

# Financing Sustainable Development: Implementing the SDGs through Effective Investment Strategies and Partnerships

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## **About this document**

*This draft document has been prepared as input into the preparations of the Third Conference on Financing for Development that will be hosted by the Government of Ethiopia in Addis Ababa on 13-16 July 2015. Building on the August 2014 report of the Intergovernmental Committee of Experts on Sustainable Development Financing, this report outlines a practical action agenda for the conference.*

*We underscore the preliminary nature of the analysis and recommendations outlined in this draft document. We are therefore looking for corrections, comments, and suggestions for improvement. We hope that an improved version of this report will be useful to the intergovernmental preparations of the July 2015 conference.*

*The public consultation will run from 1 December 2014 to 10 January 2015. To submit your comments please use the online comment form on the SDSN website (<http://www.unsdsn.org/fsd>), where you will also find a version of this document with line numbers.*

## **About the SDSN**

*Commissioned by UN Secretary-General Ban Ki-moon in 2012, the Sustainable Development Solutions Network (SDSN) mobilizes scientific and technical expertise from academia, civil society, and business in support of sustainable development problem solving at local, national, and global scales. More information on the SDSN is available at [www.unsdsn.org](http://www.unsdsn.org).*

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<sup>1</sup> The authors are Director and Executive Director of the Sustainable Development Solutions Network (SDSN). The views expressed in this report may not represent the views of the SDSN or its Leadership Council.

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## Acronyms and Abbreviations

<b>ACT</b> – Artemisinin-based Combination Therapy	<b>IFFIm</b> – International Finance Facility for Immunization
<b>AfDB</b> – African Development Bank	<b>IFPRI</b> – International Food Policy Research Institute
<b>AIMS</b> – Aid Management Systems (AIMS)	<b>IMF</b> – International Monetary Fund
<b>APP</b> – Africa Progress Panel	<b>INDC</b> – Intended Nationally Determined Contributions
<b>ARV</b> – Anti-Retroviral	<b>IPBES</b> – Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
<b>BEPS</b> – Base Erosion and Profit Shifting	<b>IPCC</b> – Intergovernmental Panel on Climate Change
<b>CAADP</b> – Comprehensive Africa Agriculture Development Programme	<b>IPPF</b> – Infrastructure Project Preparation Facilities
<b>CBD</b> – Convention on Biological Diversity	<b>IWRM</b> – Integrated Water Resources Management
<b>CCM</b> – Country Coordination Mechanisms (of the GFATM)	<b>JMP</b> – Joint Monitoring Programme (for water and sanitation)
<b>COP21</b> – 21 <sup>st</sup> Conference of the Parties under the UNFCCC	<b>LLINs</b> – Long-Lasting Insecticidal Nets
<b>DAC</b> – Development Assistance Committee of the OECD	<b>MDB</b> – Multilateral Development Banks
<b>DDPs</b> – deep decarbonization pathways	<b>MDGs</b> – Millennium Development Goals
<b>DFIs</b> – Development Finance Institutions	<b>M&amp;E</b> – Monitoring & Evaluation
<b>DOTS</b> – Directly Observed Treatment Short-Course	<b>MIGA</b> – Multilateral Investment Guarantee Agency
<b>ECD</b> – Early Childhood Development	<b>MSF</b> – Médecins Sans Frontières
<b>FAO</b> – Food and Agriculture Organization	<b>NEPAD</b> – New Partnership for Africa’s Development
<b>FSD</b> – Financing Sustainable Development	<b>NGO</b> – Non-governmental organization
<b>FTI/EFA</b> – Fast Track Initiative for Education For All	<b>ODA</b> – Official Development Assistance
<b>GAFFSP</b> – Global Agriculture and Food Security Program	<b>OECD</b> – Organization for Economic Cooperation and Development
<b>GAVI</b> – Global Alliance for Vaccines and Immunizations	<b>OOF</b> – Other Official Flows
<b>GCF</b> – Green Climate Fund	<b>OWG</b> – Open Working Group on the Sustainable Development Goals
<b>GDP</b> – Gross Domestic Product	<b>PEPFAR</b> – President's Emergency Plan For AIDS Relief
<b>GEF</b> – Global Environment Facility	<b>PPP</b> – Public-Private Partnership
<b>GFATM</b> – Global Fund to Fight AIDS, Tuberculosis and Malaria	<b>PPPT</b> – Public-Private Partnership for Technology
<b>GFE</b> – Global Fund for Education	<b>RDD&amp;D</b> – Research Development, Demonstration & Diffusion
<b>GFF</b> – Global Financing Facility in support of maternal and newborn health	<b>SDGs</b> – Sustainable Development Goals
<b>GIF</b> – Global Infrastructure Facility	<b>SE4All</b> – Sustainable Energy for All
<b>GNI</b> – Gross National Income	<b>SUN</b> – Scaling up Nutrition Movement
<b>GPE</b> – Global Partnership for Education	<b>UNDP</b> – United Nations Development Programme
<b>HLP</b> – High-Level Panel on the Post-2015 Development Agenda	<b>UNFCCC</b> – UN Framework Convention on Climate Change
<b>IATI</b> – International Aid Transparency Initiative	<b>UNFPA</b> – United Nations Family Planning Association
<b>ICESDF</b> – Intergovernmental Committee of Experts on Sustainable Development Financing	<b>UHC</b> – Universal Health Coverage
<b>ICT</b> – Information and communication technologies	<b>WBCSD</b> – World Business Council for Sustainable Development
<b>IDDRI</b> – Institute for Sustainable Development and International Relations	
<b>IDA</b> – International Development Association	
<b>IEA</b> – International Energy Agency	
<b>IFAD</b> – International Fund for Agricultural and Development	

