



Innovation, development and COVID-19: Challenges, opportunities and ways forward

By Ben Ramalingam, Overseas Development Institute, and Jaideep Prabhu, University of Cambridge

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This paper focuses on innovation in development and humanitarian efforts in the context of the coronavirus (COVID-19) pandemic. Following an exploration of the overall role of innovation in the COVID-19 response, it examines innovation efforts underway in international development and humanitarian responses to the pandemic, how well these efforts are working, and how they might need to be enhanced to address pressing health, social and economic challenges, as well as to secure societies' long-term resilience.



Key messages

Innovation is increasingly essential for an effective response to and recovery from the COVID-19 pandemic in low and middle-income settings that are the target of official development assistance (ODA) investments.

Innovation in development and humanitarian responses to the pandemic have tended to focus on incremental improvements to repurpose existing aid approaches on the one hand, and on new biomedical and pharmaceutical product developments on the other. Most of these efforts have originated in and been led by actors in high-income countries.

There are relatively few positive examples of innovations taking a more transformational, inclusive and empowering approach, challenging existing norms and practices, and rethinking the role of actors in low and middle-income countries. Such innovation efforts can and should become more mainstream across the sector, both as a means of addressing the urgent needs generated by COVID-19, but also as a way of re-orienting the development and humanitarian sector for the future challenges that undoubtedly await.

To this end, the briefing paper ends with a series of opportunities for consideration by the donor community as a whole:

- Moving beyond 'single point' product based interventions to look at processes and paradigms
- Seeking to balance 'innovation for development' portfolios with more emphasis on forward looking anticipatory innovation and bottom-up adaptive innovation
- Investing in more strategic and focused collaboration, especially with local and national actors
- Ensuring and sustaining a focus on the poorest and leaving no one behind

Introduction

The COVID-19 pandemic presents what is undoubtedly one of the greatest challenges ever faced by international development and humanitarian organisations. There have already been major consequences for the world's poor and vulnerable, in terms of the direct impacts of the public health crisis on health and mortality, and indirect impacts on social, economic and political systems.

The bilateral and multilateral aid system, long seen as over-stretched, is facing fundamental questions about how best to contribute to the pandemic response and the post-pandemic world that is starting to emerge (Box 1).



Box 1. Challenges faced by development and humanitarian actors as a result of COVID-19

- How to navigate the technical and operational uncertainties of effective responses given financial and operational limits imposed by lockdown related policies that have left even institutions in high-resource settings struggling.
- How to cope with reductions in the mobility, availability and capacity of staff and partners, from head office level through to the operational front lines.
- How to ensure that the immediate response to COVID-19 also takes into account longer-term development ambitions and pre-existing challenges, including the Sustainable Development Goals, climate change and fragility.

Moreover, the aid system is being rocked by the dramatic economic impacts of the pandemic. Key players are working out how best to navigate the reductions in gross national income in donor countries around the world, and the implications for ODA budgets. Innovation has attracted a lot of attention in the perfect storm scenario of the ongoing pandemic as a means of dealing with these challenges and a host of other related issues. In high- and low-resource settings alike, and from global through to local levels, effective responses have emphasised trial-and-error experimental approaches and the use of evidence and science to generate novel ideas.

Examples include:

- Rapidly developing and deploying tests, personal protective equipment (PPE), clinical procedures, pharmaceutical treatments, and the ultimate holy grail of reliable and safe vaccines to protect against COVID-19.
- Developing effective surveillance techniques and technologies for tracking and tracing cases.
- Identifying ways of reducing transmission, including appropriate measures for reducing social contact, shielding the most vulnerable, and quarantining suspected and known cases.
- Developing appropriate policies and interventions for dealing with social and economic effects, as well as ensuring a secure and sustainable longer-term recovery.

In this briefing paper, our aim is to share a number of emerging lessons about how innovation for development efforts have been faring in the context of the COVID-19 pandemic, and suggest how these efforts might be made more effective. We begin with a brief overview of the 2019 OECD Development Assistance Committee (DAC) peer learning exercise on innovation for development impact.

