Table E.2: General government net lending/borrowing (percent of GDP)

	GENERAL GOVERNMENT NET LENDING/BORROWING (% OF GDP)										
	2010	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Africa											
Angola	3.40	8.08	4.13	-0.30	-5.72	-2.92	-4.52	-6.30	2.19	0.79	-2.81
Benin	-0.28	-0.98	-0.22	-1.37	-1.65	-5.55	-4.29	-4.20	-2.98	-0.54	-3.74
Burkina Faso	-4.06	-2.04	-2.76	-3.55	-1.74	-2.09	-3.09	-6.88	-4.36	-3.47	-6.09
Burundi	-3.64	-3.49	-3.79	-1.81	-3.75	-7.21	-6.78	-4.77	-6.76	-8.26	-9.52
Central African Republic	-1.35	-2.14	0.35	-5.94	-3.94	-0.59	1.07	-1.06	-0.97	1.43	-2.29
Chad	-4.15	2.39	0.47	-2.07	-4.18	-4.38	-1.94	-0.23	1.94	-0.17	-0.64
Comoros	4.20	0.86	1.96	10.49	-0.33	2.60	-4.48	0.35	-1.04	-2.20	-3.90
Congo, Dem. Rep.	-1.00	-0.99	1.75	1.87	-0.02	-0.41	-0.50	1.36	-0.05	-2.05	-1.90
Djibouti	-1.05	-1.19	-2.04	-4.25	-6.88	-15.42	-8.31	-4.53	-2.78	-0.85	-1.52
Eritrea	-17.69	-6.00	-5.59	-8.02	-0.36	-3.14	-1.66	-6.04	4.21	-1.61	-5.16
Ethiopia	-1.32	-1.61	-1.17	-1.93	-2.58	-1.95	-2.34	-3.24	-3.03	-2.53	-3.55
Gambia, The	-2.93	-3.01	-2.82	-5.56	-3.94	-5.38	-6.40	-4.98	-6.06	-2.53	-3.78
Guinea	-9.66	-0.94	-2.51	-3.87	-3.21	-6.89	-0.15	-2.06	-1.06	-0.47	-3.71
Guinea-Bissau	-0.23	-1.35	-2.12	-1.67	-2.44	-3.16	-5.34	-1.32	-4.92	-4.61	-8.27
Lesotho	-8.24	-14.70	-1.54	-2.87	3.07	-1.27	-8.56	-1.84	-4.17	-5.60	-7.31
Liberia	1.14	-4.32	-2.81	-5.96	-3.12	-4.40	-3.74	-4.79	-5.10	-4.55	-3.54
Madagascar	-0.76	-2.04	-2.24	-3.40	-1.96	-2.85	-1.11	-2.10	-1.33	-1.42	-5.52
Malawi	1.83	-4.12	-1.77	-6.43	-4.84	-6.34	-7.28	-7.33	-5.50	-6.36	-9.19
Mali	-2.57	-3.42	-0.96	-2.37	-2.89	-1.82	-3.94	-2.86	-4.77	-1.68	-6.20
Mauritania	-0.45	0.07	1.67	-0.66	-2.64	-2.44	0.13	0.53	3.42	2.75	-3.28
Mozambique	-3.50	-4.41	-3.62	-2.59	-10.26	-6.66	-5.48	-2.92	-6.85	-0.15	-7.06
Niger	-0.98	-2.19	-0.83	-1.93	-6.11	-6.75	-4.46	-4.12	-3.00	-3.56	-4.82
Rwanda	-0.64	-0.86	-2.37	-1.26	-3.90	-2.67	-2.26	-2.52	-2.58	-5.19	-7.72
Sao Tome and Principe											
Senegal	-3.91	-4.90	-4.15	-4.33	-3.39	-3.66	-3.27	-2.97	-3.64	-3.83	-6.23
Sierra Leone	-5.00	-4.54	-5.16	-2.39	-3.61	-4.55	-8.46	-8.78	-5.59	-2.74	-6.37
Somalia											
South Sudan		4.61	-14.81	-3.47	-9.08	-17.05	-15.10	3.26	6.32	0.34	-1.89
Sudan	0.11	-2.33	-7.37	-5.76	-4.72	-3.82	-4.56	-6.45	-7.92	-10.89	-6.83
Tanzania, United Republic of	-4.70	-3.51	-4.06	-3.81	-2.91	-3.17	-2.08	-1.16	-1.93	-1.72	-1.86
Togo	-2.30	-6.27	-6.48	-5.20	-6.85	-8.83	-9.54	-0.28	-0.78	2.13	-7.12
Uganda	-4.65	-2.04	-2.39	-3.19	-2.74	-2.55	-3.56	-2.75	-2.74	-5.02	-6.55
Zambia	-2.43	-1.78	-2.83	-6.21	-5.80	-9.54	-6.10	-7.59	-8.43	-8.14	-6.00
Average, Africa	**-1.11**	**0.26**	**0.26**	**-2.44**	**-4.13**	**-3.81**	**-3.52**	**-3.77**	**-2.15**	**-2.57**	**-4.23**
Asia and the Pacific											
Afghanistan	0.92	-0.67	0.18	-0.63	-1.72	-1.38	0.13	-0.67	1.63	-1.06	-2.79
Bangladesh	-2.68	-3.59	-2.98	-3.38	-3.08	-3.98	-3.36	-3.34	-4.64	-5.36	-6.80
Bhutan	7.91	-1.76	-2.47	-5.93	2.94	-0.20	-1.93	-4.79	-2.58	-1.15	-5.46
Cambodia	-3.80	-4.70	-4.53	-2.62	-1.64	-0.65	-0.30	-0.78	0.68	3.21	-2.40
Kiribati	-8.26	-19.33	-6.32	12.39	38.76	47.38	23.16	40.38	-1.68	15.02	-13.24
Lao People's Dem. Rep.	-1.47	-1.43	-2.34	-4.03	-3.13	-5.57	-5.06	-5.49	-4.66	-5.02	-6.42
Myanmar	-4.96	-4.43	-2.65	-1.72	-1.32	-2.78	-3.87	-2.86	-3.40	-3.92	-6.02
Nepal	-0.77	-0.82	-1.34	1.81	1.53	0.66	1.35	-3.09	-6.65	-4.56	-7.93
Solomon Islands	5.03	7.47	3.27	3.64	1.84	-0.01	-4.17	-3.44	0.85	-1.66	-5.59
Timor-Leste	-19.79	-25.08	-39.12	-14.37	-37.53	-33.06	-55.19	-33.38	-28.08	-32.08	-17.52
Tuvalu	-24.12	-9.13	10.02	29.30	-6.14	15.32	28.21	3.21	32.04	-8.60	-12.30
Vanuatu	-2.52	-2.13	-1.63	-0.23	-3.48	-9.31	-3.94	-1.20	7.67	4.64	-7.62
Yemen	-4.06	-4.51	-6.32	-6.90	-4.14	-8.75	-8.53	-4.91	-7.85	-5.32	-9.21
Average, Asia and the Pacific	**-2.86**	**-3.50**	**-3.15**	**-3.03**	**-2.56**	**-3.89**	**-3.54**	**-3.29**	**-4.24**	**-4.50**	**-6.51**
Latin America and the Caribbean											
Haiti	-2.68	-2.47	-4.71	-7.01	-6.28	-2.50	0.03	0.04	-1.72	-2.28	-5.87
Average, all LDCs	**-1.76**	**-1.11**	**-1.96**	**-2.70**	**-3.57**	**-3.83**	**-3.50**	**-3.53**	**-3.06**	**-3.44**	**-5.32**