## **Executive summary and key messages**

**Three summits in 2015 will set the stage for international cooperation over the coming decades.** In July 2015, governments will convene for the Third Conference on Financing for Development Addis Ababa, which will focus on Financing Sustainable Development (FSD). Two months later, in September 2015, they are scheduled to adopt a new set of Sustainable Development Goals (SDGs) at the United Nations in New York. Finally, in December 2015, the 21<sup>st</sup> Conference of the Parties (COP21) of the UN Framework Convention on Climate Change (UNFCCC) is expected to adopt a binding agreement on the long-term reduction of greenhouse gas emissions.

**The three summits will rise or fall together. Without financing there can be no credible agreement on the SDGs or climate change.** Without the SDGs, there can be no guidance on how to design a financing framework for sustainable development. Without a successful climate summit, the hope to end poverty will be lost. In this sense, next year's three summits will forge the sustainable development future of the planet, successful or not. The 2015 Addis Consensus must update and broaden the Monterrey Consensus to cover the financing needs of the SDGs as well as the climate agenda.

**This draft report examines some of the questions involved in designing new institutions to handle the long-term, complex investments needed for key sustainable development priorities.** It builds on and complements the reports from the Intergovernmental Committee of Experts on Sustainable Development Financing, the World Bank, and many others. In particular, the report seeks to add the following to the debate on Financing Sustainable Development:

- **An in-depth discussion of key policy issues that need to be considered by FSD.** The report is extensively referenced to guide the interested reader to additional background documentation.
- **An assessment of public private investment needs across key SDG investment areas.**
- **An analysis of how successful public-private investment partnerships have worked in health and lessons might be applied to other areas,** such as education, agriculture, water and sanitation, ecosystems and biodiversity, a data revolution for the SDGs, or infrastructure.
- **Practical proposals for action that could be promoted by member states in the run-up to the Addis conference.** If adopted these actions can help build momentum towards a successful FSD Conference, SDG Summit, and climate conference.
- **Policy options that can be considered for adoption at the FSD conference.** The report takes a fairly comprehensive view at the FSD agenda and identifies a preliminary set of ten recommendations for consideration by member states.

**FSD must recognize the complementary roles of public and private commercial financing.** Private commercial finance can support investments in private assets, such as factories, provided they generate an appropriate return. In turn private financing is intrinsically insufficient or impossible in several key areas for the SDGs: (i) helping the poor who do not have purchasing power meet basic needs, (ii) networked infrastructure where social benefits exceed private returns, (iii) global public goods (e.g. post-conflict assistance, biodiversity, climate change); and (iv) promoting new technologies. **A**

central challenge for FSD is how the public-private partnerships needed to make the SDG investments can be organized and financed.