This is followed by an overview of the COVID-19 innovation landscape, first with a global lens, and then with a focus on development and humanitarian investments. We then move on to discuss the lessons for innovation for development efforts in the context of the pandemic, drawing on a rapid consultation exercise with relevant stakeholders. We conclude with four specific proposals for consideration by the OECD, its member states and the wider development and humanitarian community.

Innovation for development: what did we learn, pre-pandemic?

In the past decade, innovation for development has gained traction as a means of achieving development and humanitarian goals in more novel and creative ways that can generate more impact for more people. Following innovation-driven national successes in East and Southeast Asia, as well as in specific sectors such as mobile money and specific areas of health, many governments have a renewed focus on innovation as vital for in furthering their progress towards sustainable development, economic growth and



poverty reduction. International organisations are also increasingly seeing innovation as an ambition and a way of working, with many establishing in-house teams, strategies and dedicated programmes to deliver on these aspirations.

The OECD DAC peer learning exercise (OECD, 2020^[1]), designed and implemented over the course of 2019, has been one of the most in-depth and wide-ranging efforts to date to learn about and from the work on innovation for development, with broad coverage of the work of 24 of the 30 DAC members, and in-depth exploration of the capacities of four focus countries (Australia, France, Sweden and the United Kingdom).

In summary, the performance on the innovation for development agenda has been promising but mixed. A number of initiatives and programmes have exceeded expectations, and are the source of genuine transformative and large-scale development gains. These include:

- Lowering the cost of and access to vaccines and medicines in the poorest countries.
- Using mobile money and microfinance to drive financial inclusion and small business development.
- Using community-based approaches to tackle malnutrition and sanitation.
- Using cash transfers to enhance food security.
- Using insurance and other adaptation measures to enhance resilience to disasters and climate change.

These successful efforts, though diverse, share common threads. They all involve careful navigation of: (1) **technical issues** relating to the innovation itself; (2) **business planning issues** around how to test, implement and scale-up the innovation in question; and (3) **wider institutional and political issues** that can often work to maintain the status quo and inhibit novel solutions. Even when the innovation is relatively simple, such as transferring cash to poor communities, success has involved taking a systemic approach.

Other innovation for development efforts have been less effective in generating tangible impacts, and are ambiguous and uncertain with regard to future gains. A few have even had a negative or detrimental effect on development efforts.

For the innovation for development movement as a whole, the peer learning exercise identified several overarching challenges. First, in many areas of development and humanitarian work, it is not the technologies for progress that are lacking, but the enabling institutional environment, related levels of political energy, and the will to encourage and foster adoption. Despite this, the largest part of the innovation for development effort has focused on generating more products and tools.

Second, despite the vital importance of engaging and involving local actors in developing countries – including governments, the private sector, civil society, and poor and vulnerable communities – for innovation processes to be successful, most efforts remain dominated by ‘international’ experts.

Third, international development organisations – DAC members included – have tended to see innovation as a silo, or something that can be ‘grafted on’ to existing programmes and projects, rather than as a core strategic imperative.

Finally, the very nature of innovation involves taking risks, making bets, and hedging between successes and failures. It is inherently difficult – if not impossible – to predict upfront which set of ideas, teams, organisations and networks will prove successful. And even in relatively well-financed settings, innovation investments need to deal with the reality of high failure rates.



In the complex and ambiguous world of development and humanitarian work, trial and error becomes even more important, as a means of enabling learning and improvement. The risk appetite for innovation needs to be balanced with effective systems for making decisions about when and how to give an idea the best chance of success; and how to judge when to drop an idea that is not working. However, accountability concerns have led innovation for development work to focus less on active and intelligent risk management of this kind and more on risk minimisation.

Coronavirus (COVID-19) innovation: what is happening?

A global perspective

At the same time as causing a huge impact on health and livelihoods around the world, COVID-19 has created fertile breeding ground for novel solutions and approaches (OECD Observatory of Public Sector Innovation, n.d.^[2]). The most comprehensive survey of global research and development (R&D) funding commitments for COVID-19, undertaken by the US-based Policy Cures programme, shows that investment in health-related innovation has been unprecedented (Policy Cures, 2020^[3]). The scale of innovation resources mobilised globally is remarkable: USD 9 billion in seven months. By comparison, the total global funding disbursed for Ebola R&D between 2014 and 2018 was USD1.9 billion.

