/integrating-transparency--accountability-and-anti-corruption-in-.html.

[3] UNDP. (2019). Do Fragile and Conflict-Affected Countries Prioritise Core Government Functions? Available at: https://www.undp.org/content/undp/en/home/librarypage/democratic-governance/conflict-prevention/do-fragile-and-conflict-affected-countries-prioritise-core-gover.html.

[4] UNDP. (2020). Women Peace and Human Security: A Guidance Note on Parliamentary Engagement During and Post-Covid-19. Available at: https://www.undp.org/content/undp/en/home/librarypage/womens-empowerment/Women-Peace-and-Human-Security-Covid-a-Guidance-Note-on-Parliamentary-Engagement-During-and-Post-Covid-19.html.

accountability, participation, and collaboration; increase solidarity; and place the voice, rights and agency of people at the center."[5]

Effective governance cannot be conjured up overnight and, while the crisis is serious for all, it is especially a challenge for countries that have ignored investments in both long-term capacities[6] and in what we can call the 'dynamic capabilities of the public sector.'[7] One of the key aims of the current paper is to show why this combination — the need for both long-term capacities and dynamic capabilities — is highly relevant for building resilient and inclusive societies and economies, both in the developed and developing world.

Public-sector capacity is typically defined as the set of skills, capabilities and resources necessary to perform policy functions, from the provision of public services to policy design and implementation.[8] The public sector bears responsibility for the long-term resilience and stability of societies through developing and nurturing long-term capacities, and for agilely responding and adapting to changing environments through the dynamic capabilities nested in said capacities.[9] The pandemic has shown, first, that such 'agile stability'[10] matters greatly in the public sector and, second, that there are areas in which

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[5] UNDP. (2020). Checklist for a Human Rights-Based Approach to Socio-Economic Country Responses to COVID-19. Available at: https://www.undp.org/content/undp/en/home/librarypage/democratic-governance/human_rights/checklist-for-a-human-rights-based-approach-to-socio-economic-co.html (Accessed 13 December 2020).

[6] Francis Fukuyma. (2020). The Pandemic and Political Order. It Takes a State. *Foreign Affairs*. Available at: https://www.foreignaffairs.com/articles/world/2020-06-09/pandemic-and-political-order.

[7] Mariana Mazzucato and Rainer Kattel. (2020). COVID-19 and Public Sector Capacity. *Oxford Review of Economic Policy*, 2020.

[8] Xun Wu, Michael Howlett and M. Ramesh, eds. (2018). *Policy Capacity and Governance: Assessing Governmental Competences and Capabilities in Theory and Practice*. London: Palgrave Macmillan.

[9] Rainer Kattel and Mariana Mazzucato. (2018). Mission-Oriented Innovation Policy and Dynamic Capabilities in the Public Sector. *Industrial and Corporate Change* 27, no. 5 (1 October 2018): 787–801. DOI: https://doi.org/10.1093/icc/dty032.

[10] Rainer Kattel, Wolfgang Drechsler and Erkki Karo. (2019). Innovation Bureaucracies: How Agile Stability Creates the Entrepreneurial State. UCL Institute for Innovation and Public Purpose. Available at: https://www.ucl.ac.uk/bartlett/public-purpose/publications/2019/dec/innovation-bureaucracies-how-agile-stability-creates-entrepreneurial-state.

capacities and capabilities are critical for governments in the aftermath of the crisis and in rebuilding economies and societies, namely:

- Adapting and learning in the face of incomplete, at times conflicting, information and radical uncertainty;

- Aligning public services and citizen needs;

- Governing resilient production systems and capabilities to foster symbiotic public-private collaborations and tapping into citizen innovation;

- Capacity to govern data and digital, including handling the 'infodemic' while balancing human rights protection; and

- Inter- and intra-governmental learning and coordination (including at different levels of government, e.g., federal and local, inter-ministerial and international).

These capacities and capabilities not only allowed for a more effective response, but created the conditions for an unprecedented level of innovation in and by public organisations — from public procurement to repurposing of infrastructure — to tackle the emergency. Some developing countries have shown impressive capabilities in responding to the pandemic, leading to better outcomes than many developed countries.[11]

Conversely, the pandemic has also revealed that governments which neglected these core capacities and dynamic capabilities have limited options to deal with emergencies, as they are more prone to fall prey to (technological) solutionism (e.g., tracing apps advertised as a panacea), have limited negotiating

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[11] Ngaire Woods. (2020). The brutal governance lessons of 2020. Project Syndicate. Available at: https://www.project-syndicate.org/commentary/governance-lessons-from-covid19-explaining-us-uk-failure-by-ngaire-woods-2020-12.

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power vis-à-vis corporates and struggle to galvanise all parts of society towards a coherent response. Indeed, the trend of outsourcing capabilities to the private sector, including consulting companies, presents a dangerous trend if it means such capabilities become weaker in the public sector. In the same way that we need public-private partnerships, we need to understand the capabilities in both the public and private sectors.

The question ahead is, therefore, what can governments do to create the conditions that foster both long-term capacities for stability and resilience, and dynamic capabilities for response and change, and reap what has been called the COVID-19 'innovation dividend'?[12] This working paper provides a set of concrete recommendations.

In terms of long-term capacities, governments should:

- Aim to build strong core government functions and necessary capacities such as competent public service, (digital) infrastructure for public-service delivery and transparent institutional frameworks for new social contracts. The social contracts should aim to deliver transformational changes nested in the SDGs as the yardstick for long-term resilience.

- Clearly articulate – in the form of a political consensus – how they aim to achieve long-term resilience and what is the public value they aim to provide. This helps to renegotiate the 'deal' between public and private actors, build capabilities to 'design' better public-private partnerships and enables ambitious agenda-setting and lays the foundations for new partnerships based on the ideas of public value and long-term resilience.

- Build institutions that enable the implementation of resilience-driven developmental plans. Governments can use the array of existing instruments (public procurement, policy missions, challenges, etc.) plus the new models emerging from the crisis to set clear directions for private-sector investment towards innovation systems that are based on sustainability, equality, protection of human rights and privacy and political impartiality.

In terms of dynamic capabilities, governments should:

- Build in-house capabilities and skills focused on adaptability and learning. These capabilities should be built both on an institutional level (i.e., through simulations, protocols for ongoing sensemaking and exploration of alternative futures, or deploying policy assessment frameworks built on knowledge diversity) and on an individual level through skills development and training.

- Governments should strive to democratise innovation: create new interfaces (e.g through public procurement) and diffusion mechanisms for citizen innovators to engage continuously with wider segments of the society, including the public and private sector. Such activities also serve as checks and balances on incumbent stakeholder networks and can serve to curb corruption and increase transparency (e.g., in procurement).

- Build data infrastructure and public digital platforms that enable the provision of both truthful evidence and information to combat disinformation and cybersecurity issues, and also enable equitable access to public services.

- Explore new mechanisms to accelerate cross-cutting learning: create peer-to-peer networks for intergovernmental learning, an international clearinghouse for grassroots innovations and agile international regulation for crisis times.

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[12] Kal Joffres. (2020). COVID-19 and the Innovation Dividend. Regional Innovation Centre UNDP Asia-Pacific blog. Available at: https://medium.com/@undp.ric/covid-19-and-the-innovation-dividend-d36c922f8df7; Martin Stewart Weeks. (2020). Can we declare a COVID dividend? Blog. Available at: https://publicpurpose.com.au/can-we-declare-a-covid-dividend/.

Public sector capacities and capabilities cannot be conjured up at will: emerging lessons from the COVID-19 pandemic

2

We are witnessing the largest experiment in comparative governance we are likely to see in our lifetimes. The virus is the control variable.[13]

Benjamin Bratton

We know how to bring the economy back to life. What we do not know is how to bring people back to life.[14]

Nana Akufo-Addo, President of Ghana

2.1 Public sector capacities and capabilities

Public-sector capacity is typically defined as the set of skills, capabilities and resources necessary to perform policy functions, from the provision of public services to policy design and implementation.[15] The capacities associated with the public sector tend to be narrow and focus on stability (i.e., continuity, transparency, predictability of services and interventions) and external sources of dynamism (i.e., private-sector practices or individual leaders). This in many ways reflects the impact of new public management (NPM), which gathered momentum in the 1980s and basically argued that governments should adopt private-sector strategies to maximise value in the public sector. NPM policies were widely implemented in advanced economies in the 1980s and 1990s, in particular in the UK, New Zealand and Australia.[16]

In development theory and practice, the market-failure-based approaches coalesced in the 1990s around the so-called Washington Consensus policies focused on deregulation, opening up domestic markets, and relying on foreign direct investments and exports to drive economic transition and growth.[17] Since then, while there have been attempts at going beyond NPM[18] and the Washington Consensus,[19] a proper framework has not been developed that can understand how the state is responsible not only for fixing markets, but also for shaping and co-creating them — and the capacities and capabilities needed to do

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[13] Benjamin Bratton. (2020). 18 Lessons of Quarantine Urbanism. *Strelka Mag* blog. Available at: https://strelkamag.com/en/article/18-lessons-from-quarantine-urbanism (Accessed 7 August 2020).