The public private investment needs for the SDGs and might be summarized as follows:

### Schematic illustration of public/private financing needs for SDGs

Open Working Group Goal	Scale of incremental investments	Share private investments	Share public investments	Role for household contributions?	Priority pooled international finance mechanisms described in this paper
Goal 1: End poverty in all its forms everywhere	Covered under other goals				All pooled finance mechanism contribute to this goal
Goal 2. End hunger, achieve food security and improved nutrition, and promote sustainable agriculture	+++	++	++	Limited role in agriculture	Proposed Smallholder Fund (building on IFAD and GAFSP); nutrition modalities TBD
Goal 3: Ensure healthy lives and promote well-being for all at all ages	++	+	+++	0	GAVI, GFATM, GFF, UNFPA, UNICEF
Goal 4. Ensure inclusive and equitable quality education and promote life-long learning opportunities for all	++	+	+++	0	Global Fund for Education (building on Global Partnership for Education)
Goal 5. Achieve gender equality and empower all women and girls	Largely covered under other goals				In particular finance mechanisms for health and education
Goal 6. Ensure availability and sustainable management of water and sanitation for all	+++	++	++	+	Dedicated financing mechanism or regional facilities (TBD)
Goal 7. Ensure access to affordable, reliable, sustainable, and modern energy for all	+++	+++	+	++	Green Climate Fund and infrastructure finance
Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Covered under other goals				All pooled finance mechanism contribute to this goal
Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	+++	+++	+	N/A	See infrastructure section
Goal 10. Reduce inequality within and among countries	Covered under other goals				All pooled finance mechanism contribute to this goal
Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable	+++	++	++	N/A	See infrastructure section
Goal 12. Ensure sustainable consumption and production patterns	++	++	++		In particular GCF, GEF, proposed Smallholder Fund, and infrastructure finance
Goal 13. Take urgent action to combat climate change and its impacts	+++	+++	++ (including virtually all adaptation finance)	N/A	GCF, GEF, infrastructure finance, other pooled finance mechanisms
Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development	+++	++	++	N/A	GEF and proposed Smallholder Fund
Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	+++	++	++	N/A	GEF and proposed Smallholder Fund
Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	+	+	+++	N/A	International Development Association (IDA) and budget support mechanisms
Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development	TBD	TBD	TBD	TBD	TBD

Source: Authors' analysis

**Meeting the SDGs will require additional investments in the order of \$[2-3] trillion. FSD will require a clear sense of the volumes of public and private resources that are needed.** The report consolidates publicly available estimates to arrive on a preliminary assessment of financing needs. These estimates are preliminary and incomplete. They will be revised and expanded over the coming months.

**Preliminary and incomplete incremental investment needs for the SDGs in developing countries (in constant 2010 \$ billion)<sup>2</sup>**

Investment Area	Incremental annual investment needs in developing countries through to 2030				Corresponding pooled finance mechanisms
	Total needs	Private, commercial financing	Public, non-commercial financing	Of which ODA/public climate finance	
Health	51-80	~ 0	51-80	TBD	GAVI, GFATM, GFF, UNFPA, UNICEF
Education	[38]	~ 0	[38]	[19]	Proposed Global Fund for Education
Food security	46	2	44	TBD	IFAD, GAFSP, proposed Smallholder Fund
Access to modern energy (SE4All)	34	10.5	23.5	12.8	GCF
Access to water and sanitation	27	3-5	22-24	TBD	Global Water and Sanitation Fund or regional facilities
Data for the SDGs	TBD	TBD	TBD	TBD	TBD
Ecosystems including biodiversity	[18-48]	[3-7]	[15-41]	TBD	GEF
Other agriculture	210	195	15	0	N/A
Large infrastructure (power, transport, telco, watsan)	689-1599	291-755	398-844	TBD	N/A
Climate change mitigation	[380-680]	[300-564]	[80-115]	TBD	GCF
Climate change adaptation	60-100	0	60-100	TBD	GCF
<b>Total</b>	<b>[1559 - 2873]</b>	<b>[805 - 1539]</b>	<b>[752 - 1335]</b>	<b>TBD</b>	