The nature of the innovation processes that have been deployed is also notable. In the six months since the outbreak began, the US Food and Drug Administration (FDA) has approved almost 100 COVID-19 tests, in contrast to the three months the FDA took to approve the first Ebola test during the 2014 West Africa outbreak. The first COVID-19 vaccine entered into human trials within a record-breaking 69 days of identifying the causative agent of the outbreak¹ – a remarkable achievement, considering that it took 25 months for the first vaccine to reach the human trial stage during the previous global coronavirus outbreak (SARS in 2002–04).

As a result of the unfolding and changing nature of the pandemic, decisions about innovation efforts – as with the response as a whole – need to be taken amid uncertainty and at times based on conflicting evidence. For example, despite the need for more basic research to better understand COVID-19 and underpin the design of new innovations, the overt focus of global health innovation funding has been on new product development. Analysis undertaken in August 2020 shows that less than 3% of COVID-19 R&D has gone to basic research, compared to almost 17% across the Ebola and Zika outbreaks.

This means product development has happened without addressing a number of basic scientific and operational questions, which can create downstream risks. For example, because a number of the most advanced vaccine candidates are based on novel technologies, there is still limited understanding of the next steps, with questions yet to be answered about the scope for manufacturing scale-up, long-term patient safety and appropriateness.

Health-focused innovations are only the most visible forms of innovation that have taken place, and are often easier to define and quantify in financial terms. There have been many innovations to deal with the indirect or secondary impacts of the pandemic. These include the wide range of public policy measures taken to aid hard-hit businesses and vulnerable households; grassroots innovations led by citizens and communities to provide mutual aid and strengthen social solidarity; and organisational innovations undertaken across the public, private and not-for-profit sectors to maintain and sustain critical operations in the face of national and global lockdowns, such as the growing use of online working practices, the introduction of a swathe of 'COVID-19 safe' business processes and business resilience measures.



It is clear that the urgency of the crisis has been a catalyst for creative and novel approaches, driving decision makers to act fast and decisively. At the same time, urgency can mean that policy makers choose to take decisions without sufficient consultation with relevant stakeholders. There is also considerable uncertainty surrounding the virus and its impacts, how it spreads, how best to prevent and treat it, and how to mitigate the wider impacts.

A development and humanitarian overview

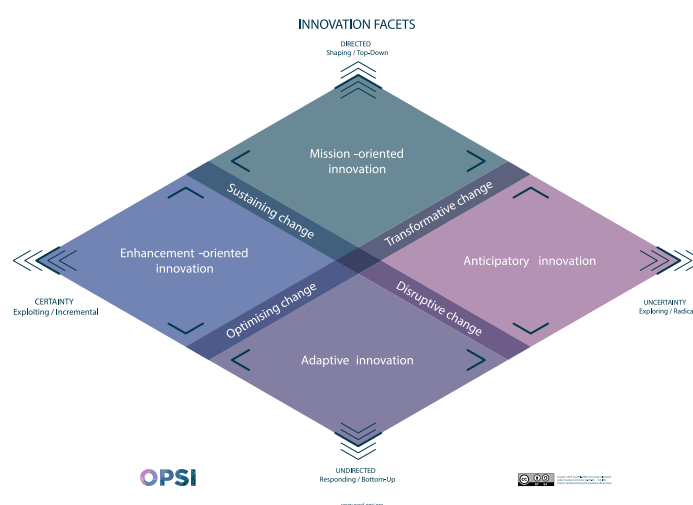
In low and middle-income settings that are the target of ODA investments, where capacity and resources are more limited, the need for innovation is, according to the United Nations, “more critical than ever... all relevant actors should work together to fund, design and deliver solutions”.² Given the novel and unknown nature of the virus and its resulting impacts, innovation has played a role in informing appropriate responses to the pandemic from medical, public health and socio-economic perspectives, and also for effective recovery measures.

For many development actors on the ground, the need for creative approaches was clearly apparent from the outset of the pandemic. There have been ongoing challenges around mobility of staff, communications, partner engagement, access and delivery of services, which have continued to affect the response. This has created a rich environment for many donors and partners to adapt and adopt new approaches, form partnerships with new actors, and test new approaches.