Source: IMF (2020f)

F. THE ROLE OF SCIENCE, TECHNOLOGY AND INNOVATION (STI) DURING A PANDEMIC: HOW CAN STI HELP TO BUILD BACK BETTER

The important role of Science, Technology and Innovation (STI) for development is recognized in a plethora of reports and international agreements. In 2001, the Human Development Report stressed that "technologies are tools of human development that enable people to increase their incomes, live longer, be healthier, enjoy a better standard of living, participate more in their communities and lead more creative lives" (UNDP, 2001). In the SDGs, specific aspects on STI were included in the Means of Implementation and Global Partnership section, including specific STI targets in SDG 17.6 to 17.8.

The COVID-19 pandemic has highlighted the central role of STI and digitalization: from prevention and treatment of the health crisis to new and innovative ways of learning, working, communicating and the growing importance of e-Commerce and digital finance.

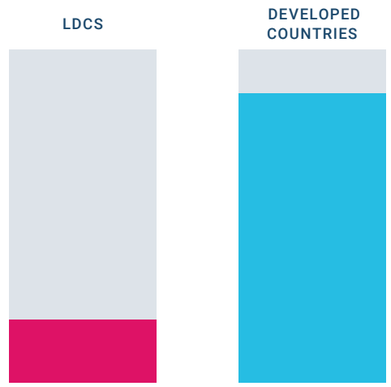
The section highlights key STI challenges that LDCs were facing prior to the COVID-19 pandemic and highlights the increasing role played by STI during the pandemic, including teleworking, e-education, telemedicine and digital finance.

F.1 STI CHALLENGES IN LDCs[41]

LDCs are often unable to benefit from the economic and social benefits related to technological development. One of the causes for this can be found in structural limitations, as there are marked gaps between LDCs and other countries in the area of STI. Traditional development approaches based on the trickle-down assumption that increasing imports of capital goods and direct foreign investment would lead, through the diffusion of technology and innovation, to development gains, does not happen to the extent expected. Low levels of investment in research and development, low enrolment rates in higher education and thus a limited supply of skilled labor, and inadequate or unstable policy and regulatory environments capable of promoting progress, all play a role in the poor state of science, technology and innovation in LDCs.

While data on STI indicators in LDCs are scarce, those LDCs with data show a significant lag in major indicators relating to STI. The ratio of research and development expenditure

In general, access to the internet remains a key challenge that hampers adoption of STI in LDCs



Most of the offline population live in LDCs, where only 19% use the internet, compared with 87% in developed countries

[41] See also Chibuye and Zampetti, 2019

as a share of GDP (WDI, World Bank)[42] was 0.6 percent or less between 2011 and 2017, compared to more advanced economies, which were allocating approximately 2 percent of their much larger GDP towards research and development. This presents a key hurdle to building competitiveness and capacity to absorb and adapt to existing state-of-the-art technologies. Since research and development drives both imitation and invention, data on this indicator captures important dimensions of the process of innovation. It facilitates advances at the technological frontier and enables catch-up through absorptive capacity (Cirera and Maloney, 2017). Countries that have managed to sustain catch-up growth have done so by increasing the level of expenditure on research and development and related innovation capabilities (Lee and Kim, 2009; Lee and Mathews, 2013).

The importance of increased investment in research and development has been highlighted by COVID-19. More investment is needed in technological and broadband infrastructure as well as in capacity-building to adapt to existing technologies. The lack of high-speed connectivity in LDCs poses a major challenge. Inadequate connectivity prevents access to the most promising broadband applications for education, health, finance, and other sectors, as well as to global and regional knowledge networks. Most LDCs face great difficulties in making broadband internet access available and affordable for all (AUC and OECD, 2021). In the context of the pandemic, investment was needed in the pharmaceutical industry and technologies such as AI, which can assist in developing drugs and vaccines and in managing related services and resources (UN, 2020).

In general, access to the internet remains a key challenge that hampers adoption of STI in LDCs. Most of the offline population live in LDCs, where only 19 percent use the internet, compared with 87 percent in developed countries (State of Broadband Report, 2020). Some key reasons for this large gap are the cost of using the internet and the lack of necessary skills.

The COVID-19 pandemic has underscored the pressing need for countries to elevate STI in both policy and practical terms. There is need for more research, collaboration, data, and knowledge sharing to cope with the immediate impacts of the coronavirus crisis and the subsequent economic crisis (UNCTAD, 2020b). The world has witnessed unprecedented openness and collaboration in science. The EU mobilized research and innovation to tackle the crisis and within just three months of working together, established closer coordination of actions taken by the Member States and the European Commission, joining forces in providing financial support, creating new funding opportunities, refocusing existing projects, sharing data, setting mechanisms to match great ideas with market opportunities and much more (European Union, 2020).

Patent indicators offer a useful measure to characterize the STI environment where both firms and researchers operate and also provide a more standardized measure of a particular type of knowledge output (Cirera and Maloney, 2017). In order to create adequate incentives for private sector technological innovations that drive economic growth, governments need to create an effective and targeted regulatory environment that promotes innovation. Governments can encourage registration of intellectual property by streamlining application procedures, reducing the cost of registration and adapting enforcement mechanisms (AUC and OECD, 2021). However, technological change, especially in LDCs, is not only about innovating at the frontier, but also about adapting existing products and processes to achieve higher levels of productivity as applicable to their local contexts. Connecting local technological needs to international technological opportunities is a particular challenge for many developing countries, especially LDCs (Bordoff, et al., 2006, Chibuye and Zampetti, 2018). Citizens of LDCs, comprising both residents and non-residents, filed only 1,536 patents in 2018, compared with 960 in 2011 (WDI, World Bank).[43] As a share of global figures, that number is almost zero.