Sources: See Appendix 1

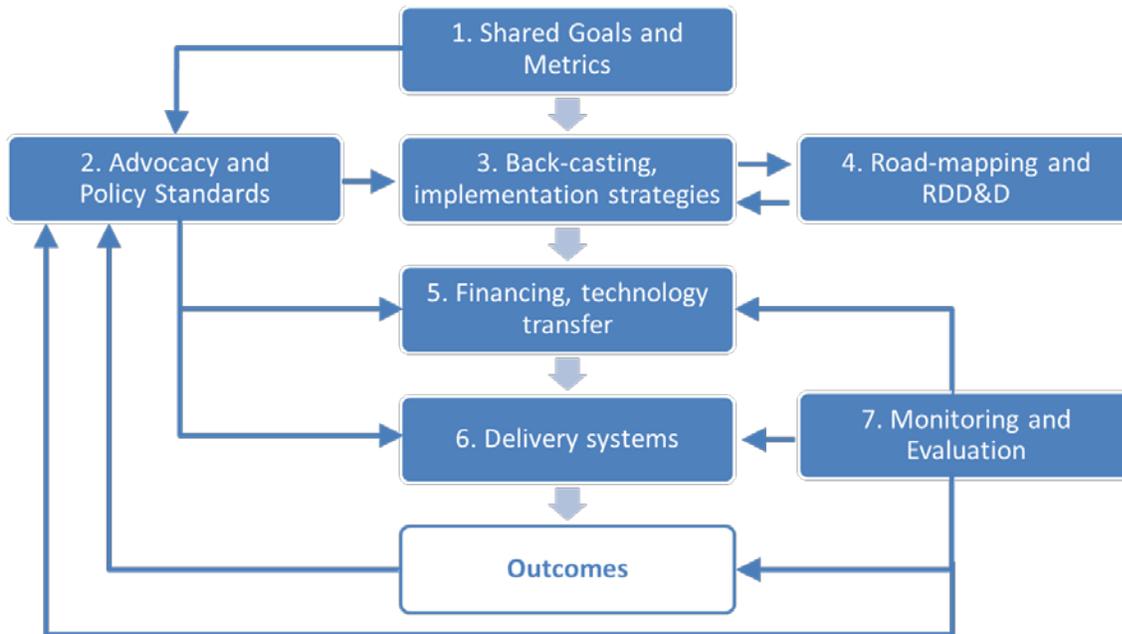
**Global public goods are an important part of Financing Sustainable Development.** Key investment priorities that are discussed in the report include: climate change mitigation and adaptation; health (infectious diseases); ecosystem services and biodiversity; and technology development and diffusion

**The health sector shows how goal-based public-private partnerships can be organized with important lessons for other SDG investment areas.** Effective partnerships are not centrally planned, and they do not require one actor that oversees all activities. Yet delivering results at the required scale requires a high degree of mobilization and organization. Such global partnerships involve many actors around **(1) Shared goals and metrics** that provide a coherent narrative for action, mobilize all actors involved in a particular area, and galvanize the community to develop clear strategies for implementation, raise the financing, and develop the technologies needed to implement them; **(2) Advocacy and policy standards** to raise awareness of the importance and feasibility of the global goals, mobilize stakeholders, ensure accountability, and translate lessons into standards that other countries can emulate; **(3) Back-casting and implementation strategies** to show how the goals can be achieved through sustained investments and supportive policies; **(4) Technology road-mapping for Research, Development, Demonstration and Diffusion (RDD&D)** to identify missing technologies and organize public-private partnerships to address

<sup>2</sup> To simplify terminology we refer to US\$ simply as \$ throughout this document.

them; **(5) Financing and technology transfer** mobilizing the right mix of public and private resources to implement goal-based investment strategies; **(6) Delivery systems** that translate policies, strategies, and financing into outcomes; and **(7) Monitoring and Evaluation (M&E)** to sharpen the understanding of what works, support the advocacy, and hold all partners accountable.

### Seven core components of goal-based investment partnerships



**Success in the health sector and lack of progress in other areas demonstrate the central role of pooled financing mechanisms in financing, organization, knowledge transfer, and advocacy.** Pooled mechanisms like the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) help to promote: (i) effective country-led programs & national ownership; (ii) lower transaction costs and minimal duplication; (iii) effective mobilization of private finance and leveraging; (iv) improved allocation of aid to countries most in need; (v) predictable multi-year funding commitments; (vi) massive acceleration of innovation through business engagement; (vii) technical integrity, rapid learning, and efficient knowledge transfer; (viii) a global voice and mobilization of civil society; (ix) transparent resource mobilization parameters; and (x) effective financing for technology transfer.

