

# Blended finance

New approaches for financing Science,  
Technology and Innovation for achieving  
the Sustainable Development Goals

14-16 September 2020

Online workshop organised by OECD, Wellcome Trust,  
Blavatnik School of Government/University of Oxford and  
The Research Council of Norway

The workshop will be conducted by ZOOM video-conference, hosted by Research Council of Norway,  
over three consecutive days 14-16 September 2020

Connection details will be sent separately to pre-registered participants only.

Please find enclosed:

- Aim and objectives
- Registration and practical details
- Workshop programme
- Background note
- Invitation by John-Arne Røttingen, CEO  
Research Council of Norway



### *Aim and objectives*

The overall aim of the workshop is to gain deeper insights and practical lessons from projects and arrangements using “blended finance” for science, technology and innovation (STI) linked to the sustainable development goals (SDGs). Achieving the SDGs by 2030 is challenging but feasible. STI and financing STI will be of crucial importance in that endeavour. The business, government and higher education sectors are the main funders of STI in OECD countries, with the government and higher education sectors responsible for more fundamental and basic research. But foundations, philanthropies and national and international development banks (IDBs) are also important actors in funding STI in both OECD and developing countries. Mobilising public, private, philanthropic and development bank capital for STI activities and resources in developed as well as developing countries will rest on effective arrangements and partnerships. There are instructive lessons from public/private partnerships (PPPs) for funding of innovation projects in the OECD countries. However, financial innovation has often been highlighted as key to further capital mobilisation. This workshop aims to address “blended finance” for STI in both developed and developing countries. The workshop will in particular focus on the health sector and energy sectors, and sectors where technological and knowledge development issues are key for SDGs. More precisely, the objectives will be to:

- Identify good practice examples of mechanisms for applying “blended finance” concepts to the financing of STI for global public goods and SDGs;
- Illuminate the main leverage or blending mechanisms used in blended finance for STI;
- Highlight the main lessons, including from successful and less successful experiences in the health, energy and key technological areas on funding R&D, innovation and markets;
- Identify possible new avenues and arrangements for blended finance for STI.

### *Contributors and participants*

The main partners in organizing the workshop are the Wellcome Trust, the Research Council of Norway, the Blavatnik School of Government, Oxford University, and the OECD. OECD's Committee for Science, Technology and Innovation (CSTP) will include the topic of blended finance for STI in its work programme for the next two years.

Through this initiative, the organizers intend to gather a variety of organizations and institutions engaged in blended finance. These may be OECD (Committee of Science and Technology Policy as well as the Development Assistance Committee), the European Commission, European Investment bank (EIB), European Bank for Reconstruction and Development (EBRD), World Bank, regional development banks such as Asian Development Bank, sovereign wealth funds, pension funds, insurance companies, commercial investment and banks, venture capital funds, private equity firms, asset/wealth managers and private business representatives from key sectors, philanthropic organizations, universities and research labs, national ODA agencies, and policy makers.

***Registration and practical details***

**The online workshop will be conducted over 3 consecutive half- days on the following dates and times to fit most time zones:**

14 September 13:00-15:30 CET

15 September 13:00-15:30 CET

16 September 13:00-16:15 CET

Register to participate here: <https://forskningradet.pameldingssystem.no/blended-finance#/home>

Ahead of the online workshop, you will get access to presentations from speakers and panelists. Please make time to review these before the workshop.

Connection details will be sent separately to pre-registered participants only.

## Draft programme of the workshop

The programme of the workshop will follow a simple structure of three substantive sessions in addition to an opening and a closing session. Sessions 3 and 4 will be followed by breakout sessions for more interactive discussion. The workshop is foreseen to cover 3 half-days (13:00 – 15:30 CET to fit most time zones) on 14-15 September 2020, and 13.00-16.15 CET on 16 September 2020).

### 14 September 2020

#### *Session 1: Opening and key note introductions*

13.00-13.45

This session will introduce the agenda, state the background and lay out the case of blended finance for STI for SDGs.