[14] Eromo Egbejule. (2020). Is Ghana the model the developing world needs against the virus? Available at: https://www.ozy.com/around-the-world/ghana-model-developing-countries-coronavirus-pandemic/321842/.

[15] Wu, Howlett and Ramesh. *Policy Capacity and Governance: Assessing Governmental Competences and Capabilities in Theory and Practice.*

[16] hristopher Hood. (1991). A Public Management for All Seasons? *Public Administration* 69, 1 (1991): 3–19. DOI: https://doi.org/10.1111/j.1467-9299.1991.tb00779.x.

[17] John Williamson. (2002). What Washington Means by Policy Reform. Peterson Institute for International Economics. Available at: https://www.piie.com/commentary/speeches-papers/what-washington-means-policy-reform.

[18] M. H Moore. (1995). *Creating Public Value: Strategic Management in Government*. Harvard University Press.

[19] Dani Rodrik. (2006). 'Goodbye Washington Consensus, Hello Washington Confusion? A Review of the World Bank's Economic Growth in the 1990s: Learning from a Decade of Reform,' *Journal of Economic Literature* XLIV (2006): 973–87.

that.[20] In our view, the key lesson from COVID-19 is that the theory and practice of capacities needs to be complemented by the theory of dynamic state capabilities.

There are three kinds of academic literature touching upon dynamic capabilities: first, the Weberian tradition of long-term capacity building in the public sector for development[21] and generally for public policies;[22] second, literature inspired by Schumpeter looking at new and often peripheral 'change agents' or 'innovators' in the public sector[23] and, more recently, at agile digital units and innovations labs;[24] and third, attempts at synthesising the above two perspectives into a single conceptual proposition of organisational configurations[25] that deliver simultaneously the long-term stability of Weberian capacities and the agility of Schumpeterian innovators.[26]

[20]Mariana Mazzucato, Rainer Kattel and Josh Ryan-Collins. (2020). Challenge-Driven Innovation Policy: Towards a New Policy Toolkit. *Journal of Industry, Competition and Trade* 20, no. 2: 421–37. DOI: https://doi.org/10.1007/s10842-019-00329-w.

[21]Peter Evans. (1995). *Embedded Autonomy*. Princeton: Princeton University Press; Peter Evans and James E. Rauch. (1999), Bureaucracy and Growth: A Cross-National Analysis of the Effects of "Weberian" State Structures on Economic Growth. *American Sociological Review* 64, no. 5 (1999): 748–65. DOI: https://doi.org/10.2307/2657374; James Rauch and Peter B. Evans. (2000). Bureaucratic Structure and Bureaucratic Performance in Less Developed Countries. *Journal of Public Economics* 75, no. 1 (2000): 49–71. Available at: https://econpapers.repec.org/article/eeepubeco/v_3a75_3ay_3a2000_3ai_3a1_3ap_3a49-71.htm.

[22]Martin Painter and Jon Pierre. (2005). Unpacking Policy Capacity: Issues and Themes. In Martin Painter and Jon Pierre, eds., *Challenges to State Policy Capacity: Global Trends and Comparative Perspectives*. London: Palgrave Macmillan, pp. 1–18. DOI: https://doi.org/10.1057/9780230524194_1; Wu, Howlett and Ramesh. *Policy Capacity and Governance: Assessing Governmental Competences and Capabilities in Theory and Practice*.

[23]Dan Breznitz and Darius Ornston. (2013). The Revolutionary Power of Peripheral Agencies: Explaining Radical Policy Innovation in Finland and Israel. DOI: https://doi.org/10.1177/0010414012472466; Dan Breznitz, Darius Ornston and Steven Samford. (2018). Mission Critical: The Ends, Means, and Design of Innovation Agencies. *Industrial and Corporate Change* 27, no. 5 (1 October 2018): 883–96. DOI: https://doi.org/10.1093/icc/dty027.

[24]Amanda Clarke. (2019). Digital Government Units: What Are They, and What Do They Mean for Digital Era Public Management Renewal? *International Public Management Journal*, 2019, 1–31. DOI: https://doi.org/10.1080/10967494.2019.1686447; Ines Mergel. (2019). Digital Service Teams in Government. *Government Information Quarterly* 36, no. 4 (2019). DOI: https://doi.org/10.1016/j.giq.2019.07.001; Piret Tõnurist, Rainer Kattel and Veiko Lember. (2017). Innovation Labs in the Public Sector: What They Are and What They Do? *Public Management Review* 19, no. 10 (26 November 2017): 1455–79. DOI: https://doi.org/10.1080/14719037.2017.1287939.

[25]Henry Mintzberg. (1989). *Mintzberg on Management. Inside Our Strange World Of Organizations*. New York and London: Free Press/Collier Macmillan. DOI: https://doi.org/10.1177/017084069001100414.

[26]Erkki Karo and Rainer Kattel. (2018), Innovation and the State: Towards an Evolutionary Theory of Policy Capacity. 2018, 123–50. DOI: https://doi.org/10.1007/978-3-319-54675-9_6; Kattel, Drechsler and Karo. Innovation Bureaucracies; Kattel and Mazzucato. Mission-Oriented Innovation Policy and Dynamic Capabilities in the Public Sector.

We argue that the emerging lessons from COVID-19, particularly in the development context, show the need for both long-term capacities and dynamic capabilities, and that their creative combination is highly relevant for building resilient and inclusive societies and economies both in the developed and developing world. The pandemic has shown that long-term capacities to govern provide, particularly in a development context, the basis for 'core government functions'[27] and, at the same time, vital building blocks for agile crisis responses. As the crisis has also brought to light fundamental vulnerabilities in many societies, particularly evident in the gendered impacts of the pandemic, governments' responses should aim to build long-term resilience that we can define as the capacities and capabilities to "Protect people and planet; preserve gains across all the SDGs; ensure equality; promote transparency, accountability, participation, and collaboration; increase solidarity; and place the voice, rights and agency of people at the center."[28]

We argue that the key to the idea of capacities and capabilities in the public sector is the concept of complementarities or partnerships with other social and economic actors. This entails showing the direction, through various policy options, in which private sector and society as a whole can *explore* and *exploit* existing and new economic and technological potential. In other words, partnerships are fundamental for creating spaces for investment and innovation. Building such partnerships, and trust around them, requires a relatively long-term mindset and policies, spanning a typical electoral cycle or two, and often summarised in national development and innovation strategies. However, all too often such strategies remain vague and non-committal, because governments actually lack the capacities and capabilities to implement them.

As the main lesson from the COVID-19 response in the developing world, we propose to distinguish between the following long-term capacities and dynamic capabilities:

Capacities:

- Capacity to set a direction for development

- Capacity to govern and direct resilient production systems

- Capacity to build public-service infrastructure

Dynamic capabilities

- Capability to anticipate, adapt and learn

- Capability to harness citizen initiatives and innovation

- Capability to govern data and digital platforms

2.2 Long-term capacities

COVID-19 is proving to be a huge test of governments' capacity to lead societies through crisis. In the absence of sufficient data and unequivocal evidence, policymakers have to take "100% of decisions with 50% of the knowledge," as Dutch Premier Rutte put it.[29] Under these circumstances of 'forced experimentation,' the immediate response to the epidemic outbreak has put a premium on public-sector capacities and capabilities such as the ability to:

[27] UNDP Do Fragile and Conflict-Affected Countries Prioritise Core Government Functions?

[28] Checklist for a Human Rights-Based Approach to Socio-Economic Country Responses to COVID-19.

[29] Zack Newmark. (2020). 'Everyone Stay Home' If Sick, Many Events Banned: Dutch Government Tightens Coronavirus Rules. NL Times. Available at: https://nltimes.nl/2020/03/12/everyone-stay-home-sick-many-events-banned-dutch-government-tightens-coronavirus-rules.