Even after patenting, it can be challenging in many LDCs to scale their efforts due to lack of funding. For example, during the COVID-19 pandemic, an 18-year-old natural science student in Ethiopia developed 30 separate COVID-19 related inventions, including low-cost ventilators, warning devices that prompt people against touching their faces and a contactless electrical soap dispenser. Thirteen of these inventions have now been patented but a lack of funding is hampering scaling efforts. In his community Welkite, a rural town 160 kilometers from the Ethiopian capital Addis Ababa, a local university has produced 50 of his dispensers and distributed them to various public places including hospitals (Gakpo, 2020).

As the new technologies require skilled workers, another important indicator for ease of STI enhancement is availability of relevant skills. Manyika et al., (2017) highlight that in the 19th century, technological changes raised the productivity of lower-skill workers and created new opportunities for them, at times replacing the craftsmanship of higher-skill artisans. However, with the advent of information technology and the internet, the reverse has happened: the productivity of higher-skill workers, especially those engaged in abstract thinking, or with creative and problem-solving skills, has increased, while the relative demand for lower-skill workers has not.[44] UN DESA (2018) noted that middle-skill jobs have been particularly affected by automation and AI, with wide-ranging distributional effects. Since 1970, the real wages of high-skilled workers have risen faster than those of both medium- and low-skilled workers. Hence, the new wave of automation will extend to many non-routine tasks, putting low and medium skills more at risk than higher ones. While literacy rates increased from 57.6 percent in 2011 to 64.8 percent in 2018 in LDCs, more than 350 million people do not possess basic reading and writing skills (UN-OHRLLS, 2020). Gross enrollment for secondary education increased from 40 to 46.7 percent between 2011 and 2019. Once disaggregated by gender, gross enrollment for secondary education among females increased from 37 percent to 44.8 percent between 2011 and 2019.[45] As argued by authors such as Nelson and Phelps (1966) and Piketty (2014), higher level of education should speed up the process of catching up with technological frontier. A report by UN-OHRLLS and ITU (2018) found that secondary school enrolment has by far the highest explanatory power for internet use. There is clearly a need to improve education and training in LDCs, if they are to compete in the global economy.

Another illustrative way to depict skills development is to estimate the number of publications in peer reviewed journals. Yet again, LDCs lag far behind. The LDCs published only some eleven journal articles for every 1 million people in 2018, a marginal increase from 6 in 2011. In comparison, in the OECD area, about 1,000 scientific and technical journal articles were published for every 1 million people in 2011 and 2018 (WDI, World Bank).[46]

Given the important role of innovation and technologies in economic activity, the LDCs will be left further behind if current trends persist. In order for LDCs to catch-up, they will need to embrace the on-going transformation processes driven by technology, while ensuring that the net effect on the labor market and productivity is positive. This would significantly contribute to eradicating poverty and fostering economic growth in the LDCs (Chibuye and Zampetti, 2019).

While it is possible for LDCs to leapfrog to frontier technologies, there is need to deal with structural constraints, including enabling universal access to electricity and broadband Internet connections (see also section D.). Additionally, attainment of a minimum level of education is required to utilize digital technologies. This demonstrates that leapfrogging to frontier technologies also requires advances related to achieving other SDGs such as "to ensure healthy lives" (SDG 3), "to ensure inclusive and equitable quality of education" (SDG 4), and "to build resilient infrastructure" (SDG 9). In order to bridge the technology and development divides, national development strategies will therefore need to target both basic infrastructure development and human capital accumulation (UN DESA, 2018). There is need to create an enabling environment that allows for, inter alia, the development of the required infrastructure.

F.2 THE INCREASING ROLE OF STI DURING COVID-19

The COVID-19 pandemic led to a need for immediate adjustments in society's socio-economic fabric. For the overall impact of COVID-19 on various social sectors, see also section B. on well-being.

Tele-working

In order to strike a balance between maintaining economic activity and containing a public health-crisis, an important measure taken by governments across the world to contain the spread of COVID-19 was to encourage those who can work from home to do so. As of mid-April 2020, 59 countries had implemented telework for non-essential publicly employed staff (ILO, 2020). And whether in lockdown or not, governments across the world encouraged employers to allow working from home to foster physical distancing.

However, as noted in section B., while this shift was observed among a significant proportion of workers in rich countries, many workers in poorer countries, such as LDCs, were forced to maintain their working routines out of economic necessity. This was especially the case among the self-employed, daily wage labourers and low-skilled workers, largely because the nature of their work required physical proximity to others.

In addition, inadequate access to the internet in LDCs is a significant impediment. Recent research by the World Bank found that globally, one in every 5 jobs can be done from home. However, in poorer countries, only one in every 26 jobs can be done from home (Sanchez et. al., 2020). The authors further argued that COVID-19 is likely to exacerbate inequality, especially in richer countries where better paid and educated workers are insulated from the shock. The overall labor market burden of COVID-19 is bound to be larger in poor countries, where only a small share of workers can work from home and social protection systems are weak or non-existent. Globally,

[42] Available at https://data.worldbank.org/indicator/GB.XPD.RSDV.GD.ZS
[43] Available at https://data.worldbank.org/indicator/IP.PAT.NRES and, https://data.worldbank.org/indicator/IP.PAT.RESD
[44] See also World Economic Forum (2020).
[45] Available at https://data.worldbank.org/indicator/SE.SEC.ENRR?locations=XL and https://data.worldbank.org/indicator/SE.SEC.ENRR.FE?locations=XL
[46] Data available at https://data.worldbank.org/indicator/IP.JRN.ARTC.SC and https://data.worldbank.org/indicator/SP.POP.TOTL

young, poorly educated workers and those on temporary contracts are least likely to be able to work from home and more vulnerable to the labor market shocks from COVID-19. Therefore, lack of internet access among the majority of people in LDCs creates another layer of distributional inequality.

e-education

During the pandemic, several countries deployed various technologies to advance online learning, distance, and remote learning systems. Analogous to tele-working, the demand for remote learning has also exposed a stark digital divide across and within countries. For a more detailed discussion on e-education during the pandemic, see section B.

As noted in section B., prior to the COVID-19 pandemic, many LDCs were facing a learning crisis. With increased utilization of e-education and remote learning platforms that depend heavily on high-speed internet access, learning inequalities are widening–between developed and developing countries and between the rich and the poor in the same country (Sharma, 2020).