13.00 – 13.05

**Svend Otto Remøe**, special adviser, Research Council of Norway

*Practical information*

13.05-13.15

**John-Arne Røttingen**, Chief Executive, Research Council of Norway:

*Welcome and a brief outline of the workshop and what we want to achieve*

13.15-13.25

An address of urgency:

**Jeremy Farrar**, Director, Wellcome Trust:

*What does Covid-19 tell us about the need for financial innovation?*

13.25-13.45

*Key note:*

**Anouj Mehta**, Unit Head, Green and Innovative Finance and the ACGF, Southeast Asia Department, Asian Development Bank: *Blended Finance: Current Landscape and a tool for attracting diverse capital sources*

13.45-15.30

***Session 2: Blended finance for STI in SDG-related development: Partners and perspectives***

The aim is to identify key issues for blended finance and conditions under which private capital may be incentivised to partner for blended finance to better support STI-based development. Panelists will have 15-minute presentations followed by a moderated discussion open for participants.

Chair: **Calum Miller**, Chief Operating Officer and Associate Dean of administration, Blavatnik School of Government

- **Naoto Kanehira**, Senior Private Sector Specialist, World Bank: *International partnerships for blended finance for STI*
- **Felicitas Riedl**, Head of life sciences division, European Investment Bank: *How does STI fit in EIBs strategy?*
- **Christopher Egerton-Warburton**, Co-CEO, Lion's Head Global Partners: *Incentives for partnerships: current challenges*
- **Paul Horrocks**, Senior Policy Analyst, Private Finance for Sustainable Development, DCD/OECD: *Are the OECD Guidelines for blended finance appropriate for STI?*
- **Structured discussion**

**15 September 2020**

13.00-15.30

***Session 3: Operating blended finance for STI in health***

This session will provide a set of cases of how blended finance has been arranged with a specific focus on health. The aim of the session is to highlight practical lessons from real world cases, identify different financing methods and challenges experienced by various groups of investors, and identify challenges in blended finance for health. Panelists will introduce 7-8 minutes, based on more expanded presentations available for participants. The introductions will be followed by a moderated discussion and breakout sessions for in-depth discussions.

13.00-14.00

**Panel discussion:**

Chair: **John-Arne Røttingen**, Chief Executive, Research Council of Norway

- **Peter Beyer**, Senior adviser, World Health Organization, and **Victoria Goodfellow**, Executive director, Lion's Head Global Partners: *A blended finance solution for AMR*
- **Thomas Cueni**, Director General of International Federation of Pharmaceutical Manufacturers (IFPMA): *Blended funding for antibiotic development to respond to the AMR crisis*

- **Kalipso Chalkidou**, Director of Global Health Policy and a Senior Fellow at the for Global Development and Imperial College: *A benefit-based AMC for a C19 vaccine: solving for the missing middle*
- **Angus O'Shea**, Founder Aranda.org & Aranda Insights: *R&D for public health: Requirements for long-term, sustainable financing for antibiotic development (tbc)*
- **Initial discussion**

14.00 -15.10 Break-out sessions

15.10 – 15.30 Plenary summing up

## 16 September 2020

13.00-16.15

### Session 4: Energy technologies and technological development for SDGs

This session will address and highlight selected cases of blended finance for energy technologies and other technological areas. These areas are key to achieving the SDGs and economic development. The aim of the session is to highlight practical lessons from real world cases, identify different financing methods and challenges experienced by various groups of investors, and identify challenges in blended finance for these areas. Panelists will introduce 7-8 minutes, based on more expanded presentations available for participants. The introductions will be followed by a moderated discussion and breakout sessions for in-depth discussions.

13.00-14.00

#### Panel discussion:

Chair: **Mario Cervantes**, Senior Economist, Committee for Scientific and Technological Policy  
OECD

- **Espen Mehlum**, Head of Knowledge Management, World Economic Forum, and **Florian Lahnstein**, Co-founder, Better Future Capital: *Global Climate Technology Platform*
- **Anna Krzyzanowska**, Adviser, EU DG Research and Innovation: *Mission innovation and Breakthrough Energy Ventures: Joint initiative between EC and Breakthrough Energy Coalition*

- **Joel Paula**, Policy Analyst, Directorate for Financial and Enterprise Affairs, OECD: *Blended finance for technological infrastructure*
- **Shiva Dustdar**, Head of division, Innovation Finance Advisory, European Investment Bank Advisory Services: *Blended finance for Key Enabling Technologies for SDGs*
- **Initial discussion**

14.00 – 15.10 Break-out sessions

15.10 -15.30 Plenary summing up

15.30-16.15:

### **Session 5: Concluding discussion**

Financing STI for SDGs – the way forward. In this last session participants will sum up the outcome of the workshop, exchange views about how to further develop blended finance for STI in addressing SDGs.