Analysis of the USD 9 billion that has been publicly committed (as of 3 September 2020) indicates around 10% -- approximately USD 919 million -- has been pledged by actors with a focus on development and humanitarian work³. Analysing the Policy Cures database, despite its health focus, is instructive as a starting point. By filtering for donors focused on development and humanitarian work, it has been possible to distinguish several kinds of innovation efforts. These have been fleshed out with inputs and insights from innovators, innovation funders, and development co-operation agencies in DAC member countries, as well as desk research. This process usefully reveals the range of innovation efforts that are underway to address the needs of the poorest and most vulnerable communities around the world.

Broadly speaking there are four distinct types of innovation work underway that focus on low- and middle-income countries. The different types of innovation efforts identified are defined in line with the OECD Observatory of Public Sector Innovation (OPSI)'s ‘innovation facets’ model (Figure 1).

Figure 1. OECD OPSI facets of public innovation



Notes: 1. Mission-driven innovation starts with a driving ambition to achieve an articulated goal, though the specifics of how it might be done are still unclear or are not set in stone.

2. Enhancement-oriented innovation often starts with the question of 'How might we do X better?' It is not about questioning what is being done, but rather how it is done and whether it can be done differently, and better.

3. Adaptive innovation starts with the question 'How might our situation demand changes in how we do X?' Adaptive innovation builds on the realisation that things are happening on the ground that don't fit with what is expected, but could be beneficial.

4. Anticipatory innovation is essentially about recognising and engaging with significant uncertainty about not only what works, but also what is appropriate or possible.

Source: OECD Observatory of Public Sector Innovation (n.d.^[4]), Public Sector Innovation Facets, <https://oecd-opsi.org/projects/innovation-facets/>.

Applying this to analyse COVID-19 innovation efforts provides a deeper understanding of the different kinds of investments that can be observed. It also enables sharper strategic thinking about the overall innovation effort.

- **Mission-driven innovation** – The most obvious example here is the development of a COVID-19 vaccine, and related arrangements for fair and widespread distribution. Also in this category are the much-publicised efforts to develop ventilators for managing acute COVID-19 cases. While the bulk of these innovation efforts are not focused on developing countries, there have been notable exceptions. For example, a unique public-private partnership to develop a USD 1 COVID-19 test has brought together the United Kingdom government, a global diagnostics firm, and the Institut Pasteur de Dakar (IPD) in Senegal, as well as a number of collaborating academic institutions around the world that have undertaken evaluation and validation at numerous stages of development (Institut Pasteur, 2020^[5]). The work has involved adapting an existing IPD innovative diagnostic (for dengue fever) for use with COVID-19. Other large-scale innovations at policy level include furlough and insurance schemes that have been put in place to support businesses and workers during widespread lockdown measures.
- **Enhancement-oriented improvements** – Many of the efforts in COVID-19 infection control and management fit into this area. For instance, the approach being taken around the world to tracking, tracing, quarantining and shielding vulnerable groups builds on lessons learned from previous epidemic responses, with adjustments made for the specific epidemiology of COVID-19. Some of these have seen novel processes, which upend the traditional development model of global North–South transfer noted above. The track and trace model used in the US State of Massachusetts (Commonwealth of Massachusetts, 2020^[6]) has learned extensively from work in Africa, led by international non-governmental organisation PATH. Much of the technological innovation has also focused on incremental innovations. For example, there are numerous examples of medical devices – from ventilators to scanners – that have been simplified and made cheaper for both developed and developing countries. In some cases this has been through repurposing existing solutions or by rethinking existing problems: consider how waste plastic is being recycled and used to produce face visors in Dar es-Salaam in the United Republic of Tanzania. There are also widespread examples of digital innovations that have helped address a wide range of problems, from supporting household-level social protection mechanisms to modernising business finance facilities.
- **Adaptive innovations** – This refers to original, simple, locally generated ideas that enable results that would not otherwise be attainable. These grassroots innovations have emerged in environments where scarcity of resources compels human ingenuity. Some of these highly localised efforts are based on specific aspects of COVID-19 responses, such as low-cost and frugal production of effective PPE (e.g. the M-19 Initiative in India) (Maker's Asylum, 2020^[7]). In other settings, entire approaches to the response have emerged from local understanding and practices. For example, in Kerala, India, the response was led by the state-level government, whereas in the city of Bhopal in Madhya Pradesh, community-led innovations have underpinned efforts to support the extremely vulnerable survivors of the 1984 gas poisoning disaster.