In some LDCs, Telecommunication companies launched special data packages to help with online learning. Nepal Telecom launched "Happy Learning Pack" to manage online classes in the country (ITU, 2020a). In Malawi, the College of Medicine and the Telecom Network Malawi plc launched a partnership in which students will be offered 10GB data bundle for online learning and have access to over 10,000 books on Buku Digital Library (ITU, 2020b).

Given the large differences in access to technologies, no single delivery channel for remote learning is sufficient to reach all children and the rural poor are far more likely to be left out by technology-enabled remote learning. A survey by the World Bank (World Bank, 2020a) found that alternative EdTech solutions such as Interactive Radio Instruction (IRI) were deployed in many LDCs including Bangladesh, Nepal, Democratic Republic of the Congo, Ethiopia, Guinea, Lesotho, Madagascar, Malawi, Mali, Nigeria, Somalia, Sudan, the United Republic of Tanzania and Zambia.

Telemedicine

While many sectors have been affected by the pandemic, the health sector has had a direct hit (see section A.). Telemedicine and e-health alternatives were used by many countries to help control the spread of COVID-19. As found by Whitelaw et al., (2020), countries that have maintained low COVID-19 per-capita mortality rates appear to share strategies that include early surveillance, testing, contact tracing, and strict quarantine. The scale of coordination and data management required for effective implementation of these strategies has, in most successful countries, relied on adopting digital technology and integrating it into policy and health care. As noted by Dizioli et al. (2020), the use of testing to identify and isolate positive cases is even more effective in controlling the epidemic in countries with a higher share of poorer households. They argue that if half of asymptomatic infectious people were identified, deaths would be reduced by almost three-fourths within a year. Poor people benefit the most, with their COVID-19 fatality rate dropping by about three-fourths with improved massive testing, compared to a fall of about half for the more well off.

Whitelaw et al. (2020) further found that the technologies for screening of infections deployed by some rich countries included AI, digital thermometers, mobile phone applications, thermal cameras and web-based toolkits. For contact tracing, global positioning systems, mobile phone applications, real-time monitoring of mobile devices and wearable technology was utilized. Similarly, as digital technology typically requires the use of the internet and mobile phones, digital health initiatives can amplify socioeconomic inequalities and contribute to health-care disparities. In addition, health systems suffer from significant technology underinvestment and weak education systems and digital learning outcomes remain barriers to increasing AI skills and talent (Broadband Commission for Sustainable Development, 2020).

Some LDCs adopted various technologies to help fight the pandemic as indicated in section A. In some instances, companies added hand sanitizers to their production lines. In Uganda, the World Bank-funded Africa Center of Excellence PHARMBIOTRAC (Pharm-Biotechnology and Traditional Medicine) formalized PharmSan and fast-tracked the production of hand sanitizers. The hand sanitizers were in supermarkets and pharmacies in Mbarara town from March 2020 on and were being sold at much lower prices than other similar products on the markets. It has been well received and accepted by the community. From production to market, the entire process takes about 2 weeks, and the team is working rigorously towards optimizing the process further to enhance the quality and quantity while maintaining the low price. Thus, the pandemic has offered an opportunity to build experience in emergency response and to innovate using minimal resources (Gangwar and Bassett, 2020).

In Somalia, the Federal Ministry of Health launched the Coronavirus Information Service on WhatsApp. The new service, which is free-to-use, provides a central source of accurate, trustworthy, and up-to-date information about COVID-19. The Coronavirus Information Service is an automated 'chatbot' service which allows Somali people to get answers to the most common questions about COVID-19 from the Somali Ministry of Health, 24 hours a day. Enabling two-way conversations on WhatsApp, the Coronavirus Information Service has been built on the WhatsApp Business API, using Infobip's global communication platform to enable the sharing of timely and vital information about the virus (ITU, 2020d).

Similarly, both Vodacom Tanzania and the Democratic Republic of the Congo are prioritizing network optimization for areas that need improvement as well as network resilience. Vodacom DRC offers VodaEduc, a zero-rated learning platform. It is providing an SMS broadcast to its entire customer base with information and updates from Government around the pandemic. Furthermore, Vodacom DRC is also offering the government a zero-rated short code that allows the general public to call into specialized Ministry of Health agents to ask about COVID-19 symptoms and guidance. It has also zero rated all government websites and applications that inform the public about the pandemic. Additional data allocations have been provided to SMEs and work from home services have been extended to all Vodacom enterprise customers in the region (ITU, 2020e).

F.3 DIGITAL FINANCE

As noted by UNCDF (UNCDF, 2020), digital finance has played a direct role in fighting the spread of the pandemic, through for example, reducing cash transactions to encourage social distancing efforts. Mobile financial services have allowed people to continue receiving salaries and wages from their employers, conduct mobile money transfers to families, pay bills and where possible, shop online. While most of these efforts have been predominant in richer countries, some LDCs such as Togo have set up cash grants designed to support informal workers during the three months of state-mandated social distancing–an unconditional cash transfer grant that gives each worker 30 percent of the minimum wage. Citizens sign up via mobile phone, and the transfer is delivered by mobile money.

According to UNCTAD (2020a), digitalization is changing the mindset of customers and the culture of purchasing goods and services offered through digital channels. The trend is powered by investments in e-payment solutions to stimulate a cashless economy. The COVID-19 pandemic has accelerated this trend, particularly in Africa. The most consistent trend in payment innovations across countries is QR-based payments. Working examples of such payment solutions have been reported in Bangladesh, Bhutan, Cambodia, Nepal, Senegal, Togo, Uganda[47] and Zambia, and recently launched in Lao People's Democratic Republic. In Uganda, mobile phone provider MTN, made mobile money transfers between customers free for 30 days during the COVID-19 outbreak to limit contagion through the exchange of money. Some LDCs such as Cambodia, Togo, Nepal, Bhutan and Zambia are improving interoperability of digital payment options. They have scaled up national payment infrastructures to support the use of non-cash options–bank accounts, cards and mobile money wallets from different providers. However, greater efforts towards seamless cross-border e-payments are needed. The World Bank (World Bank, 2020b) asserts that putting women at the center of digital payment programs can help countries to mitigate exclusion risks and minimize the impact of COVID-19 on women and girls. A World Bank project in Zambia is helping to increase access to livelihood support for extremely poor women and access to secondary education for disadvantaged girls in extremely poor households.

Despite ongoing efforts, many people in LDCs are left behind as inclusive services, like mobile money, are not prevalent enough and government cash disbursements and other services cannot be accessed virtually. For example, in a cash-based economy like Myanmar where a large majority of the population use prepaid plans for their mobile phone, being able to reload credits by purchasing a physical top-up card is the only way to stay connected. To ensure that daily recharge can be done, thousands of retail shops and distribution points had to stay open. Telenor, Myanmar's sales and distribution teams across the country, continue to move around to ensure that they are well-stocked with top-up cards for customers (ITU, 2020f).