Chair: **Jeremy Farrar**, Director, Wellcome Trust

Introductions by:

- **Michael Hayes, Partner**, KPMG Ireland: *The future of blended finance for SDGs – a business view*
- **Amitabh Mehta**: Indus Blue Consulting, London. Director: Blended & Sustainable Finance, Innovative Finance Strategy, Funds, PPP: *Financing Climate & Ocean Pollution through Blended Finance Mechanisms*
- **Alessandra Colecchia**, Head of the Science and Technology Policy Division, Directorate for Science, Technology and Innovation, OECD: *Blended finance in STI policy development: The next CSTP programme of work.*
- **Discussion and conclusion**

# Background note

## *Introduction*

Investments in Science, Technology and Innovation (STI) is a key driver for change in many realms of life, not least for enhancing individual countries' competitiveness, economic and social development in general and for solving humankind's multitude of problems and challenges. It is also increasingly seen as a necessary component in delivering on the UN's Sustainable Development Goals (SDGs). STI is becoming key to developing countries' capacity for development, of which domestic STI capacity is crucial. STI investments are making up a greater share of official development assistance (ODA) as well as probably also of total official support for sustainable development (TOSSD), be it in building STI capacity in receiving countries or in donor countries' STI resource utilization and contributions to global public goods (GPGs), while ODA-eligible research and development activities also need to be further developed and clarified.

The SDGs represent a looming and complex agenda of challenges. To address and deliver on them will require financial resources exceeding the public budgets for ODA and domestic resources in most countries. Hence, many countries seek to combine public financial resources with private. "Blended finance", in the space of SDGs and Agenda 2030, is the strategic use of development finance for the mobilization of additional finance towards the SDGs for and in developing countries.<sup>1</sup> This has also been described as hybrid finance or as a combination of concessional and commercial funding provided by public or philanthropic development partners along with private partners. It can be structured in various formats of combining grants, debt, equity or guarantees (insurance) from public/philanthropic and private sources. The concept is also linked to the more general concept of social impact investments.

A next step in developing solutions for public, philanthropic and private finance is necessary. This concept note therefore outlines the background and aim of a workshop in which a particular modality of financial innovation may be addressed: Blended finance as an approach to leverage public funding with private resources to better finance STI for SDGs.

## *Financing SDGs*

The 2030 Agenda of the United Nations with its 17 SDGs may seem a tremendous ambition. There have been many estimates of how much investments are needed to achieve the SDGs by 2030. One example is an overall need to invest annually some 7 trillion USD by 2030, some 7-10% of global GDP, making up some 25 to 40% of annual global investment. By comparison, only 1,4 trillion USD are invested annually, leaving a vast investment gap. For developing countries alone the investment gap has been estimated to around 2,5 trillion USD per year.<sup>2</sup>

Closing the investment gap will require a mobilization of financial resources from public coffers as well as private such as investment banks, philanthropic sources, multilateral institutions and others. Whatever numbers are used in such estimates, it is widely accepted that there are huge benefits and

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<sup>1</sup> OECD DAC: Blended Finance Principles for Unlocking Commercial Finance for the Sustainable Development Goals. Paris 2018.

<sup>2</sup> World Investment Report 2014, UNCTAD.



economic potential to be expected from them.<sup>3</sup> However, the financial markets, abundant with resources, may not live up to expectations.

Following Kapoor's assessment<sup>4</sup>, the world is awash with cash. Some 80 trillion USD of long term savings are held in pension funds, sovereign wealth funds and other repositories. Over some decades savings invested in western economies have been able to create 6-8% annual returns. This was linked to steady growth in the labour force and productivity growth with annual economic growth of some 3-4%. This picture has changed with declining labour force and productivity growth. Further, the world has seen a major shift in supply of labour with the China and other emerging economies representing a significant part of the world's economic output.

The main issue in this context is shrinking returns from investments in western or the old industrial west. With massive stimulus from quantitative easing by governments to ensure a way out of the financial crisis, and demographic changes like a gradual elderly population, returns from investments in western economies are set to shrink, illustrated with the now close to zero interest rates around the globe as a result of the COVID 19 lock downs. The long term interest level is expected to stay very long, leading to a very bleak outlook for traditional investment strategies by asset managers.