- **Anticipatory efforts** – In the COVID-19 context, governments around the world are trying to rethink how the post-pandemic world should look. These include efforts focusing on a comprehensive ‘global reset’ of the international economic system that created such dramatic vulnerabilities to the pandemic, and on ensuring a ‘green recovery’. Much of this work is focused on policy-level innovations so that the global economy is re-established on a more sustainable footing, as well as the related organisational and technological innovations that might support these broader changes in societal and economic life. For example, in Viet Nam the government took a multi-pronged approach to the pandemic that addressed the immediate health impacts, the secondary economic impacts, but also placed an emphasis on social solidarity and civic participation, through both new and adapted technologies and processes, all at relatively low cost.

Based on the innovation portfolio framework, and drawing on evidence from the consultation process, Table 1 sums up innovation efforts in each area, what they indicate and the potential benefits and risks.

Table 1. Innovation for development efforts in COVID-19: examples across the facets with benefits and risks

| Type of innovation | Incremental | Mission | Adaptive | Anticipatory |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Example | Track and trace or social protection through digital technologies | Challenge funds, development of diagnostics or vaccines | Maker collectives for PPE, community-based disease management | Green recovery, Build back better, ‘Global reset’ |
| Approach | Top-down and bottom-up, high certainty | Top-down, moderate certainty | Bottom-up, moderate certainty | Top-down and bottom-up, high uncertainty |
| Benefit | Can be readily and easily approved and generate quick wins Less likely to get negative reactions No challenge to the status quo | Can drive transformational results Often demands multi-stakeholder collaboration | Builds on front-line practitioner perspectives and resources Meet localised needs and opportunities | Helps to navigate multiple uncertain futures Can be a platform for large-scale change |
| Risks | By building upon what exists, can neglect those who are currently not benefitting or who have unmet needs | Can deprioritise other important agendas and lead to narrow focus Can antagonise or mobilise those who have different values or beliefs | Can move too fast for engagement Poses threat to existing vested interests and established expertise base Can often be untested and weak on evidence | Can be highly contested and contentious Generates political and institutional ‘bad will’ Can be source of instability in the short term |

Source: Author analysis; Roberts (2019^[8]), Innovation facets and core values, <https://oecd-opsi.org/innovation-facets-and-core-values-how-different-forms-of-innovation-can-cause-different-reactions/>.

How well is innovation for development working?

Message 1: Innovation for development efforts have been more narrowly focused on improvements to products and processes

As noted above, the pandemic has placed considerable demands on development and humanitarian organisations, which can also be seen as presenting a range of opportunities for innovation. However, for the most part, this opportunity has not been capitalised upon. Most organisations have put in place processes and mechanisms that have enabled them to ‘stick to the basics’: sustaining and re-emphasising existing business models and approaches, rather than questioning and reforming them.

The issues of urgency and uncertainty have played out in very specific ways among the development community. In particular, there have been two common reactions. First, there is a general sense that ‘we need to be seen to be doing something’ combined with ‘we don’t want to take any big risks that might come



back and bite us'. As a result, much of the work that has been viewed as innovation has been firmly anchored in existing programmes and projects, and resulting assumptions and operating models.

For example, innovation investments in vaccines and treatments, considerable though they have been, have been made far more straightforward thanks to the existence of large, established and trusted players in these areas (Gavi, the Vaccine Alliance, Coalition for Epidemic Preparedness Innovation and others). In many other settings, DAC members have tasked these organisations to propose existing ideas that could be readily repurposed for use on COVID-19. While understandable from a risk-minimising perspective, this confines innovation to working within existing assumptions, operating models and institutional practices. Put simply, the lower the risk, the lower the potential downstream benefits.