**Pooled financing mechanisms are one of many necessary tools for FSD.** They complement bilateral programs and project-based finance mechanisms. In several areas, such as infrastructure investments, global funds are not an appropriate mechanism for building global partnerships. **The World Bank’s International Development Association (IDA) plays a central role in providing flexible funding that can complement resources from other pooled mechanisms.**

Pooled financing mechanisms do not work everywhere. Criteria for when such mechanisms ought to be considered might include: (i) program- or system-based financing needs (as opposed to project-based financing); (ii) areas that require substantial ODA volumes, particularly for operating expenditure; (iii) need to mobilize different types of stakeholders, including the private sector; and (iv) need to harmonize the international development finance architecture. Similarly, key design features for effective pooled

financing mechanisms could include: (i) independent multilateral organization with multi-stakeholder board; (ii) system-based investment windows; (iii) demand discovery around clearly defined program windows; (iv) independent technical review of country proposals and rigorous M&E; and (v) multi-annual replenishment.

**The draft report reviews major investment strategies and financing mechanisms in key investment areas.** Some key points from the discussion are summarized below, but they cannot substitute for the detailed discussions in the report and the cited references:

1. **Health:** Domestic resource mobilization for health must increase, and building on the success of the GFATM and GAVI the sector needs to harmonize and scale-up investments in health systems.
2. **Education and learning:** While domestic resource mobilization has increased, the sector has not been successful in mobilizing additional international resources under the MDGs. Education in low-income countries remains vastly underfunded. We propose that the Global Partnership for Education be transformed into a Global Fund for Education. Other partnership components that require strengthening include metrics, advocacy, back-casting strategies, and more creative use of modern technologies to improve learning outcomes and reduce the cost of education.
3. **Sustainable agriculture, food systems, and improved nutrition.** The vast majority of investments in agriculture comes from private source and requires sound policy frameworks. A strengthened global partnership is needed around three public-private investment challenges: (i) the needs of smallholder farmers and artisanal fishermen – available financing mechanisms including IFAD and GAFSP are inadequately resourced; (ii) nutrition – a complex, multi-sectoral investment challenge in need of an improved institutional financing architecture; and (iii) agricultural research around a strengthened Consultative Group on International Agricultural Research.
4. **Water and sanitation:** In spite of significant progress on access to water, the world is vastly off-track towards ensuring universal access to safe drinking water and sanitation by 2030. The sector needs greater political attention and resources buttressed by improved financing mechanisms that can leverage private resources where possible.
5. **Ecosystem services:** Investments in ecosystem services are woefully inadequate. To preserve vital global public goods and the underpinnings of many economies, the world needs a strengthened Global Environment Facility combined with a stronger focus on improved metrics, the scaling-up of successful strategies for managing ecosystems, and improved private value chain initiatives.
6. **A data revolution for sustainable development:** In order to become the world's scorecard and management tool for achieving sustainable development, the SDGs require a 'data revolution', which in turn requires adequate resourcing. Efforts are underway to quantify investment needs and explore opportunities for building a global partnership on the data revolution. These will be reported in revised versions of this document.
7. **Climate finance and access to modern energy services:** The Green Climate Fund is the pivotal mechanism for mobilizing and disbursing incremental investments to adapt to climate change

and reduce greenhouse gas emissions. The fund is an add-on to existing domestic, bilateral, and multilateral mechanisms. It now requires adequate resourcing and a clear articulation of how it will work with other mechanisms. An important priority that could be addressed through a dedicated investment window is access to modern energy services under the SE4All framework.

8. **Financing large-scale infrastructure:** Long-term investments in sustainable infrastructure are insufficient in most countries – rich and poor alike. It is vital that all infrastructure investment be compatible with achieving all SDGs, particularly the goal relating to climate change. A goal-based investment partnership for infrastructure cannot rely on a pooled financing mechanism. It requires: (i) National Public Investment Systems and Infrastructure Project Preparation Facilities for early-stage projects; (ii) Effective subsidy and investment risk-mitigation mechanisms; (iii) Sound global rules to mobilize private finance and disclosure requirements; (iv) Harmonized infrastructure investment platforms and an effective secondary market; (v) Deeper local saving pools for local infrastructure investments. The report explores practical recommendations in each of these areas.
9. **Public-Private Technology Partnerships for the SDGs.** Many goals – particularly on climate, agriculture, urban development – can only be met with the help of improved technologies. Yet, these technologies are undersupplied by private markets acting alone. Public investments in key R&D priorities are vastly underfunded and inadequately organized. The global community must adopt international strategies for ‘directed technological change’ through public-private partnerships to accomplish targeted technology breakthroughs.