- Ramp up production, create new services and coordinate supply chains (often in conjunction with the private sector);

- Identify the most vulnerable members of society and distribute, adjust and expand safety nets and public services accordingly;

- Govern data and digital infrastructure (including the ability to fight disinformation);

- Galvanise different parts of government and different sectors of society around a common agenda.

Countries around the world have differed significantly in their performance, partially due to questions of leadership at different levels across government, but they have also been largely constrained in their options by previous investments (or lack thereof) in core services and capacity building. Effective governance, it turns out, cannot be conjured up at will, it requires focus on long-term missions for development and patient investment strategies to implement the missions.[30]

(i) Capacity to provide core government functions and set missions for development

20th-century development success stories relied on overarching national development agendas that focused on catching up. Today we see reformulation and refocusing of such growth-oriented agendas towards mission-oriented policies that aim to solve underlying socio-economic challenges.[31] Taking up the challenge posed by Richard Nelson in his seminal *Moon and the Ghetto* (1977), modern-day mission-oriented policies focus not on technological or economic challenges alone, but rather on areas traditionally the responsibility of public services, such as education or the welfare state, and entail changes across various economic and policy sectors. Policies tackling grand challenges should thus be broad enough to engage the public, enable concrete missions and attract cross-sectoral investment, yet remain focused enough to involve industry and achieve measurable success. By setting the direction for a solution, missions do not specify how to achieve success, but rather stimulate the development of a range of different solutions to achieve the objective. In other words, missions guide entrepreneurial self-discovery.[32]

Kerala, India

The case of Kerala shows the importance of building long-term capacities driven by a mission-oriented approach. Kerala's exposure to risk of virus transmission is heightened by its being a large tourism hub and by its most valuable export — skilled workers — who are responsible for more remittances than anywhere else in India.

From the very beginning, Kerala's COVID-19 strategy was to delay the coming peak with contact-tracing efforts that helped contain the spread of the virus in its initial phases,[33] giving the state sufficient time to prepare (e.g., doubling the number of ventilators and training a 'COVID brigade'), so that the peak would be lower.[34] While the initially successful COVID-19 response, which won global praise, was followed by a substantial surge in infections, "At no point have more than a quarter of its ventilators been occupied, and on 1 December, fewer than one in 10 intensive care beds were filled."[35]

There are several factors that seem to have played a role in Kerala's management of COVID response.

[30]Mariana Mazzucato and Guilio Quaggiotto. (2020). The Big Failure of Small Government. Project Syndicate. Available at: https://www.project-syndicate.org/commentary/small-governments-big-failure-covid19-by-mariana-mazzucato-and-giulio-quaggiotto-2020-05.

[31] Mariana Mazzucato. (2017). Mission-Oriented Innovation Policy: Challenges and Opportunities. UCL Institute for Innovation and Public Purpose. Available at: https://www.ucl.ac.uk/bartlett/public-purpose/publications/2017/sep/mission-oriented-innovation-policy-challenges-and-opportunities.

[32]Mariana Mazzucato. (2018). Mission-Oriented Research & Innovation in the European Union : A Problem-Solving Approach to Fuel Innovation-Led Growth. Publications Office of the European Union. Available at: http://op.europa.eu/en/publication-detail/-/publication/5b2811d1-16be-11e8-9253-01aa75ed71a1/language-en.

[33]https://www.who.int/india/news/feature-stories/detail/responding-to-covid-19---learnings-from-kerala

[34]Laura Spinney. (2020). How KK Shailaja and her 'Covid brigade' won a victory against the virus. The Guardian. Available at: https://www.theguardian.com/lifeandstyle/2020/dec/22/how-kk-shailaja-and-her-covid-brigade-won-a-victory-against-the-virus.

[35]Ibid.

One, and the most difficult to replicate in a crisis, is the state's long-term investment in human development — it has one of the highest literacy rates in India and better health outcomes then the rest of the country.

Two, the mix of draconian lockdown measures that were put in place before the national ones[36] (closed schools, banned gatherings, a quarantine period that is double that of the national one, namely 28 days, and aggressive testing and contact-tracing) were matched with social outreach policies. Such policies included home-delivered meals to children who couldn't attend school, communication channels to combat fake news, shelter and meals for thousands of citizens (including special provisions for over 150,000 migrant workers from other states), safety nets for the most vulnerable citizens and mental health helplines (psychosocial services have reached over 11.5 million people). In other words, the response has been characterised by an all-of-government and all-of-society action bounded by trust and compliance.

Three, community engagement has gone hand-in-hand with the top-down state response. A 'Break the chain' awareness campaign promoted hand hygiene, physical distancing and cough etiquette; thousands of WhatsApp neighborhood groups[37] were set up to reinforce key safety measures as advocated by the government; and community kitchens provided over 9 million free meals to migrant workers and vulnerable populations.

Four, the institutional memory from the successful management of two major floods and an outbreak of a virus in 2018 resulted in a series of effective emergency management protocols that have become baked into the way government works. For example, before its first recorded COVID case, 15 health districts in Kerala had set up control rooms to monitor the situation and coordinate responses, and two hospitals in each district were designated to treat the virus-infected patients. This has also oiled the social contract between society and the state, reinforcing compliance and trust.

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[36] https://link.springer.com/article/10.1007/s41775-020-00087-1

[37] https://www.who.int/india/news/feature-stories/detail/responding-to-covid-19---learnings-from-kerala

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Rwanda

Rwanda offers another example of how mission-driven investments into long-term capacities enabled a dynamic crisis response during the pandemic. As of 7 September, over six months since its first COVID case, Rwanda has just over 4,300 confirmed cases with 17 deaths – these statistics are all the more impressive considering that it is a landlocked country with one of the continent's highest population densities. By comparison, the state of Ohio in the US has a similar population with more than 130,000 cases and 4,259 deaths.

Several factors have characterised the response:

One, in spite of falling in a low-income category (per capital income is roughly $818), Rwanda provides nearly universal health care to its 13 million citizens. All the testing and treatment for the virus is provided free of charge, health workers call or visit every potential contact of someone who has tested positive, and a national helpline was instituted early for anyone concerned they may have contracted the virus. The government's investments in preventing Ebola from crossing the border from the DRC and combating HIV were repurposed for COVID-19, from handwashing stations in critical locations to thermometer checks for each individual entering the country to various response protocols that were deployed before the first case of the virus was even registered.

Two, the government instigated an early and robust nationwide response – medical staff started screening at border entry points and at Kigali airport, nationwide testing was implemented almost a month before the first case was registered and there was a massive communication campaign (via SMS, radio, TV and social media). The response focused on preventing the health-care system, with very few ICU beds and respirators, from becoming overwhelmed. Only three days after registering its first case, Rwanda was the first country on the continent to institute a full lockdown, which also triggered a systematic tracing campaign utilising community health-care workers, police and college students (with mandatory quarantine for those who had been in contact with the infected in government-paid hotels and apartments). This was complemented with robust social policies, including implementing fixed prices on food goods across the country, capping the amount of each product an individual can buy each day, and providing food relief to over 20,000 of the hardest-hit households in Kigali and other urban centres, including feeding the 64% of its workforce that operates in the informal sector.

Three, and partly connected, long-term investment in basic services has proven a fertile ground for disruptive and frugal innovations. To manage the high cost of testing (between $50 and $100), Rwanda instituted 'pool testing,' which means conducting a single test on combined samples of 20 to 50 nasal swabs. Only if a test is positive does each swab get tested individually, allowing the government to test thousands of samples a day cheaply. Previously used to deliver essential medical products such as blood donations, drones are used to blast information about physical distancing and government-enforced lockdown measures.

Four, long-term investments in technology gave the government more options for responding to the pandemic, from deploying human-sized robots for delivering supplies to sending continuous SMS messages. In a country where 81% of the population have a mobile phone, unstructured supplementary service data (USSD) infrastructure has also been leveraged to enable citizens to self-triage, seek the right medical care and obtain permission to leave their homes for essential services. The country has gone cashless with government waiving all mobile money transaction fees in order to halt the spread of disease via cash bank notes, and mobile phone data is used to track compliance with physical distancing The electronic-based tracking system in all health clinics allows the government to track potential compounding risks, such as missed vaccinations among children, thereby potentially preventing cascading emergencies (e.g., a measles outbreak on top of the COVID pandemic).