This is not to diminish the good work that has been undertaken. DAC members and the donor community as a whole have made considerable investments in innovation in relation to the COVID-19 crisis, as well as ensuring development gains are secured. There have been numerous examples of innovation for development investments in the COVID-19 response, addressing both the direct public health impacts of the pandemic, and the indirect economic and social impacts.

But pressing questions remain about how well individual investments and the overall effort match the considerable needs created by the pandemic. Like the global innovation effort as a whole, the development and humanitarian sectors have emphasised new product development and product improvements over institutional and systemic issues for the same reasons of urgency and uncertainty. This may reflect a wish among donors on the one hand to limit risk taking and preserve oversight; and on the other to associate innovation with high-end technology developed in high-income countries for use in low- and middle-income countries, which can resonate with domestic political and economic interests.

Message 2: A broader systems-based and transformational perspective is essential

The incremental focus of current innovation efforts is often underpinned by a misplaced set of ideas about how innovations works in reality. Even those innovations that are 'single point' – in the sense that they focus on a narrow challenge and involve a technical solution – need to take into account a systemic perspective.

For example, even the simplest of track and trace digital applications needs to be trustable and acceptable; linked to existing information systems; sensitive to inequalities and risks; especially around privacy and data; and provide incentives for citizens to use it, and for governments to support and own it, and make use of the resulting data. Without a systems perspective, even the most straightforward of innovations risk irrelevance at best or being dangerous at worst.

Development actors have frequently played a valuable role at crisis points, facilitating, catalysing and supporting new and transformational ways of thinking and working. Virtually all the major development innovation successes – from Gavi to M-Pesa and beyond – have come about because of a 'burning platform' moment where serious urgency created space for alternative, often radical, approaches.

In such efforts, the role of donors includes recognising and supporting the steps taken by innovators towards developing new and important approaches, helping with relationship building and system development, and providing long-term and patient support.

This is a challenge to donors in the current context, with the domestic economic and political challenges the pandemic poses. But a more transformational approach to innovation that looks not just at innovation in products and processes, but at entire paradigms and ways of doing things, is urgently needed. This is not easy at the best of times, but it can be done. It is especially important in the context of longer-term recovery and establishing pre-pandemic development trajectories, albeit on a more sustainable and secure footing.



Message 3: Innovation in development and humanitarian responses have focused more on mission-driven and enhancement-oriented innovation, and less on adaptive and anticipatory innovation

While enumerating the investments in each of the four areas in financial terms is beyond the scope of this report, it was clear from publicly announced investments, interviews and facilitated discussions that two areas – mission-driven innovation and enhancement-oriented improvements – have been getting the majority of attention and investment. While there have been examples of adaptive and anticipatory innovation, these have tended to be supported by actors outside of the ‘usual suspects’ of development and humanitarian work, such as foundations, philanthropies and the like.

A more focused and balanced approach across these efforts is important for three reasons. First, each of the areas identified is associated with good practices and lessons from the wider innovation community. Being explicit about what is being done by donors and their partners can also create space for more lesson learning about how to do innovation better. For example, there is a wealth of understanding about mission-driven innovation emerging from organisations such as the United Kingdom-based Institute for Innovation and Public Purpose, which should be capitalised upon by the development community. Similarly, much has been done around incremental innovations in the ‘lean management’ business community, which has been used in pockets here and there across the aid sector, but could become more mainstream in the current context.

Second, a portfolio approach can help to better articulate the theory of change as well as the overall strategy behind particular innovations, and how everything fits together. Focusing on mission-driven investments for vaccines at the expense of anticipating and rethinking the system to ensure vaccines get to the poorest could result in a situation akin to previous epidemics such as HIV/AIDS; where medicines are available in the wealthiest countries, but are years away from being made available to the poorest and most vulnerable communities.

Third, a portfolio lens enables a more multi-faceted approach to the COVID-19 pandemic, which is vital because the crisis itself is multi-faceted. A series of single-point innovations that does not look at the bigger picture is likely to result in suboptimal outcomes. One of the challenges to adopting a portfolio lens is that there is no agreed form of innovation governance within or across development and humanitarian organisations. This predates the pandemic: on the whole, the innovation for development movement has valued decentralised autonomy over centralised guidance, allowing a thousand flowers to bloom. In the current context, however, a thousand blooming political flowers will not be enough to address the challenges posed by COVID-19. While concerns about overt centralisation are well founded, it is possible to put in place forms of governance that are less directive and based more on intellectual leadership and stewardship. This could be the basis for a more collective, strategic dialogue and evidence-based decision-making process around innovation investments.