Even before the COVID-19 pandemic and as noted by the Report of the United Nations Inter-agency Task Force on Financing for Development (2019), by expanding financial breadth and expanding access to financial services, digitally enabled innovation in the financial sector (fintech) has the potential to help reduce (gender) inequality, while also stimulating economic growth. Yet, ever more granular machine learning allows financiers to discriminate more accurately. Individuals may be priced out due to data analysis and the predictability of certain events (e.g., health insurance might not be offered to individuals whose data suggest they are higher risk). This increasing ability to target clients poses new policy challenges in trying to best reconcile equity and

[47] Between 2015 and 2019, mobile money transactions in Uganda more than doubled in value, from about $9 billion to $20 billion, according to the country's central bank.

efficiency considerations. At the same time, there is a growing recognition of the downsides and potential risks of technology adoption, particularly for more vulnerable populations including women and children, who are at risk of cyber stalking, online aggression and hate speech, or internet-enabled child abuse, exploitation, or bullying (State of Broadband Report, 2019).

F.4 CONCLUSIONS AND RECOMMENDATIONS

Digital technologies have great potential to bring economic and social development benefits to LDCs. For that to happen, considerable effort is required to empower and equip Governments and the private sector with the capacity to leverage it. The impact of COVID-19 on the global population demands that we build the world back better, including using STI to help recover from the pandemic and become more resilient to future systemic shocks. Ensuring universal equitable access requires emphasis on digital infrastructure and technologies both during the pandemic response and recovery phases, and during the resiliency-building efforts (Broadband Commission for Sustainable Development, 2020). Extending digital technologies to remote areas, such as connecting the rural-urban supply chains, can be cost-effective and can fight pockets of informality and poverty in rural areas. In addition, 73 percent of people in Africa will continue to live in intermediary cities and rural areas, which means developing broadband infrastructure beyond the ICT hubs, can yield high returns. This would also strengthen rural-urban linkages and drive rural transformation, if intermediate cities serve as transmission hubs (AUC and OECD, 2021).

The COVID-19 pandemic had created a political momentum for accelerating digital transformation with digital as the new paradigm for development. There is a need to invest in digital education and skills development to close the digital divide and increase human capacity so that LDCs will be able to reap the benefits of digital transformation. While digital literacy is a first step, digital fluency and life-long-learning systems will be required, especially in local environments that provided the required knowledge and adaptation possibilities for entrepreneurs.

Similarly, the OECD (2020) calls for a whole-of-government approach, involving multi-sector and multi-partner co-ordination mechanisms. Governments can learn from each other to improve the strategic co-ordination of different policy bodies related to COVID-19 research and innovation. Collective solutions that provide a 'one-stop shop' for the centralization of information on funding opportunities can help ensure that appropriate conditions for collaborative research and sharing of preliminary research findings and data are in place to reap their full benefits.

REFERENCES

AUC and OECD (2021). Africa's Development Dynamics: Digital Transformation for Quality Jobs, AUC, Addis Ababa/OECD Publishing, Paris.

Bordoff, E. Jason, Deich, Michael, Kahane, Rebecca and Orszag R. Peter (2006). Promoting Opportunity and Growth through Science, Technology and Innovation. Strategy Paper. The Hamilton Project.

Broadband Commission for Sustainable Development (2020). Working Group on Digital and AI in Health Reimagining Global Health through Artificial Intelligence: The Roadmap to AI Maturity. https://broadbandcommission.org/Documents/working-groups/AIinHealth_Report.pdf

Cirera, Xavier, and William F. Maloney (2017). The Innovation Paradox: Developing-Country Capabilities and the Unrealized Promise of Technological Catch-Up. Washington, DC: World Bank.

Chibuye, M. and Zampetti, A. (2018). Enhancing STI in Africa through the Technology Bank for the LDCs. Occasional Policy Papers Series on the Least Developed Countries. https://www.un.org/ohrlls/news/enhancing-sti-africa-through-technology-bank-ldcs-2018

Dizioli, A., Andrle, M, and Bluedorn, J. (2020). COVID-19 Hits the Poor Harder, but Scaled-Up Testing Can Help. IMF Blog. https://blogs.imf.org/2020/12/03/covid-19-hits-the-poor-harder-but-scaled-up-testing-can-help/

European Union (2020). ERAvsCORONA Action Plan: First Results: Actingfast-actingtogether.https://ec.europa.eu/info/sites/info/files/research_and_innovation/research_by_area/documents/ec_rtd_era-vs-corona-results.pdf

Gakpo, O.J. (2020). African science steps up to COVID challenge. https://allianceforscience.cornell.edu/blog/2020/05/african-science-steps-up-to-covid-challenge/

Gangwar, M. and Bassett, M. R. (2020). World Bank funded Uganda's Africa Center of Excellence (ACE) PHARMBIOTRAC on the frontline of COVID-19 response. World Bank Blogs. https://blogs.worldbank.org/education/world-bank-funded-ugandas-africa-center-excellence-ace-pharmbiotrac-frontline-covid-19

Georgieva, K. (2020). Continued Strong Policy Action to Combat Uncertainty. IMFBlog. https://blogs.imf.org/2020/11/19/continued-strong-policy-action-to-combat-uncertainty/

ILO (2020). Working from Home: Estimating the worldwide potential. ILO Policy Brief. https://www.ilo.org/wcmsp5/groups/public/—ed_protect/—protrav/—travail/documents/briefingnote/wcms_743447.pdf

ITU (2020a). Nepal Telecom Happy learning package. https://www.itu.int/net4/ITU-D/CDS/REG4COVID/Display.asp?ID=54422

ITU (2020b). College of Medicine partners TNM for affordable learning services. https://www.itu.int/net4/ITU-D/CDS/REG4COVID/Display.asp?ID=54401

ITU (2020c). UNDP and Government of Rwanda Deploy Smart Anti-Epidemic Robots to Fight Against COVID-19! https://www.itu.int/net4/ITU-D/CDS/REG4COVID/Display.asp?ID=53982

ITU (2020d). The Ministry of Health Somalia Partners with WhatsApp and Infobip for COVID-19 Information Service. https://www.itu.int/net4/ITU-D/CDS/REG4COVID/Display.asp?ID=54195

ITU (2020e). Vodacom supports DRC with e-learning, SMS Covid-19 updates, free data, and more. https://www.itu.int/net4/ITU-D/CDS/REG4COVID/Display.asp?ID=53901

ITU (2020f). Telenor activities in Myanmar. https://www.itu.int/net4/ITU-D/CDS/REG4COVID/Display.asp?ID=53921

Lee, K. and Byung-Yeon, K. (2009). Both institutions and policies matter but differently at different income groups of countries: determinants of long-run economic growth revisited. World Development, vol. 37, No. 3 (March), pp. 533-549.