The Rwandan government's response has also raised questions around abuse of power and the protection of human rights.[38] The recent Universal Periodic Review found that Rwanda 'continues to drive efforts

[38] Human Rights Watch. (2020). Rwanda: Lockdown Arrests, Abuses Surge. Available at: https://www.hrw.org/news/2020/04/24/rwanda-lockdown-arrests-abuses-surge; Nicholas Bariyo. (2020). Rwanda's aggressive approach to COVID wins plaudits — and warnings. Wall Street Journal. Available at: Rwanda National Commission for Human Rights. (2020). Assessment of the impact of anti-COVID pandemic measures on human rights in Rwanda, from March to October 2020. Available at http://cndp.org.rw/fileadmin/user_upload/Assessment_of_the_impact_of_anti_Covid-19_pandemic_measures_on_Human_Rights_in_Rwanda___Final_Report.pdf.

aiming at ensuring that every Rwandan enjoys the fundamental human rights.'[39] Government has a wide-ranging collaboration with UNDP on human rights, including the instances that arose as a result of COVID-related restrictions.[40] The challenge of integrating human rights and rights-based approaches into social and economic responses to COVID-19 and to the recovery has been a theme across regions.[41]

(ii) Capacity to govern and direct resilient innovation systems

In order to build robust and resilient domestic innovation systems, governments need to invest in their capacities to work with private actors, academia and third-sector organisations. Governments need to be able to build partnerships with business around a common purpose.[42] However, bolstered by increased trade liberalisations since the early 1990s, production value and supply chains have become increasingly vulnerable. As Robert Wade succinctly argues, international trade regulation are "Not about limiting *companies*' options, as 'regulation' normally connotes; rather, they are about limiting the options of developing country governments to constrain the options of companies operating or hoping to operate within their borders."[43] Since the early 2000s, new global rules have become even more stringent and the combined use of intellectual property, dispute regulations and non-tariff barriers have limited the policy space of developing and emerging economies. In other words, international trade policy has severely limited the policy space available for developing countries. This in turn means that countries from Latin America, Eastern Europe and Africa have not developed any significant policy capacities to cooperate with industry. The COVID-19- crisis has laid bare these weaknesses in public sector capacities to steer and manage technological change and innovation systems. However, it has also created an opportunity for governments to recapture industrial and innovation policy space.[44]

During the pandemic, India, which as of February 2020 was a net importer of PPE, has become, within months, the second largest manufacturer of PPE in the world, due to the concerted efforts of the government and key textile-industry players. In Ethiopia, the employers' confederation, labor unions and the government agreed on a tripartite protocol to prevent layoffs during the crisis. Government subsidies have enabled manufacturing exporters to benefit from zero-cost rail transport and lower export logistics costs. And the government zeroed in on industrial-parks, repurposing them as manufacturing hubs to produce personal protective equipment for domestic and overseas markets.[45] As part of its COVID recovery plan, the Thai government has announced plans to redirect R&D spending towards businesses that support "local communities, the bio, circular and green economy, and innovation-based industries," signalling a shift towards greater sustainability moving forward.

Senegal

Even though it has a scarcity of beds and only seven doctors for every 100,000 people, Senegal's response to COVID has been ranked by Foreign Policy as the second most efficient globally, trailing only New Zealand. The key differentiators of Senegal's response seem to be a mix of rapid pre-emptive response, clear communication, experience with previous emergencies (e.g., the 2014 Ebola outbreak) and the mobilisation of a broader ecosystem (researchers, scientists, citizens) for compliance and innovation. More than six months into the pandemic, the numbers are telling – the country of 16 million people has recorded just over 14,000 cases and 300 deaths.

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[39] National report 'Universal Periodic Review' for Rwanda accessed at: https://www.ohchr.org/EN/HRBodies/UPR/Pages/RWindex.aspx

[40] Assessment of the impact of COVID 19 pandemic measures on Human Rights in Rwanda, from March to October 2020. Accessed at: http://cndp.org.rw/fileadmin/user_upload/Assessment_of_the_impact_of_anti_Covid-19_pandemic_measures_on_Human_Rights_in_Rwanda___Final_Report.pdf

[41] UNDP. (2020). Lessons for human rights in the socio-economic response to COVID-19. Available at: https://undp.medium.com/human-rights-and-covid-19-7dd11769483e.

[42] Mariana Mazzucato. (2021). Mission Economy. A Moonshot Guide to Changing Capitalism. Allen Lane.

[43] Mazzucato, Kattel and Ryan-Collins. Challenge-Driven Innovation Policy.

[44] Toyin Abiodun, Maudo Jallow and Jonathan Said. (2020). Driving Africa's industrialisation on the back of COVID-19. OECD Development Matters. Available at: https://oecd-development-matters.org/2020/05/18/driving-africas-industrialisation-on-the-back-of-covid-19/.

[45] Arkebe Oqubay. (2020). Ethiopia's unconventional COVID-19 response. World Economic Forum/Project Syndicate. Available at: https://www.weforum.org/agenda/2020/06/ethiopia-covid19-response/.

The virus has given a purpose to the entire ecosystem of academia, researchers and start-ups and generated new kinds of collaboration with the country's health-care system. Senegalese researchers developed an immune-based diagnostic test for COVID available for $1 that yields results in less than 10 minutes. Medical and engineering students built a multifunctional medical robot to reduce the exposure of health-care workers to the virus and support case load management, and an automatic dispenser for hand sanitizer to reduce the need for supervising hand washing. Start-ups leveraged their foot in the health sector (e.g., health passports that allow doctors to access medical histories through QR codes) to launch a COVID-related public information platform meant to educate the wider population about measures for reducing transmissions and exposure to the virus. Others in the sector run real-time research (publicly released for others to use free of charge) into indications on the needs of the population, from community support and food provisioning to money transfers, moral support and health care follow-ups.

The government deployed a response plan as early as March, ramping up testing capacity with mobile labs and a 24-hour turn-over time for results. It restricted movement between its 14 provinces and provided a treatment bed for every person who tested positive (including those who were asymptomatic), thereby keeping patients from spreading the virus to family members. The intent of daily Ministry of Health briefings has been not just to provide data on infection rates and deaths, but to reaffirm the seriousness of the virus and provide widespread, consistent messaging and awareness for the public. This has led to a widespread compliance, with society adopting face masks and new protocols in public and private spaces.

Procurement plays a hugely important part in public spending in most countries and there is a growing awareness among policy-makers around the world that public procurement is potentially a powerful tool in shaping markets towards solving societal challenges. However, actual practice often lags behind policy rhetoric.[46] Mostly, it is the risk-averse and short-term-oriented public procurers and inflexible legal conditions that are seen as the key reasons behind the slow uptake of innovative procurement practices. While having short-term efficiency as the main public-procurement goal does not necessarily rule out

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[46]Veiko Lember, Rainer Kattel and Tarmo Kalvet. (2014). *Public Procurement, Innovation and Policy - International Perspectives.* Springer.

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possibilities to achieve innovation aims, the growing body of empirical evidence demonstrates that short-termism, e.g., preferring the lowest-cost bids, is perceived by the private sector as the main hindrance to innovation. For example, in Ukraine, the long-term investment in ProZorro, a platform to increase public procurement transparency in the health sector, paid off during the COVID crisis by facilitating demand consolidation for PPE as well as supplier engagement, thus enabling a more efficient information exchange between government, citizens, the private sector and trade associations.[47]

(iii) Capacity to build public services

To build resilient public services that are able to adapt to changing circumstances requires imbuing public-sector organisations, and the civil service in general, with a sense of purpose. Crucially, talented people are motivated not just by high salaries, but also by the prospect of being able to apply their skills for the advancement of the common good through challenging analytical work. Outsourcing has voided many government agencies of such challenging and motivating tasks. Furthermore, incentives for risk-taking and experimentalism can be put in place in order to foster an environment where failure and learning from failure are not only permissible, but encouraged. Agile bureaucracies require highly motivated, high-capacity (career) civil servants.[48]

COVID-19 has shown that governments need to have a much better understanding of what are essential services, both public and private. It has also shown that there is space for radical institutional innovations such as temporary universal basic income.[49] Most public services require both long-term investment and also built-in flexibility to adapt to changing circumstances and needs.