On the one hand, capital will need to look elsewhere to ensure returns. On the other hand, the developing world represents the investment opportunities lacking in the rich world, but lacking the capital. Borrowing is cheap, and will stay that way for a long time to come, creating an immense opportunity to finance much needed investments in the developing world. Investing in this part of the world and with a strategic focus on the SDGs with their vast economic potential as well as their imperative for sustainable development, financing the SDGs may only need new mechanisms, partnerships, institutional capacities and incentives to make a real difference, both to investors and lenders and those at the receiving end.

### ***STI for SDGs***

The SDGs are fundamentally an agenda for human progress. They represent a complex as well as an ambitious agenda with goals that may often seem in conflict or having trade-offs with one another. Taking into consideration the trade-offs and interaction between many of these SDGs, Sachs et al reduce these SDGs to six key transformations which humankind needs to address (1. Education, Gender, and Inequality; 2. Health, Wellbeing, and Demography; 3. Energy Decarbonisation and Sustainable Industry; 4. Sustainable Food, Land, Water, and Oceans; 5. Sustainable Cities and Communities; and 6. Digital Revolution for Sustainable Development)<sup>5</sup>. Addressing these transformations require whatever capacities in science, technology and innovation than humankind can muster.

Science, technology and innovation (STI) have been key to the world's tremendous economic development over the past decades and even centuries. Investments in STI have proven to be highly profitable with great private and social returns. Further, STI is a vital enabling factor in our capabilities to address the grand or global challenges as formulated in the UN 2030 Agenda of the

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<sup>3</sup> OECD (2017), "Investing in Growth", OECD Publishing, available at: <http://www.oecd.org/environment/investing-in-climate-investing-in-growth-9789264273528-en.htm>.

<sup>4</sup> Kapoor, S.: Winter has come to finance: But a focus on developing economies may bring some warmth. A Re-Define Report for NORFUND, August 2019.

<sup>5</sup> Sachs, J.D., G. Schmidt-Traub, M. Mazzucato, D. Messner, N. Nakicenovic, and J. Rockström (2019), "Six Transformations to Achieve the Sustainable Development Goals", Nature Sustainability. DOI: 10.1038/s41893-019-0352-9.

SDGs. However, it is also true that unintended side-effects may not have been fully positive, and different nations, regions and communities have very different capacities for benefitting from STI developments.

Behind the acronym of STI hides a complex set of systems, structures, activities and processes. For example, universities are the key institutions to further the frontiers of knowledge through progress in scientific disciplines and thematically guided research. Technologies and innovation based on these developments of knowledge are developed and diffused in economies and communities, but with very different rates and benefits. While some countries are well equipped with STI capabilities, others are not, lacking significant resources to tackle pressing challenges. Still, STI may be the single-most important factor in human-kind's efforts to address the SDGs. The STI-related areas of investment for addressing the SDGs are therefore also almost limitless and include e.g. vaccines and medicines, technological infrastructures, research infrastructures, education and human capital, new energy technologies, health information systems, innovative water management, business models and partnerships, and the list goes on. Further, the very processes of technology transfer and innovation from knowledge through the maze of intermediaries and complex barriers, incentives and constraints in socio-economic systems to market uptake and integration often require very different financing tools. Hence, identifying the relevant STI areas for SDGs is vital, as are factors such as the investibility, bankability and risk profiles of the various projects to better ensure appropriate funding.

STI may drive transformative change. Information and Communication Technologies (ICT) are expanding with the rapid development of digitalization. Digital public goods are seen as important to deliver on many of the SDGs. Local adoption and adaptation of technologies is needed to get the most benefits from them. This leads to the need for investing in infrastructure, skills and education, and institutional capacity development. The private sector often lacks incentives to intervene or invest in developing countries' capacity development, leading to the need to bring private sources in line with public investments and funding programs. STI is recognized as a cross-cutting issue for the SDGs, and developing countries may also be able to leapfrog development by adopting new technologies and increasingly also taking part in developing them.