Message 4: Collaboration in innovation investments and associated learning processes must be improved, especially across the global North–South divide

Efforts within the DAC and the wider development community aim to improve the tracking of donor-funded innovations, including the work of the Global Innovation Exchange (Global Innovation Exchange, 2020^[9]). This provides information on innovations in a wide range of sectors to incentivise funding from social entrepreneurs.

While this has the potential to become a common tool for information management in relation to COVID-19 innovations, the emphasis is on learning and collaboration for innovation processes that are already underway. However, experience suggests that once an innovation process has been launched, especially with donor funds, it can be hard to maintain openness and flexibility.



There is a need for more upfront collaboration and co-ordination to ensure that innovation investments are coherent, joined up and do not lead to proliferation and duplication in COVID-19 investments. Co-ordinated action has already been undertaken through joint initiatives, such as the International Development Innovation Alliance and the Global Innovation Fund, and more is needed.

A disconnect between the innovation needs and interests of the international and national actors has been a long-standing issue. The innovation for development peer learning exercise synthesis report (OECD, 2020^[11]) highlighted the vital importance of more coherent, collective, and locally and nationally grounded innovation efforts. In relation to COVID-19, these issues and tensions have become ever more apparent.

Existing challenges to how DAC members approach and deliver on innovation ambitions risk becoming amplified in the pandemic context. While there are examples of donors attempting to catalyse and support local and national innovation efforts, these have tended to be small scale and highly specific to particular partners. For the most part, international players have dominated formally funded innovation efforts.

However, beyond the development co-operation world, there are many examples of locally and nationally led innovation efforts that demonstrate clearly that innovation need not only originate in donor countries from the global North. Three types of engagement can be distinguished, as shown in Box 2.

Box 2. Global southern involvement in COVID-19 innovation efforts: three approaches

- **In the South, for the South** – such as Indian maker collectives bringing together local production processes with open source technologies and digital collaboration methods to produce PPE for community-based responses. These efforts typically involve southern innovators and locally mobilised resources.
- **With the South, for the South** – such as efforts for low-cost diagnostics, which involve African innovators, scientists and researchers, as well as international donors, science and technological expertise and industry players.
- **With the South, for the North** – such as US state-wide efforts in Massachusetts learning about low-cost tracking and tracing from responses to the West African Ebola outbreak and other disease management efforts. This work involves public and private actors from the global North and South, as well as trusted brokers and intermediaries including international development and humanitarian actors.

Speaking to innovators with a focus on low- and middle-income countries, and on reaching the poorest and most vulnerable, it is apparent that much of their work has progressed without significant external investment or support, in response to local and national needs, often by employing a frugal mind-set and approach. On this last point, it is also clear that frugal innovation principles can help meet pressing needs for quality, simplicity, affordability and sustainability in the context of different health, social and economic needs, in high-, middle- and low-income settings alike.

Despite their merits, however, such efforts do not always receive a great deal of wider attention from the development community. A rebalancing of the development innovation portfolio towards more coherent, strategic and sustained support for locally driven frugal innovation has become critical in the context of the pandemic response. Moreover, it points towards the kinds of changes that have long been called for in development and humanitarian policy and practice. It is also conducive to creating new triangular partnerships, where knowledge is shared equally among all partners with a view to co-creating innovative solutions.



Message 5: Access to innovation is as much of a challenge as innovation itself

As well as designing and delivering technical innovations, it is vitally important to ensure access to these innovations for those who are hardest to reach: the extremely poor; those who miss out because of their gender, ethnic group or sexuality; and those living in remote areas. This is consistent with many DAC members' policy objectives. It is also important to move beyond individuals and groups, and consider those regions or countries that are often excluded from the fruits of progress, technological or otherwise. These include fragile and conflict-affected states; and, indeed, deprived areas and regions in high-income countries. Without a concerted effort, innovation will not benefit those most in need.