Vietnam

In Vietnam, a country of 100 million people that shares a 1,500 km border with China, the government was quick to recognise the complexity of the problem and close its borders. Here again the investments in long-term capacities in the form of public-health infrastructure and services (emergency operations centres and surveillance systems) made in response to SARS epidemics paid off and provided the country with a broader set of options when facing COVID-19. The government proved to have the necessary organisational strength to foster a whole-of-society approach,[50] using public procurement and R&D funding to engage both academia and the private sector in the production of low-cost testing kits,[51] becoming one of the first countries to export them to Europe. The Ministry of Health cooperated with telecom companies to launch an app that helped citizens put in place a 'neighbourhood watch system' to complement official contact-tracing efforts (although it raised questions of privacy[52]). The same whole-of-society approach was also effective in tackling misinformation through consistent and creative messaging (from Vietnam's famous poster artists to an SMS public communication tool, all the way to the 'Jealous Coronavirus' pop song that went instantly viral), to temporarily repurposing garment production to mask production, and driving a strong acceleration towards e-commerce and e-government. Citizens chipped in with initiatives such as the ATM for rice (set up by a private entrepreneur distributing free, 'contactless' rice to those in need) and the 'pink bakery' initiative (using the excess supply of dragon fruit caused by the closure of the border with China for all sorts of baked products, from pizzas to the traditional banh mi)[53].

[47] Vasyl Zadvornyy. (2020). How open contracting approaches help Ukraine to tackle COVID-19. Open Contracting. Available at: https://www.open-contracting.org/2020/04/16/how-open-contracting-approaches-help-ukraine-to-tackle-covid-19/.

[48] Wolfgang Drechsler and Rainer Kattel. (2020). Debate: The Developed Civil Servant – Providing Agility and Stability at the Same Time. *Public Money & Management*, 40:8, pp. 549–551. DOI: https://doi.org/10.1080/09540962.2020.1729522.

[49] UNDP. (2020). Temporary Basic Income to protect the world's poorest people could slow the surge in COVID-19 cases, says UNDP. Available at: https://www.undp.org/content/undp/en/home/news-centre/news/2020/Temporary_Basic_Income_to_protect_the_worlds_poorest_people_slow_COVID19.html.

[50] Robyn Klingler-Vidra, Ba Linh Tran and Ida Uusikyla. (2020). Testing Capacity: State Capacity and COVID-19 Testing. Global Policy. Available at: https://www.globalpolicyjournal.com/blog/09/04/2020/testing-capacity-state-capacity-and-covid-19-testing.

[51] Caitlin Wiesen, Ida Uusikyla and Phan Hoang Lan. (2020). Emergency innovation key to COVID containment is central to recovery in Viet Nam. UNDP. Available at: https://www.vn.undp.org/content/vietnam/en/home/presscenter/articles/frmEmergencytoInclusiveInnovation.html.

[52] Todd Pollack, Guy Thwaites, Maia Rabaa, Marc Choisy, Rogier van Door, Duong Huy Luong, Dang Quang Tan, Tran Dai Quang, Phung Cong Dinh, Ngu Duy Nghia, Tran Anh Tu, La Ngoc Quang, Nguyen Cong Khanh, Dang Duc Anh, Tran Nhu Duong, Sang Minh Le and Thai Pham Quang. (2020). Emerging COVID-19 success story: Vietnam's commitment to containment. Available at: https://ourworldindata.org/covid-exemplar-vietnam.

[53] Robin Vydra and Ba-Linh Tran (2021), Voices from Vietnam: The role of innovation in Vietnam's Covid-19 response and recovery. Availabe at: https://www.vietnaminnovation.com/

Mongolia

The experience of Mongolia, with a population of 3.3 million dispersed on a land mass the size of Western Europe, in responding to COVID is another case that indicates the importance of investing in basic social infrastructures – in this case the advanced preparedness, robust preventative systems, universal education (female literacy is 96.4% and male 93%), communication and digital connectivity. By early January and well before COVID was characterised as a pandemic, Mongolia initiated aggressive, preemptive country-wide control measures that included closure of educational institutions (kindergartens, primary/secondary schools and vocational schools, universities and libraries), a travel ban and an aggressive public-awareness campaign (helped by widespread coverage and use of mobile phones, internet, radio and TV). Advertisements promoting national new-year celebrations were replaced with COVID-19 public awareness campaigns informing the public about how to halt the spread of the disease. The population at large adopted face masks, even though, unlike other Asian countries that have used masks due to dust or air pollution, in Mongolia this had not been a common custom. As education shifted to a distance mode, the government introduced multiple methods of support, including a mandate that salary-earning parents and guardians of children younger than 12 years of age should work remotely, a reduction of in-office work hours for everyone else, seven to 14 days of paid leave for carers of sick children, and a social-security payment waiver for six months.

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2.3 Dynamic capabilities

(i) Capability to anticipate, adapt and learn

Our group was among the first to sequence SARS-CoV-2 in Africa. We achieved this because we are building capacity for next-generation sequencing for other research purposes, including malaria-parasite genomics. When the pandemic hit, we quickly redirected those resources and personnel to work on sequencing the virus.

Gordon Awandare, Director, West African Centre for Cell Biology of Infectious Pathogens, University of Ghana[54]

So what elements of effective anticipatory and learning capabilities have become evident during the pandemic? We argue there are at least four areas where dynamic capabilities to anticipate and learn have been crucial:

- **Foresight and anticipatory governance:** As many commentators have pointed out, the COVID pandemic was far from a 'black swan', but rather a 'black elephant': an event that had widely been anticipated by many governments, even though they had failed to prepare adequately for it. Some had even gone as far as to simulate a whole pandemic response exercise, but by the time COVID came the key personnel that had taken part had already left public service. Effective anticipatory governance, then, is not only the ability to imagine different possible (if unlikely) futures. It is also the ability to mobilise political will to continuously invest in horizon scanning; to create a shared understanding throughout the public sector and civil society of potential risks; institute the ongoing training of civil servants through simulations; and, crucially, creating emergency protocols to quickly mobilise cross-cutting units, free up budgets and enable data collection and sharing. South Korea, Mongolia, Vietnam and Kerala all had substantially revised their protocols for handling pandemics in the wake of past crises and had invested in building core capabilities and infrastructure to implement them. These capabilities have been quickly activated in response to COVID and, arguably, the political will to do this was a result of fresh memories of the SARS and Nipah outbreaks. Organisational and societal memory are another key component of effective anticipatory governance, and they are notoriously difficult to cultivate.

- **Handling partial, contradictory evidence:** The mantra of 'evidence-based policy' has resulted in a public sector that is often reluctant to take action in the absence of extensive assessments and the presence of definitive data that provides unambiguous arguments for or against a particular decision (whether that data is actually used in decision-making is, of course, a different matter). Unfortunately, these are exactly the conditions that are absent in the case of a pandemic, with COVID possibly providing an extreme case of this due to the scale and pace of the outbreak.[55] As John Kay and Mervyn King have argued, in the last decades the notions of 'risk' and 'uncertainty' have been gradually conflated, providing the illusion that it is possible to model and predict what are by nature unpredictable events. The advent of big data has created the impression that data scarcity is a thing of the past and human judgement can be replaced by incontrovertible algorithmic predictions. Governments that stood out in their COVID response, by contrast, have been able to acknowledge and clearly communicate the limits of their knowledge, explore different sources of data while recognising their limitations, and show a degree of humility to temper expectations in front of fast-changing circumstances. Given that it is anticipated that the compound effects of climate change and other risks will increase the frequency of emergencies in the future, it is essential that the public sector foster capabilities around decision-making in

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[54]Quoted in Nature. (2020). Science advisors around the world on 2020. Available at: https://www.nature.com/articles/d41586-020-03557-x.

[55]Ed Young. (2020). Why the Coronavirus Is So Confusing. The Atlantic, April 29, available at https://www.theatlantic.com/health/archive/2020/04/pandemic-confusing-uncertainty/610819/.

conditions of uncertainty, where quantitative judgement alone won't provide sufficient guidance to policy-making.

- **Mechanisms for 'mesh governance':** As Geoff Mulgan has noted, the key to success in COVID response "has not been a zero-sum game between centralisation and decentralisation. Instead it has depended on how well countries organise a mesh – an integration of multiple tiers, acting together, sharing data, lessons and insights." Vietnam provides a good example of such coordination between central vision and direction-setting, and local capacity to deliver, including in its response to a second wave of infections. Adaptability in the time of crisis can be enhanced through mechanisms for cross-ministerial cooperation, cross-cutting special units or new ways of coordinating federal, regional and city level governments. Perhaps one of the most dramatic cases coming out of the COVID crisis was the decision of the Victoria government in Australia to split into two: a government focused on the administration of the day-to-day order of business and a 'crisis government' focused around seven key COVID-related missions with the ability to galvanise different level of governments for the emergency response. In order for these forms of mesh governance to become 'the new normal,' governments will need to invest in new capabilities and organisational forms that help them break through the traditional siloed structure.