Lee, K., and Mathews, J. (2013). Science, technology and innovation for sustainable development. CDP Background Paper No. 16. ST/ESA/2013/CDP/16.

Nelson, Richard R. and Phelps E. (1966). "Investment in Humans, technological diffusion and economic growth", American Economic Review, papers and proceedings, 61.

OECD (2020). Science, technology and innovation: how co-ordination at home can help the global fight against COVID-19. https://read.oecd-ilibrary.org/view/?ref=135_135121-f0i79eag9c&title=Science-technology-and-innovation-how-co-ordination-at-home-can-help-the-global-fight-against-COVID-19

Piketty, T. (2014). Capital in the twenty-first century. Cambridge Massachusetts: The Belknap Press of Harvard University Press.

Petesch, C. (2020). African nations seek their own solutions in virus crisis. Associated Press News. https://apnews.com/article/66e8d6229ce8cfa535c3db2e821e7753

Sanchez, G.D, Parra, G.N., Ozden, C., Rijkers, B., Viollaz, M and Winkler, H. (2020). Who on Earth Can Work from Home? Policy Research Working Paper 9347. World Bank. https://openknowledge.worldbank.org/bitstream/handle/10986/34277/Who-on-Earth-Can-Work-from-Home.pdf?sequence=1&isAllowed=y

Sharma, N. (2020). Torn safety nets: How COVID-19 has exposed huge inequalities in global education. https://www.weforum.org/agenda/2020/06/torn-safety-nets-shocks-to-schooling-in-developing-countries-during-coronavirus-crisis

State of Broadband Report (2019). Geneva: International Telecommunication Union and United Nations Educational, Scientific and Cultural Organization, 2019. https://www.itu.int/dms_pub/itu-s/opb/pol/S-POL-BROADBAND.20-2019-PDF-E.pdf

State of Broadband Report (2020). Geneva: International Telecommunication Union and United Nations Educational, Scientific and Cultural Organization, 2020. https://www.itu.int/dms_pub/itu-s/opb/pol/S-POL-BROADBAND.21-2020-PDF-E.pdf

UN (2019). Inter-agency Task Force on Financing for Development, Financing for Sustainable Development Report https://developmentfinance.un.org/fsdr2019

UN (2020). The Sustainable Development Goals Report. https://unstats.un.org/sdgs/report/2020/The-Sustainable-Development-Goals-Report-2020.pdf

UN DESA (2018). World Economic and Social Survey: Frontier Technologies for Sustainable Development. https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/WESS2018_full_web.pdf

UN General Assembly Plenary (3 December, 2020). Thirty-first Special Session, 2nd Meeting. With More Than 1.5 Million Lives Lost to COVID-19, World Leaders in General Assembly Demand Urgent Action to Guarantee Equitable Distribution of Life-Saving Vaccines. https://www.un.org/press/en/2020/ga12293.doc.htm

UNCDF (2020). Financial inclusion and COVID-19: Can this crisis be an opportunity for digital finance? (Part I), 07 August 2020. https://www.uncdf.org/article/5861/covid-19-a-catalyst-for-digital-finance

UNCTAD (2020a). Fast-tracking implementation of eTrade Readiness Assessments. https://unctad.org/system/files/official-document/dtlstict2020d9_en.pdf

UNCTAD (2020b). Science, technology and innovation efforts to address COVID19. https://unctad.org/topic/commission-on-science-and-technology-for-development/covid-19

UNDP (2001). Human Development Report 2001, Making New Technologies Work for Human Development. Oxford University Press: New York.

UN-OHRLLS(2020). Report of the Secretary-General. Implementation of the Programme of Action for the Least Developed Countries for the Decade 2011–2020. https://undocs.org/A/75/72%20#un

UN-OHRLLS and ITU (2018). ICTs, LDCs and the SDGs: Achieving universal and affordable Internet in the least developed countries. http://unohrlls.org/custom-content/uploads/2018/02/ICT-LDCs-and-SDGs.pdf

Whitelaw, Se., Mamas A. M., Topol. E. and Van Spall, G.C.H (2020). Applications of digital technology in COVID-19 pandemic planning and response. Lancet Digital Health. https://reader.elsevier.com/reader/sd/pii/S2589750020301424?token=91B22702C469E448D-BC8E5FC2BBE6D0C54642951D2EDE1E045FCF9A9274C0A28489D842BDB3B49AB27144CC649FB78CE

World Bank (2020a). Remote Learning response to COVID-19 Knowledge Pack. http://pubdocs.worldbank.org/en/925611587160522864/KnowledgePack-COVID19-RemoteLearning-LowResource-EdTech.pdf

World Bank (2020b). World Bank's Response to COVID-19 (Coronavirus) in Africa. https://www.worldbank.org/en/news/factsheet/2020/06/02/world-banks-response-to-covid-19-coronavirus-in-africa

World Economic Forum (2020). The Future of Jobs Report 2020. http://www3.weforum.org/docs/WEF_Future_of_Jobs_2020.pdf

Box III: The role of South-South cooperation in sustainable recovery in LDCs

From the outset of the pandemic, South-South cooperation has taken a prominent role in strengthening the capacity of LDCs to fight against the pandemic in areas such as mobilizing resources, coordinating policy responses, and promoting peer learning and experience sharing.

LDCs took swift actions to save lives and protect livelihoods and leveraged South-South cooperation to ease the shortage of medical supplies. Bangladesh's vibrant pharmaceutical industry provides access to COVID-19 medicines to millions of people at home and in other developing countries and LDCs. Remdesivir, an antiviral drug used to treat COVID patients, can be produced at a tenth of the originator cost in Bangladesh. According to Export Promotion Bureau data, Bangladesh pharmaceutical exports go to more than 120 countries including 31 LDCs. To buffer the direct hit on its booming garment industry, Bangladesh has successfully repurposed its garment industry to expand production of PPE to meet pent-up demand. (Gay et al., 2020; Vickers et al., 2020).