With this in mind, the World Health Organization has endorsed the creation of a voluntary intellectual property pool whose content could be shared for developing drugs, vaccines and diagnostics, which would particularly benefit developing countries. Also, open access to scientific work has been facilitated, where a large number of data and findings related to COVID-19 have been made openly available to the international community. But more work is needed.

Suggestions include problem analyses that specifically identify how marginalised populations are affected; innovative ideas that are developed and tested in close collaboration and partnership with these groups; and assessments of innovation proposals that examine to what extent and in what ways they benefit the poorest (in line with the G7 Principles) (G7, 2018^[11]). For example, the following questions should be asked of each innovation project or initiative, with the poorest, most vulnerable and marginalised populations in mind:

- How does this innovation address the needs, opportunities and interests of the poorest?
- How will they be involved in developing, testing and rolling out the innovation?
- How will the poorest adopt, access and use the innovation?
- How will this innovation have a positive impact on their lives and livelihoods?

Proposals for progress

A number of opportunities present themselves on the basis of the analysis above, which were tested with participants of a peer learning exchange across DAC members in June 2020. Building on the key messages set out above, these include:

1. **Moving beyond 'single point' product-based interventions to look at processes and paradigms, using a systems-based and transformational lens.** Improved decision-making would be supported by stronger and more coherent governance mechanisms that can take a big picture view of the current sector-wide effort; and identify potential gaps and areas needing more evidence or collaboration, as well as promising bright spots. COVID-19 innovation 'boards' could be established within donor organisations, complemented with a sector-wide 'high level panel' to help to set overarching priorities and shared roadmaps.
2. **Seeking to balance 'innovation for development' portfolios with more emphasis on forward looking anticipatory innovation and bottom-up adaptive innovation, including innovation from the South.** More should be done to encourage more collective thinking and action on adaptive and anticipatory innovations that can help to address the medium and longer term impacts of COVID-19. Doing this will involve more work to incorporate local and national efforts and voices, and 'unusual suspects', to challenge conventional thinking and approaches in a systematic and sustained fashion – paving the way for more South-North learning and triangular partnerships.
3. **Investing in more strategic and focused collaboration, especially with local and national actors.** Currently, with large numbers of dispersed, fragmented and political decisions, the overall innovation effort risks being less than the sum of its parts. Work is already underway to share



information about funded COVID-19 innovations. Collaboration should be expanded by building on this to ensure (1) more joined-up and collaborative investments, (2) reduce duplication and waste, and (3) strengthen collective efforts for stronger local and national innovation efforts. This will involve work to generate the political will and enabling environment for such changes, as well as tangible investments in strengthening local innovation ecosystems.

4. **Ensuring and sustaining a focus on the poorest and leaving no one behind.** This means developing appropriate frameworks and processes to ensure that innovation efforts and outputs are as inclusive as possible (as set out in message 3 above). For example, this might involve determining needs at local and national levels, analysing how well the current portfolio is meeting these needs, and using these findings to determine innovation priorities. This may also involve examining 'big ticket' mission-driven investments such as for vaccines and tests to assess how the benefits will be realised by the poorest and most vulnerable communities.

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Contact

Rahul Malhotra (✉ rahul.malhotra@oecd.org)

Mags Gaynor (✉ mags.gaynor@oecd.org)

Joëlline Bénéfice (✉ joelline.benefice@oecd.org)

Notes

¹ See COVID-19 vaccines: breaking record times to first-in-human trials <https://www.nature.com/articles/s41541-020-0188-3#ref-CR6>.

² See The Need to Protect Science, Technology and Innovation Funding during and after the COVID-19 Crisis, https://unctad.org/system/files/official-document/presspb2020d4_en.pdf.

³ This includes DAC member donors (e.g. the former UK Department for International Development, Global Affairs Canada, the Ministry of Foreign Affairs of Norway), philanthropies and foundations (the Bill & Melinda Gates Foundation, Mastercard Foundation, Jack Ma Foundation), industry (Nestlé, Nigerian business consortia) and national governments (Bangladesh, Ethiopia, Indonesia, Pakistan).

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