- **Quickly repurpose existing infrastructure:** The COVID response has provided plenty of examples of national and local governments repurposing existing infrastructure to respond to the crisis, from the Indian government's plan to repurpose 100,000 railway carriages as emergency rooms to Bogota replacing 35km of traffic lanes with temporary bike lanes. Some of these temporary 'hacks' have been turned into long-term policy commitments, with a number of cities, for example, committing to embrace the doughnut economic model and radically redesign their mobility plans. In certain cases, governments have been able to work closely with private-sector partners to repurpose production and distribution capabilities, from alcohol factories producing sanitiser to e-commerce platforms allowing rural farmers to sell their produce directly to consumers, thus redesigning supply chains. Here again, agility is built through and on top of long-term investments in capacity: investments in infrastructure provide greater options for the public sector to improvise and re-imagine systems under conditions of emergency; investments in core capabilities provide the ability and confidence to negotiate with the private sector on a peer basis; investments in building networks and trust can create a sense of common purpose across society.

- **Learning from other governments:** As the pandemic presents policymakers with rapidly-changing circumstances and constantly-updating, and at times contradictory, scientific evidence, the ability to learn from other governments that were successful in their containment measures has become paramount. While the scientific community seems to have been able to ramp up the level of global collaboration significantly, the international political environment has made the work of traditional fora of intergovernmental learning and exchange less effective. Under these circumstances, governments have had to rely more than before on their own horizon scanning capabilities, informal networks and regional or subregional exchange mechanisms to accelerate their learning.[56] The shift to digital working modalities and the large availability of online conferences and knowledge-sharing events has partially compensated for the lack of an effective intergovernmental learning infrastructure. Moving forward, governments keen on accelerating the pace of learning and experimentation in the face of emergencies will need to consider both bolstering their public sector capabilities to learn from other countries' experiences and investing in enhanced forms of intergovernmental coordination and learning (see below).

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[56]Xuemei Bai, Harini Nagendra, Peijun Shi and Haiyan Liu. (2020). Cities: build networks and share plans to emerge stronger from COVID-19. Nature. Available at: https://www.nature.com/articles/d41586-020-02459-2.

(ii) Capability to harness citizen initiatives and innovation

Just like an innovation policy focused on short-term efficiencies and fixing market failures can lead to a diminished capability to engage effectively with the private sector, so can it lead to the inability to harness another important source of innovation – citizens. The COVID pandemic has seen an extraordinary level of grassroots innovation and bottom-up peer-to-peer support initiatives. Citizens stepped in to fulfil unmet needs ranging from manufacturing equipment to collecting and analysing data, from providing support to the most vulnerable to creating websites to facilitate the distribution of masks. Dharavi, one of the world's biggest slums, where social distancing is impossible, provides a striking example of where self-organisation and community spirit (combined with support from the municipality) have so far averted a catastrophe that many thought was unavoidable.

Governments that have been effective in their response, like Vietnam, South Korea or West Java in Indonesia, proactively encouraged and integrated those initiatives into their efforts, using the clout of the government machinery to take them to scale. It has been referred to as 'reverse procurement': when citizens develop a workable prototype (e.g an online system to track mask availability) and the government uses its infrastructure and negotiating muscle to take it to production.

In Vietnam, in response to the call by the Ministry of Industry and Trade (MOIT), both businesses and citizens joined the effort to rescue agricultural products that were stuck at the border with China during the lockdown. These were mostly watermelon and dragon fruit. Many supermarkets procured these products with fair prices for farmers. Consumers also increased their purchasing of these products by three to 10 times in just a few days. Some innovative solutions emerged, such as using dragon fruits to make dragon fruit 'banh mi (Vietnamese baguette). One entrepreneur created this baking method and made it open source for anyone or any business to adopt. This then created a new trend of baking 'pink food' in the country, from KFC dragon fruit buns to dragon fruit pizza bases.

Dynamic capabilities that allow the public sector to harness innovations originated by citizens include:

- **The proactive use of innovation and R&D policies** to promote user/citizen-driven innovation and acknowledge citizens as a legitimate source of innovation alongside the private sector and academia. Such policies can be complemented with efforts to promote interfaces such as hackerspaces or fablabs, policies that encourage the right to repair and alternative instruments to patents, such as Creative Commons licenses that facilitate diffusion.

- **Public procurement** traditionally finds it difficult to allow for ideas or working solutions to be sourced from individual citizens. The adoption of open innovation instruments such as challenges and hackathons can help overcome such restrictions, as can collaboration with platforms that aggregate solutions from specific segments of the populations. For instance, a number of 'designers for COVID' initiatives have sprung up in different locations around the world to harness the talent of creatives to design new health equipment and platforms like Just One Giant Lab have galvanised biohackers across the world to come up with a design for a 300 USD qPCR for real-time COVID-19 testing.

- **Citizen-government collaboration pacts** proactively put in place mechanisms that allow a formal exchange of expertise between the public sector and private citizens to happen. They are a way to overcome the issue of citizens who offer assistance to their governments being turned down because they are not deemed as reputable as other sources of innovation, or the transaction cost to validate them is too high (or perceived to be too risky). The Office of Civic Imagination in Bologna provides an interesting example. It created 'citizen-government collaboration pacts' that give legitimacy to citizen-driven efforts to step in and provide services that the public sector is unable to perform. In the aftermath of the COVID crisis, the office initiated a Reimagine the City programme aimed at getting citizens involved in reimagining local services, including, for example, equitable delivery of emergency food supplies as an alternative to extractive ride-sharing services.

- **A clearinghouse of grassroots innovations**, a globally coordinated mechanism to acknowledge and document grassroots innovation, can, moving forward, help facilitate diffusion and encourage peer-to-peer support networks. Not all citizen innovators want to become start-up founders and many do not mind sharing their innovation for free so long as it contributes to the common good. The capability to harness this source of distributed R&D across the population can become a distinguishing feature of an effective public sector. UNDP has initiated such an initiative to document grassroots innovation in India.

Citizen-driven initiative Frena La Curva, or Slow the Curve, emerged to accelerate coping strategies, especially for the most vulnerable, such as the elderly, those with disabilities, the homeless or those otherwise incapable of taking care of themselves. While plenty of maps show how the virus spread, Frena La Curva shows how solidarity and people-helping-people resources spread in response to the virus. Thousands of volunteers curate information about public services and other resources online, targeting them geographically to specific areas and creating a repository of the close to real-time needs of vulnerable populations that NGOs, local services or others can respond to.

Building a distributed network of volunteers, the map is generating thousands of data points daily, connecting those who can provide support (pick up groceries, collect medicine or provide counseling by phone) to those in need by proxy, so those in actual need never have to learn how to navigate the technologically-based map. The initiative has quickly spread, but originally started in Spain and some of the success indicators for Spain are: 400,000 visits, 1,000 innovation initiatives, an online community of more than 1,000 people, referenced by UNDP, EU, IADB and OECD, and replicated in 16 other countries in Latin America and Europe (Portugal, Costa Rica, Ecuador, Chile, Mexico, Uruguay, Bolivia, Argentina, Colombia, France, Peru, Venezuela, Brazil, Guatemala, Germany, and Poland).

Indonesia

Originally set up as a loose network of volunteers to monitor the 2014 and 2019 elections in Indonesia, Kawal Covid-19 turned its grassroots power – comprised of data scientists and health experts – to tracking the spread of the virus in the country. In late spring, their data model influenced the provincial governor's decision to impose far stricter lockdown measures than had been previously considered by proving that there could be over 70,000 deaths by July in West Java unless this were to happen. Subsequently, in the absence of comprehensive data from the government, the group launched an 'alertness index' for each city and region in the country, featuring the numbers of confirmed cases, patients under surveillance, people being monitored. It also worked to counter online misinformation (e.g., smelling red onion is effective against Coronavirus) and crowdsource immediate support for protective gear for hospitals around the country. In a fairly tech-savvy country, other tech-based grassroots organisations are also emerging. LaborCOVID-19 (Report COVID-19) provides an alternative (or a complement) to publicly released citizen perception data on attitudes to and knowledge of dealing with the virus. Bagirata is a citizen driven "wealth redistribution platform" that facilitates peer-to-peer donations for citizens that find themselves suddenly in debt.