Recently, several activities have addressed the need to bring STI policy to deliver more on SDGs. For example, the Research Council of Norway in partnership with the OECD's Committee on Science and Technology Policy (CSTP) organized a workshop on STI for Global Public Goods (GPGs) in June 2019 (see report and meeting outcomes). Of the many issues discussed in the workshop, financial innovations were seen as in great need. Multi-stakeholder partnerships, partnerships between public and private sector, better demand side incentives, coalition building for upscaling solutions and governance challenges were all addressed as vital to improve the funding arrangements for STI for sustainable development.<sup>6</sup>

### ***COVID-19: A most telling case***

The current Corona crisis with the COVID-19 disease has proven to be a vastly serious pandemic. The infected cases and associated deaths are ballooning around the world, albeit to very different degrees in different countries. The crisis has shown how unprepared many countries and regions have been to meet such a crisis, although a pandemic of this kind has been warned of as a probably event for quite

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<sup>6</sup> Svend Remøe and Mario Cervantes (2019): STI for Global Public Goods: Report from a Workshop. OECD, Paris. [http://upload.forskingsradet.no/CSTP\\_%20STI\\_GPG\\_Workshop.zip](http://upload.forskingsradet.no/CSTP_%20STI_GPG_Workshop.zip)

some time. While there are many aspects to this challenge, a critical issue is the fact that there is an urgent need to develop a global public good. Vaccines and curative medicines need to be available equitably, testing equipment and protective gear for health workers are in high demand, to name the most important problems that have become very visible.

The pandemic has also led to severe lock downs of economic life, with layoffs, collapse of demand, disruption of value chains, collapse of exports and travel. The economic fallout is immense, creating social and economic problems of a very different sort than the pandemic itself. It is often argued that this event will lead to a significant pullback of globalization with its open trade, international value chains and innovation networks. While this is evident in the short term, international collaboration in STI has seen a dramatic capability to respond, with much of the global research community in the relevant fields having mobilized, partly coordinated by WHO. Other partnerships in R&D in the area of health and vaccines are also stepping up their collaborative work, such as CEPI (an international alliance to finance and coordinate the development of vaccines for emerging infectious diseases), GAVI (a public-private partnership involving various multilateral organizations, philanthropies, pharmaceutical firms, and national governments, focusing on creating equal access to vaccines for children in developing countries).<sup>7</sup>

In a recent workshop on COVID-19 organized by OECD, Feigl illustrates how blended finance can help address the financial needs for developing the public goods for the immediate crisis mitigation.<sup>8</sup> Referring to various sources, she sums up the following financial needs, underlining the importance of early response:

- "The World Bank estimates that an additional US\$23.54 billion would be needed to prepare, respond, and treat COVID-19 in Sub-Saharan Africa, covering a period of 250 days. Under the social distancing scenario, US\$53 billion would be needed.
- Gavi estimates that an initial investment of US\$2 billion would enable 20 million health care workers to be vaccinated, create a stockpile necessary to deal with emergency outbreaks, and start establishing production capacity to vaccinate additional high-priority groups.
- COVID-19 shows it is more important than ever to focus on the SDG3 investment in the longer term, which has an annual investment gap of US\$140 billions.
- ODA from members of the OECD's Development Assistance Committee (DAC) for healthcare sector from all donors (bilateral, multilateral and private foundations) averaged US\$ 26 billion per year
- UN Secretary-General has launched a US\$2 billion global humanitarian response plan to fund the fight against COVID-19 in the world's poorest countries.
- The World Bank Group will make up to US \$1.3 billion in new IDA financing for COVID response and preparedness activities".

Blended finance can help fill the funding gap in developing countries, fast-track the awarding of ODA-funds, and provide much needed working capital to SMEs in the relevant value chains, with potential impacts on up-scaling affordable diagnosis and treatments and maintaining important supply chains for food supply, vaccines and other items. A medium to long term response could support countries in their recovery phase, in improving health and health care systems and economic recovery.

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<sup>7</sup> Guimón, José, and Rajneesh Narula. "A Happy Exception: The Pandemic Is Driving Global Scientific Collaboration." *Issues in Science and Technology* (April 22, 2020).

<sup>8</sup> Feigl, A.: Can blended finance deliver? A discussion of how blended finance can support the COVID-19 response in developing countries. Health Finance Institute, May 2020.