Policy coordination at the regional and sub-regional levels through South-South cooperation was a contributing factor in LDCs' initial success in containing the spread of the virus. The Africa Medical Supplies Platform (AMSP),[48] launched by the African Union, has ensured equitable and efficient access to critical medical supplies for Member States of the African Union which is home to 33 LDCs. This online procurement system for supplies and equipment unlocks immediate access to an African and global base of vetted manufacturers and procurement partners, and enables African Union Member States to purchase certified medical equipment such as diagnostic kits, PPE and clinical management devices with increased cost effectiveness and transparency. The Caribbean Community and Common Market (CARICOM), which includes Haiti, the only LDC in Latin America, has also joined the platform to access critical medical supplies to fight the COVID-19 pandemic.

As an expression of solidarity, Southern partners have provided assistance to LDCs to lessen the health and economic impacts of the pandemic. China, Cuba, India, Qatar and Turkey sent medical teams, and provided equipment and food aid to help LDCs strengthen their testing and treatment capacity and ease the shortage of critical supplies at the height of the pandemic. To improve access to vaccines, China and India are also contributing to the supply of vaccines to the most vulnerable countries.

Southern partners have also increased their financial support to LDCs. China pledged US$2 billion over two years to help developing countries cope with the impact of the pandemic. India proposed a common electronic platform for all South Asian Association for Regional Cooperation (SAARC)[49] nations to share and exchange information, knowledge, expertise and best practices for jointly combating the COVID-19 pandemic. In addition, India pledged US$10 million for the SAARC COVID-19 Emergency Fund. The fund has so far collected US$15 million after Nepal, Maldives, Bhutan, Bangladesh and Sri Lanka also came forward with contributions for the initiative. Turkey provided financial assistance to 10 LDCs over US$1 million (CDP, 2021). Kuwait, United Arab Emirates, Saudi Arabia and Qatar also provided support both directly to LDCs as well as through multilateral channels.

South-South financial cooperation has provided much-needed liquidity support to LDCs and alleviated their financial constraints to address the health crisis and counter the socio-economic fallouts of the pandemic.

Since the outbreak of the pandemic, the southern-based development banks such as the African Development Bank (AfDB), the Islamic Development Bank (IsDB), the New Development Bank of the BRICS (NDB) and the Asian Infrastructure Investment Bank (AIIB) have rolled out lending programmes to assist Member States including many LDCs to fight the pandemic.

AfDB set up a COVID-19 Response Facility worth of US$10 billion to help African countries deal with the health and socio-economic crisis. AIIB created a COVID-19 Crisis Recovery Facility, offering up to US$13 billion financing to public and private sector entities in any AIIB member including Asian LDCs facing serious adverse impacts of COVID-19 for 18 months starting from April 2020. The IsDB has announced a comprehensive integrated response package worth up to US$ 2

[48] The Africa Medical Supplies Platform (AMSP) is developed by the African Union, Africa Centres for Disease Control and Prevention (African CDC) and in partnership with African Export-Import Bank (Afreximbank), United Nations Economic Commission for Africa (ECA) with the support of leading African & international Institutions, Foundations & Corporations as well as Governments of China, Canada & France, and other technology & knowledge partners include Vaya and Baobab Circle. It was launched in July 2020.

[49] The South Asian Association for Regional Cooperation (SAARC) is composed of eight member states: Afghanistan (LDC), Bangladesh (LDC), Bhutan (LDC), India, Maldives, Nepal (LDC), Pakistan and Sri Lanka, with its headquarters in Kathmandu, Nepal.

billion to help countries respond, restore and restart. "The 3Rs" package has delivered immediate action through South-South and North-South operations to strengthen health systems, finance trade and SMES and support economic recovery of IsDB members. The relief package covers LDCs such as Benin (US$20 million), Burkina Faso (US$9 million), Chad (US$ 20 million), Djibouti (US$7.4 million), Guinea (US$20 million), Mali (US$22.5 million), Mauritania (US$0.9 million), Mozambique (US$28 million), Senegal (US$132.8 million), Sierra Leone (US$10 million), Sudan (US$35 million), and Uganda (US$13.8 million).

In the course of building back better, South-South cooperation is taking on more importance for LDCs to mobilize financial resources, increase technology transfer and build resilience against future public health crisis. Regional integration driven by south-south trade can help LDCs to turn the unprecedent challenge into a transformational opportunity to advance green, sustainable and inclusive development.

The AfCFTA[50] can facilitate creation of an environment conducive to establishing regional value chains and champions in pharmaceuticals, which can be leveraged as a springboard for nurturing African multinationals and creating jobs and prosperity (Banga et al., 2020). The AfCFTA will improve access to products essential to respond to COVID-19. "Trade corridors" or "green lanes" expedite and ensure the free flow of essential commodities and are essential to mitigate the impact of the pandemic. Adopting a regional approach to developing these value chains would enable State Parties to use their comparative advantages, attract investment in the necessary infrastructure, and create economies of scale. It would also ensure that State Parties without the capacity to produce these products would be able to access them from within the region. The AfCFTA could accelerate these regional value chains through prioritization and coordination, and through liberalizing key inputs and service sectors essential to manufacturing critical medical equipment in addition to transport and telecommunications (Signé et al., 2020).

South-South cooperation also plays an important role in improving food security in developing countries through mobilizing Southern expertise, particularly replicable and adaptable innovations and solutions, and technology transfer in agricultural production. The pandemic provides an opportunity for developing countries to share lessons and experiences of food management and beyond and to establish south-south distribution mechanisms that could be activated in response to the kind of emergency conditions currently being experienced (UNCTAD, 2020). Turning more towards regional markets in the South may help generate economies of scale, create employment and foster diversification and production upgrading. By undertaking more high value adding activities within a region, regional value chains offer opportunities to move up the value-added ladder and accelerate transformation (UNCTAD, 2019).

LDCs can tap into the potential of South-South cooperation in developing regional agri-food value chains to efficiently allocate resources, increase production and raise availability of food, thus lowering prices and increase consumption. Various regional and sub-regional communities and free trade arrangements such as COMESA[51], ECOWAS[52], AfCFTA, SAARC and ASEAN[53] to name a few have put LDCs in a unique position to develop regional collaboration in food value chains. In addition, to mount effective defense against the current locust plague in some LDCs and other natural calamities threatening food security, LDCs need to boost resilience at the regional and sub-regional levels with coordinated approach. Knowledge and experience sharing, and policy coordination through South-South cooperation is vital.

[50] The African Continental Free Trade Area (AfCFTA) Agreement entered into force on 30 May 2019. The operational launch of the AfCFTA, originally scheduled for July 2020, is now postponed to 1 January 2021 due to the COVID-19 pandemic. To date, 30 countries have both signed and approved ratification of the AfCFTA Agreement which include 16 LDCs in Africa, namely, Rwanda, Niger, Chad, Guinea, Uganda, Sierra Leone, Mali, Senegal, Togo, Mauritania, Djibouti, Ethiopia, The Gambia, Burkina Faso, São Tomé and Príncipe, Angola. Of the 55 AU member states, Eritrea has yet to sign (TRALAC, 2020).