(iii) Capability to govern data and digital platforms

> *Nations urgently need to confront profound changes in data practice which will change our social contracts. The containment of Coronavirus is less a policy choice than a need to reform the machinery of government.*

> Mike Bracken, Government data: we are all in beta now

Another challenge has been the tsunami of information. I've never studied so much in my life, not even for my PhD. And this real-time scientific information has to be translated and applied almost immediately. What is really difficult is knowing how to communicate all this to non-scientists. There's so much nonsense and disinformation. I think vaccine communication — reaching people who do not want to understand that vaccines are game-changers — will take up much of my time for next year.

Eugenia Corrales-Aguilar, Virologist, University of Costa Rica

India

When it came to the delivery of cash transfers and protecting the most vulnerable, countries that had invested in digital IDs, mobile technology and financial accounts were able, once again, to tap into a broader set of options. In India, the government relied on the Aadhar infrastructure (which provides IDs to more than a billion people) to distribute the world's largest cash transfer programme, targeting 204 million women who were already enrolled in one of its existing financial inclusion programmes. Likewise, Pakistan was able to build on its existing digital ID system (which originated from the need to target people affected by floods) to organise the distribution of cash transfers to 16.9 million households across the country. The investments made to upgrade the Ehsaas (safety nets) digital infrastructure (such as a biometric payment system, an SMS and online demand service and data analytics) paid dividends during the COVID crisis, allowing the government to adapt and improvise new solutions while facing unprecedented circumstances. Bangladesh leveraged the in-house capabilities of its A2i digital transformation unit (co-funded by UNDP over the last 10 years) to include 5 million new people in its safety nets, create a sharing platform for doctors to provide virtual assistance and expand an existing e-commerce site to facilitate the distribution of food supplies to those in need. Digital ID programmes are no panacea to the challenge of providing universal social protection and have attracted scrutiny by privacy advocates and civil society for their potential misuse and discriminatory effects.[57] It is undeniable, however, that governments that invested in digital infrastructure and financial-inclusion capacities had a stronger base to build on under conditions of forced experimentation.[58] Governments that had to improvise from scratch, such as Togo — which, in response to COVID-19, managed the impressive feat of building a fully digital cash-transfer programme serving over 12% of the population in just 10 days and effectively harnessed big data for targeting the most vulnerable[59] — seem to have faced challenges to maintain the effort over time due to infrastructural constraints.[60]

Elements of a dynamic digital capability for governments include:

- **The capability to identify and harness new sources of data (including citizen-generated data) to complement traditional statistical data, while at the same time protecting citizen privacy and human rights:** Related to this is the capability to negotiate data-sharing agreements with platforms and the private sector. To take just one of many examples, the data that one generates when using Google Maps, Uber or Citymapper — or any other platform that relies on taxpayer-funded technologies — could be deployed to improve public transportation, traffic patterns and other services, rather than simply monetised for private profits.

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[57] See, for example, Shelby Bourgault and Megan O'Donnell. (2020). Women's Access to Cash Transfers in Light of COVID-19: The Case of Pakistan. Available at: https://www.cgdev.org/publication/womens-access-cash-transfers-light-covid-19; Aaditeshwar Seth and Gram Vaani. (2020). Are you deploying technologies of disempowerment? ICT Works. Available at: https://www.ictworks.org/deploying-technologies-disempowerment/; Cash transfers and corruption: policy guidance for donors. Available at: https://www.u4.no/publications/covid-19-cash-transfers-and-corruption.

[58] Alan Gelb and Anit Mukherjee. (2020). Digital Technology to Scale Up COVID-19 Social Assistance: What Have We Learned? Center for Global Development. Available at: https://www.cgdev.org/blog/digital-technology-scale-covid-19-social-assistance-what-have-we-learned.

[59] Joshua Blumenstock, Dean Carlan and Christopher Udry. (2021). Using Mobile Phone and Satellite Data to Target Emergency Cash Transfers in Togo. Availabe at: https://www.poverty-action.org/study/using-mobile-phone-and-satellite-data-target-emergency-cash-transfers-togo

[60] Thierry Yogo and Ernest Sergenti. (2020). Togo: Could more digitalization be the solution? World Bank blog. Available at: https://blogs.worldbank.org/africacan/togo-could-more-digitalization-be-solution.

- **Using data and harnessing digital infrastructure (e.g. digital IDs) to identify and support the most vulnerable and deliver targeted support to them:** In the wake of the pandemic, the global scramble to develop on-the-fly digital cash-transfer mechanisms (from Togo to Colombia) in emerging markets contrasted with often more traditional, paper-based instruments used in many developed countries. The different experiences of Pakistan, India and Bangladesh, countries that had already invested in developing digital IDs, mobile technology and financial instruments, offer a good example of both the advantages of investing in digital infrastructure and the risk of new exclusions (e.g., biometrics failing to recognise people with specific disabilities, access to digital IDs still skewed towards men, etc.).

- **Protection for platform or gig workers:** Food delivery workers, for example, stood out during the pandemic for their vulnerability, but turned out to be 'essential infrastructure,' particularly for the middle classes in big cities, thus exposing themselves to higher risks without having sufficient protection from their employers. Moving forward, governments will need to adapt their digital regulatory frameworks to cater for these new forms of vulnerability.

- **The concept of government as a platform or data sharing:** "Reorganizing the work of government around a network of shared APIs and components, open-standards and datasets" (Richard Pope) was already taking hold prior to COVID-19. However, it has undoubtedly been given a new impulse by the pandemic, as the capability to enforce open standards, share data across agencies and create APIs for others to build services upon (e.g. stock availability of masks) has enabled faster response times, better coordination and greater adaptability.

- **The capability to procure and assess emerging technologies:** COVID has seen a strange mix of big procurement and volunteering from private-sector companies. Both are problematic. We need to upskill procurement offices and policymakers alike.

- **The ability to handle disinformation and cybersecurity threats:** The heavy use of social media as a source of information has also brought about what has been dubbed as an 'infodemic' — the deliberate spread of misinformation to, for example, reduce trust in authorities or incite hate against specific minorities accused of spreading the virus. The reliance on digital infrastructure has opened up new frontiers for cybercrime and international cyber warfare. These new, constantly evolving threats require governments to be on top of the game technologically. They need to quickly establish go-to, authoritative sources for updates and react to the spread of rumours, without impinging on fundamental human rights, particularly with regards to the most vulnerable.[61] Governments that stood out during the crisis for their effective response employed the 'humour against rumour' tactic, as well as the use of respected national/local figures to communicate key messages.

2.4 The international dimension: dynamic capabilities for inter-governmental coordination and learning

The speed and scale of the COVID-19 pandemic calls for mechanisms to dramatically accelerate intergovernmental coordination and learning. Unfortunately, due to a difficult international political environment, these have often not proven to be commensurate with the challenge at hand. We've also witnessed the scramble for vital equipment and vaccines where one country has actively competed with another, often at the expense of smaller or poorer countries. On the other hand, one area where there seems to have been quite a lot of informal exchanges, particularly at the regional/subregional and technical (rather than political) level, has been digital.

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[61] Sarah Rattray. (2020). Lessons for human rights in the socio-economic response to COVID-19. ReliefWeb. Available at: https://reliefweb.int/report/world/lessons-human-rights-socio-economic-response-covid-19-0.

Here again, a mission-oriented approach could pave the way for better coordinating mechanisms that accelerate mutual learning and the transfer of capabilities. Such a frame could also trigger new investments in dynamic capabilities for multinational governance.

Examples of dynamic capabilities for more effective international cooperation include:

- **Coordinating rapid parallel experimentation:** The response to a pandemic is not the time to pick the winner when it comes to innovation. Rather, one wants to encourage as much distributed experimentation as possible to maximise the chances of rapidly finding, for example, a vaccine. Just like Vietnam successfully put in place a system of multiple parallel R&D to speed up the development of low-cost testing kits, so could countries coordinate their efforts to fund the broadest possibly variety of experiments in order to explore a variety of viable and at times competing hypotheses as quickly as possible. Likewise, the unprecedented level of global experimentation with universal basic income and digital cash-transfer schemes could benefit from a greater level of coordination.