## *On blended finance*

Alignment of public and private funding needs a framework, a system of rules and incentives by which funding arrangements may be concluded. Recognizing the need for such a framework, the OECD Committee for Development Assistance (DAC), has issued principles which have been an important step for better alignment:

- Anchor blended finance use to a development rationale
- Design blended finance to increase the mobilization of commercial finance
- Tailor blended finance to local context
- Focus on effective partnering for blended finance
- Monitor blended finance for transparency and results

The OECD DAC principles have also been developed in coordination with other international initiatives, such as related to direct foreign investments, or the "DFI Enhanced Principles on Blended Concessional Finance for Private Sector Projects".<sup>9</sup> The private sector has also attended to this at an increasing rate.

A main idea of blended finance is to mobilise capital that would not otherwise be committed to development related projects including projects for technology development for solutions relevant to the SDGs. By blending, commercial capital may be attracted to benefit society at large while also providing reasonable returns to investors. Applying frameworks that remove disincentives and bottlenecks preventing private investors from targeting countries, sectors or technology areas for additional funding is needed. An example is the Deutsche Bank's Universal Green Energy Access Programme (UGEAP) which is typically involved where public actors provide a "first loss" facility which buffers private investment. The UGEAP is e.g. active in African countries to contribute to universal electricity access.<sup>10</sup> Another example is the recent Malaria Fund initiative from the European Investment Bank (EIB). There are many schemes in development utilizing these concepts for implementing green technologies, energy solutions, agriculture technologies, health technologies etc. where a private-only finance model does not work due to market failures. However, so far fewer schemes seem to have been established for financing technological innovation that is more risky and will need a portfolio of projects. Combining private and public sources of finance is not new in STI, and risk reduction schemes for private partners are typically grants or subsidies. Blended finance implies a more equal sharing of risk through joint positions with regard to return on investments (RoI), and risk profiles and positions may be designed differentially according to project specificities.

While an agreed framework (see OECD/DAC principles above) is generally in place, and much attention has been paid to blended finance also from the private sector, the challenge is still how to make proper arrangements in various cases for funding, including how to give necessary guarantees and structure risk with waterfall models where different types of capital (public, long term/low risk pension and sovereign funds, and shorter term/higher risk private capital) take different tranches. The projects in question vary greatly, as do local contexts. The projects may be directed towards traditional projects such as in agriculture or health care provision, as well as in new technological areas like block

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<sup>9</sup> DFI Working Group on Blended Concessional Finance for Private Sector Projects. Joint report, October 2018 Update. [https://www.ifc.org/wps/wcm/connect/3aaf1c1a-11a8-4f21-bf26-e76e1a6bc912/201810\\_DFI-Blended-Finance-Report.pdf?MOD=AJPERES&CVID=mpvbN7c](https://www.ifc.org/wps/wcm/connect/3aaf1c1a-11a8-4f21-bf26-e76e1a6bc912/201810_DFI-Blended-Finance-Report.pdf?MOD=AJPERES&CVID=mpvbN7c)

<sup>10</sup> Crisna Morgado, N. and B. Lasfargues (2017), "Engaging the private sector for green growth and climate action: An overview of development co-operation efforts", OECD Development Cooperation Working Papers, No. 34, OECD Publishing, Paris

chain applications and digital finances. Projects or initiatives in different sectors or for different technologies will often need dedicated frameworks or contractual solutions to work well.

The right blends of funding sources - public, private and philanthropic, can make headways in addressing the SDGs and more effective ways to include STI. A recent study by OECD revealed through 180 responses that aggregate blended finance reached some 60 billion USD in 2017, reaching 111 countries. USD 7,6 billion had been invested in least developed countries (LDCs). About 7,5% of the commercial capital in blended funds went towards the LDCs. Energy and banking were the primary industries to receive blended finance, but other sectors such as health, water, education, agriculture and sanitation were also represented. However, the majority of projects are related to implementation and not innovation. The survey illustrated well the importance of blended finance in funding for SDGs:

To achieve the SDGs, a significant scale-up of investment is required. To date, blended finance has been deployed primarily in middle-income countries and in a limited range of sectors, where the business case is clearer and the potential for revenue streams stronger. As blended finance becomes adopted by new actors and refined by existing actors, its use to help achieve the SDGs will inevitably expand and the potential to utilize blended finance in underserved sectors will likewise be explored.<sup>11</sup>

Most efforts in STI on themes that are related to the SDGs are funded and conducted in national contexts. However, the challenges are severe and need multilateral efforts to ensure critical mass and coherent global strategies. Several recent contributions point to a need to bring STI more effectively into the global efforts to address SDGs. This concerns issues such as addressing the existing gaps in the R&D and investment cycle, the lack of pull or demand side incentives in particular relevant for development related innovations, overcoming the "death valley" problem in the innovation chain and upscaling innovations to market uptake, and increasing deal flows to investors. In the area of health, this is typically a challenge for the late stage clinical trials necessary to document safety and effectiveness of new technologies. In the area of clean energy, this is in particular a challenge in the first phases of technological shifts when new technologies need to compete with price points etc of established solutions.