[51] The Common Market for Eastern and Southern Africa (COMESA) is a free trade area with 21 member states , including 13 LDCs in Africa, namely Djibouti, Eritrea, Ethiopia, Somalia, Sudan, Comoros, Madagascar, Burundi, Malawi, Rwanda, Uganda, Zambia, Democratic Republic of the Congo.

[52] The Economic Community of West African States (ECOWAS), comprising 11 LDCs in West Africa and the Sahel region, namely, Benin, Burkina Faso, The Gambia, Guinea, Guinea Bissau, Liberia, Mali, Niger, Senegal, Sierra Leone and Togo.

[53] The Association of Southeast Asian Nations (ASEAN) consists of 10 member states including three LDCs, Cambodia, Lao People's Democratic Republic and Myanmar.

COVID-19 also presents an opportunity for LDCs to fast-track digital transformation through South-South cooperation, with increasing investment in infrastructure by the southern partners in LDCs in recent years. There is vast scope to increase investment on ICT infrastructure and expand access to internet in households and government operations and business transactions across LDCs. South-South cooperation is a vehicle for LDCs to increase access to digital technology and investment. Finance from the South and cost-effective technologies, as well as training and skills development provided by Southern partners can help LDCs leapfrog digitization.

Moving forward, LDCs can leverage the opportunity presented by COVID-19, and as a group augment South-South cooperation by translating their solidarity into strategic partnership to make inroads in priority areas in order to embark on sustainable and inclusive recovery (Gay et al., 2020). LDCs statement on a global stimulus package in response to COVID-19, and the collective position on request for extension of the transition period provided under Article 66.1 of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) are among such coordinated approaches. In preparations for the Fifth UN Conference on the Least Developed Countries, LDCs can work with their Southern partners to further secure commitment to provide greater market access and additional LDC-specific support measures including support for smooth transition of graduating countries. In the next programme of action for LDCs, the role of South-South cooperation in increasing access to technology including digital technology and renewable energy, and development financing including climate finance can also be strengthened.

REFERENCES

CDP (2021). Comprehensive study on the impact of COVID-19 on the LDC category.

Banga, K., Keane, J., Mendez-Parra, M., Pettinotti, L., Sommer, L. (2020). Africa trade and Covid-19: The supply chain dimension, African Trade Policy Centre, Working paper 586, August 2020.

Gay, D., Gallagher, K. (2020). The need to extend the WTO TRIPS pharmaceuticals transition period for LDCs in the COVID-19 era: Evidence from Bangladesh, CDP Policy Review Series, August 2020.

Georgieva, K., Selassie, A. A. (2020). Charting a Path for a Resilient Recovery in Sub-Saharan Africa, IMF Blog, 15 September 2020. https://blogs.imf.org/2020/09/15/charting-a-path-for-a-resilient-recovery-in-sub-saharan-africa/.

IFAD (2020). The role of South-South and Triangular Cooperation in the transformation of food systems in view of COVID-19. https://www.ifad.org/documents/38714174/42073553/sstcday2020_concept_e.pdf/1db9744d-5251-77cc-f0f4-463538eebb35.

OECD (2020). Global value chains in agriculture and food: A synthesis of OECD analysis, OECD Food, Agriculture and Fisheries Papers No. 139, 4 February 2020.

OHRLLS (2020). Report of the Secretary-General on the Implementation of the Istanbul Programme of Action for the Decade 2011-2020, March 2020.

Signé, L., Van der Ven. C. (2020). How the AfCFTA will improve access to "essential products" and bolster Africa's resilience to respond to future pandemics, Africa in Focus, Brookings, 30 April 2020.

TRALAC(2020). TradeLawCentre.https://www.tralac.org/resources/by-region/cfta.html#ratification.

UNCTAD (2019). South-South cooperation for trade, investment and structural transformation, TD/B/66/6.

UNCTAD (2020). South-South Cooperation at the time of COVID-19: Building Solidarity Among Developing Countries. Geneva, May 2020.

Vickers, B., Ali, S. (2020). Prioritizing the Poor: LDCs and Trade in COVID-19-related Medical Supplies, The Commonwealth, A special focus on COVID-19 and the Commonwealth, Issue 164.

G. FINANCING TO ADDRESS THE COVID-19 CRISIS AND PREPARE FOR A SUSTAINABLE RECOVERY

As described in section E., COVID-19 has at the same time led to increased needs for spending to address the health, social and economic crisis as well as sharply reduced domestic revenues due to a decline in economic activity, including a decline in export revenues, further reducing their already limited fiscal space.

At the same time inflows of external finance, which for LDCs play a larger role than for other groups relative to their GDP, especially FDI and remittances, have also declined sharply. In fact, the combined losses of domestic revenue, remittances, FDI and receipts from tourism alone due to the COVID-19 effects are estimated to outpace ODA that LDCs received in 2018. This means that the financing gap to achieve the SDGs has further widened and external financing needs are projected to have more than doubled in 2020 compared to averages in previous years. Thus, LDCs would need support by development partners—both bilateral and multilateral—to avoid an increase in poverty and the destruction of several years of development gains. In addition, they need new measures to address their often high levels of external debt (OECD, 2020d; Hurley et al. 2020 and UN, 2021).

Overseas Development Assistance slows as needs grow

Fulfillment of ODA commitments decreased

SHARE OF GNI OF DAC DONORS TO LDCs

0.01%	0.09%
2011	2019

NUMBER OF DAC DONORS PROVIDING 0.15% OF GNI IN ODA TO LDCs

10	5
2011	2019

G.1 FDI EXPERIENCED SHARP DECLINES

For many LDCs FDI plays an important role as a source of finance to foster economic growth, help create jobs and reduce poverty levels. It can be an important channel through which the private sector in LDCs can become integrated in global value chains, drive diversification and provide technical know-how. Independent of the COVID-19 crisis, there are policy reasons explaining the relatively limited number of FDI received by LDCs. Poor investment climate conditions and investment promotion capabilities resulting in lower investment competitiveness and the perception of higher political risk as well as lower levels of confidence by investors for FDI in LDCs hamper many LDCs in their ability to attract FDI (G20, 2020a). However, LDCs receive only a small share of global FDI, and the COVID-19 crisis has further reduced global FDI activities in 2020 and exacerbated several of the pre-existing and structural vulnerabilities of LDCs. FDI inflows in LDCs were already on a declining trend since 2015, with a small uptick in 2018.