- **Collecting and analysing research and data in real time:** International, validated platforms to collect and share data in a consistent format and assure that privacy is protected can provide both the public and private sectors with essential information in times of crisis and allow them to run real-time analytics that can better inform response efforts. Likewise, given the speed at which research has been produced during COVID, a global clearinghouse that allows not only for quick access, but also, for example, for recommendation algorithms to increase the probability of researchers working in different locations and fields to cross-pollinate their efforts, could accelerate scientific efforts as well as support the world of policymakers worldwide.[62]

- **Diffusing grassroots innovation:** As mentioned above, crises like pandemics accelerate citizens' propension to innovate to compensate for gaps in private- or public-sector service provision. The capability to harness this massive, distributed innovation globally, providing validation and recognition to innovators and creating mechanisms that incentivise diffusion, can aid governments' responses, allowing them to explore new avenues for sourcing vital equipment and build new forms of international trust and collaboration.

- **Identifying and learning from positive deviants beyond the usual suspects:** From relatively early on in the pandemic, it became apparent that some of the successful responses were not coming from countries in the Western world that often produce 'best practice,' but rather from locations as diverse as Freetown, Dharavi or Hanoi. Creating capabilities to swiftly identify these global examples of 'positive deviants,' and quickly drawing insights from their experiences that can inform other governments and expand the horizon of possibilities, will become increasingly important in an age of long emergencies and more frequent hazards.

- **International regulation coordination:** There is no reason why, say, a ventilator that is approved by a regulatory authority in one country should not be accepted by other countries (so long as the motivations and data behind the approval process have been made publicly available). The capability to create interfaces between different regulatory regimes could provide governments with more options for sourcing vital equipment in case of emergencies — and beyond.

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[62] Pedro Parraguez Ruiz. (2020). Science in Times of Crisis: Mapping the Ecosystems Behind Coronavirus R&D. Available at: https://dataverz.gitbook.io/coronavirus-r-and-d/.

Conclusion and key recommendations for post COVID recovery 3

We have argued that through well-defined ambitious goals — or more specifically, 'missions' — that are focused on solving important societal challenges, policymakers have the opportunity to determine the *direction* of growth by making strategic investments, coordinating actions across many different sectors and nurturing new industrial landscapes that the private sector can develop further.[63] This 'mission-oriented' approach to policy-making is not about top-down planning by an overbearing state; it is about providing a direction for growth, increasing business expectations about future growth areas and catalysing activity — self-discovery by firms — that otherwise would not happen.[64] It is not about de-risking and levelling the playing field, nor about supporting more competitive sectors over less, since the market does not always know best, but about tilting the playing field in the direction of the desired societal goals, such as the SDGs.[65]

Such long-term market-shaping activity by governments requires agile stability: internal dynamism and learning in policies, services, institutions and organisational formats complemented by the ability to

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[63] Mariana Mazzucato. (2016). From Market Fixing to Market-Creating: A New Framework for Innovation Policy. *Industry and Innovation* 23, 2: 140–56, DOI: https://doi.org/10.1080/13662716.2016.1146124.

[64] Mariana Mazzucato and Carlota Perez. (2014). Innovation as Growth Policy: The Challenge for Europe. SPRU Working Paper Series. Science Policy Research Unit (SPRU), University of Sussex Business School. Available at: https://econpapers.repec.org/paper/srussewps/2014-13.htm.

[65] Jeffrey D. Sachs et al. (2019). Six Transformations to Achieve the Sustainable Development Goals. *Nature Sustainability* 2, 9: 805–14. DOI: https://doi.org/10.1038/s41893-019-0352-9.

maintain stability to patiently implement policies and deliver the services expected from the state. The state needs to develop capacities (i.e., the space or the potential to do something in an intended way) and capabilities (the skills and expertise to adapt and change course) for resilience *and* for innovation. This agile stability relies on public-sector capacities for long-term commitments (such as investment in human capital, industrial restructuring or digital infrastructure) and dynamic capabilities (such as learning, evaluating, coordinating) to adapt to changing environments.

Market-shaping capacities and capabilities need to rest on a positive theory of public value that begins with a notion of the public good not as a correction to a failure, but as an objective in itself – an objective that can only come about if linked to a process through which value is created.[66] Key here is the emphasis on value-creation at the core: not 'public' value but value itself – with a clear delineation of the role of the different actors that are central to its formation. While in economics value is, in essence, created inside businesses and only facilitated by the public sector, in this view value is co-created and requires a stakeholder understanding of capitalism itself.

This more collective view of value underpins a different understanding of the market itself, with the market as an outcome of the interactions of individuals, firms and the state. And if value is created collectively, a first question becomes: what capabilities, resources and capacities are needed for this value to be created inside all the different organisations, including those in the public sector, private sector and civil society?

Governments need to counteract the hollowing-out of public organisations' ability to steer and analyse their own domain. The lack of investment in long-term capacities and in-house dynamic capabilities has resulted in the loss of institutional memory and an increased dependence on consulting companies. For instance, as argued by the Pakistani government in its evaluation of the Ehsaas Emergency Cash Programme:[67]

> *"COVID 19-spurred Ehsaas Emergency Cash provided a window of opportunity for our government to go beyond business as usual; to define a new normal, to pursue innovation at an unprecedented scale at various levels, to invent and recreate, and redefine leadership. Like other crises, it was also an opportunity to further trust between the government and people. This experience has generated valuable know-how in designing and implementing a massive national program in real time in a context of complexity and uncertainty with speed. It forced us to learn new ways of doing things; within the Ehsaas context, it has made the government more agile, data driven, experimental, and ambitious. It has forced us to institutionalize far more cost-effective digital ways of working – consultations, M&E and communication... The new ways of working provide useful lessons about the need to build internal government capability, leadership and innovation capacity to cope with this prolonged emergency. The new ways of working can also can inform the trajectories in a post-COVID world with regard to the policy transformation options, and the new policy architecture for a new normal; insights such as this can shape structural reform of our governance models, and public welfare services, and redefine the future of statecraft itself. The new ways of working provide useful lessons about the need to build internal government capability, leadership and innovation capacity to cope with this prolonged emergency. The new ways of working can also can inform the trajectories in a post-COVID world with regard to the policy transformation options, and the new policy architecture for a new normal; insights such as this can shape structural reform of our governance models, and public welfare services, and redefine the future of statecraft itself."*

Lessons from successful responses to COVID-19 show that building back better and preparing for future crises means investing in core public sector capacities and capabilities, including the ability to interact with other value creators in society – designing contracts to deliver in the public interest. As the saying goes, a crisis should not go to waste: let's hope it brings on a new understanding of how to develop the dynamic capabilities of the public sector – and why it matters.

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[66]Mazzucato and Ryan-Collins. Putting Value Creation Back into 'Public Value': From Market-Fixing to Market-Shaping.

[67]Nishar. (2020). Eshaas Emergency Cash: A Digital Solution to Protect the Vulnerable in Pakistan during the COVID-19 Crisis. Available at https://www.pass.gov.pk/Document/Downloads/EhsaasEmergencyCashReportJuly212020.pdf.

Our specific recommendations are as follows:

In terms of long-term capacities, governments should:

- Aim to build strong core government functions and necessary capacities, such as competent public service, (digital) infrastructure for public-service delivery and transparent institutional frameworks for new social contracts. The social contracts should aim to deliver transformational changes nested in the SDGs as the yardstick for long-term resilience.

- Clearly articulate – in the form of a political consensus – how they aim to achieve long-term resilience and what the public value they aim to provide is. This helps to renegotiate the 'deal' between public and private actors, enables ambitious agenda-setting and lays the foundations for new partnerships based on the ideas of public value and long-term resilience.

- Build institutions that enable the implementation of resilience-driven developmental plans. Governments can use the array of existing instruments (public procurement, policy missions, challenges, etc.) plus the new models emerging from the crisis to set a clear direction for private-sector investment towards innovation systems that are based on sustainability, equality, the protection of human rights and privacy.

In terms of dynamic capabilities, governments should:

- Build in-house capabilities and skills focused on adaptability and learning. These capabilities should be built on both an institutional level (e.g., creating foresight units or deploying policy assessment frameworks built on knowledge diversity) and an individual level through skills development and training.

- Strive to democratise innovation by creating new interfaces and diffusion mechanisms for citizen innovators to engage continuously with wider segments of the society. Such activities also serve as checks and balances on incumbent stakeholder networks and can serve to curb corruption and increase transparency (e.g., in procurement).

- Build data infrastructure and public digital platforms that enable the provision of truthful evidence and information to combat disinformation and cybersecurity issues, and also enable equitable access to public services.

- Explore new mechanisms to accelerate cross-cutting learning by creating peer-to-peer networks for intergovernmental learning, an international clearinghouse for grassroots innovations and agile international regulation for times of crisis.