UN has addressed the need for coordination through roadmaps and mechanisms for blended finance<sup>12, 13</sup>. Blended finance may ensure risk-adjusted funding arrangements which have the potential to significantly improve and increase the role of the private sector. Global governance for SDGs will need to include public-private partnerships with arrangements that increase the investibility of the projects for private investors. However, this is not enough. While much blended finance funds are geared towards sustainable development, they are not that much focused on projects that may facilitate R&D and technological innovation towards commercialization and markets. Blended finance has the potential to embrace innovation, but is then of course also adding an additional layer of risk on top of

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<sup>11</sup> Basile I., J. Dutra, (2019), "Blended Finance Funds and Facilities: 2018 Survey Results". OECD Development Co-operation Working Papers, No 59, OECD Publishing, Paris, p.52.

<sup>12</sup> Turner, P. and Crave, N.: Financing sustainable, resilient and inclusive solutions to attain SDGs 6, 7, and 11. Undated

<sup>13</sup> Dahlman, C. and Kanehira, N.: A Guidebook for the Preparation of STI for SDGs roadmaps: Draft for consultation. United Nations Inter-Agency Task Team on Science, Technology and Innovation for the SDGs (IATT) Sub-Working Group on STI Roadmaps co-led by World Bank, DESA, UNCTAD and UNESCO, 2019.

the normal risk picture associated with poorly developed markets. New technologies such as block chain may also create and facilitate more effective solutions for blended finance.<sup>1415</sup>

Private finance may be easier to attract to countries and environments that are stable and represent a recognized potential for returns on investments. This is even more so the case for funding STI-related projects. Hence, much blended finance occurs in countries with economic growth, available human capital and stable institutions, i.e. in middle-income countries (MICs). However, as also SDG 13 signifies, peace and security are public goods, worthy of being addressed by the global community. Fragile contexts, with the presence of conflict or crisis, are less attractive for private investments, and STI has less space and opportunities. Basil and Neuneubel (2019)<sup>16</sup> has recently shown that fragile contexts are complex and unpredictable and that private investments have been low. Investments in STI in such contexts are likely to remain miniscule if not additional de-risking is accomplished.

More attention is needed to measuring blended investments in STI. ODA-related STI investments are increasing in many countries, but this is not the case across all countries. The STI component in ODA is typically rather low (around 5%), and studies by the World Bank indicate that the private sector funding of technology and equipment far outweighs public investments targeted to developing countries. This makes it on the one hand necessary to pair public and private funding better, and on the other hand it illustrates the need for better understanding of impacts of blended finance. This concerns for example variations in public/private shares in funding arrangements, variations in projects and their contents and objectives, effective mechanisms for leverage of private funding. Proper evaluation approaches and indicator frameworks are needed to gain ensure the most useful policy options.

In summary, there seems to be widely adopted practices of an emerging use of blended finance for sustainable development related goals, but this seems to first and foremost be used for implementation efforts and less for innovation of new technologies and solutions. Likewise, blended finance in the context of industrial policy and economic growth objectives in countries has for many years had an instrumental role in STI in contributing to risk alleviation for private sector investments in R&D. However, there is still not a fully established practice for blended finance for STI with relevance to development and the SDGs, in particular. There are some emerging initiatives, though, which could spark more widely adoption.

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<sup>14</sup> <https://www.17assetmanagement.com/17-am-news/2019/4/9/how-blockchain-can-advance-blended-finance-amp-sdg-aligned-investing>

<sup>15</sup> <https://forestsnews.cifor.org/56697/future-finance-blend-bond-and-blockchain?fnl=en>

<sup>16</sup> Basile, I. and C. Neunuebel (2019) "Blended Finance in Fragile Contexts: Opportunities and risks", OECD Development Co-operation Working Papers, No 62 OECD Publishing, Paris.