**A central question for FSD is how incremental public and private resources can be mobilized.** Domestic resources should take precedence over international public financing, and to the extent possible private resources should substitute for scarce public funding.

**Mobilizing domestic resources will require minimum standards for domestic resource mobilization (e.g. 20 percent of GNI for developing countries and 17-18 percent for low-income countries) as well as improved regulation and transparency to reduce illicit financial flows.** In particular, FSD should call for transparent beneficial company ownership in all countries; a reform of international tax rules to curb abusive transfer pricing – particularly out of developing countries; automatic exchange of information among tax authorities without full reciprocity from low-income countries that lack the institutional means to comply; and transparent financial reporting by companies.

**Greater volumes of Official Development Assistance (ODA) are needed with better reporting.** All high-income countries should commit to giving 0.7 percent of GNI in ODA. They should also commit to halving the gap between current ODA levels and the 0.7 percent target by [2020] and announce a timeline for meeting the target by [2025]. Upper-middle-income countries should prepare to become donors and to commit [0.1] percent of GNI in development aid. Aid reporting must be overhauled to increase transparency on global aid flows and to provide a more open and transparent forum, building on, but extending beyond the OECD/DAC.

**Scarce ODA needs to be directed towards the greatest needs.** The report proposes that ODA grants be made only to countries that are unable to tap non-concessional lending, i.e. countries eligible for the International Development Association (IDA). At least 50 percent of ODA should go towards Least Developed Countries (LDCs). Additionally, significant volumes of ODA will target global public goods.

Upper-middle-income and non-IDA lower-middle-income countries remain eligible for technical assistance.

**Innovative financing mechanisms and private philanthropy can make an important contribution towards FSD.** To ensure the most effective use of resources, proceeds from innovative financing mechanisms should be channeled through existing pooled financing mechanisms. Similarly private donors should be encouraged to provide funding through existing mechanisms.

**Developed countries need to honor their commitment to mobilize \$100 billion in climate finance.** Climate finance could be mobilized through an assessment-based formula that takes into account countries' ability to pay (e.g. through per capita GNI) and their per capita greenhouse gas emissions.

**At \$22 trillion per year the world has adequate saving to finance the private investments in the SDGs, but to date private financing directed towards sustainable development remains vastly insufficient.** Mobilizing increased investments in the SDGs will require improved national policy frameworks that support long-term investments and correct market failures, e.g. through carbon pricing and public-private partnerships. Likewise, international rules and standards, including for trade, intellectual property rights, banking and insurance regulation, accounting standards, etc. must be made consistent with the objective of achieving the SDGs. Greater consistency can be achieved through 'coherence checks' that determine whether existing rules are consistent with achieving all the SDGs and – if not – how they might need to be amended.

**Today's capital markets do not 'price in' climate change and they do not raise the volumes of long-term capital that are required for public-private investment partnerships in the SDGs.** By failing to correct the assessment of future revenue flows for unsustainable activities (such as exploration for unconventional oil), capital markets misallocate capital towards investments and activities that work against sustainable development. FSD should therefore promote (i) integrated financial regulation to integrate sustainable development into the mandates of supervisory agencies, listing rules, and financial stability; and (ii) integrated reporting by companies, investment consultants, and asset owners on how they have included sustainable development into their financial reporting and investment decisions.

**FSD must be forward looking to ensure that its public-private financing framework may last through to 2030 when the SDGs are set to expire.** In order to remain relevant over time, such a framework must anticipate the changes that will occur to the world economy. In particular, this will require a strong focus on the growing importance of private finance as well as clear eligibility and graduation criteria for ODA and climate finance that ensure effective use of scarce public resources and commit all high-income and upper-middle-income countries to help mobilize the needed resources.

**All countries and actors will need to contribute to FSD to meet the SDGs and achieve the climate objectives to be agreed under the UNFCCC. This will require compromise and concessions from all parties.** Taken on their own some of the proposals in this report will prove unpopular with particular groups of countries or actors. Yet they form part of an overall financing framework for sustainable development that is balanced and will require bold commitments from high-income countries, middle-income countries, low-income countries, the private sector, and multilateral and donor agencies.

**In conclusion, here is a preliminary list of ten commitments that could be made at FSD 2015:**

1. **Adopt indicative financing needs – public and private – and estimates of international finance needs** (ODA & climate finance), for example as outlined tentatively in the report and by many authoritative UN estimates. Commit to improving the needs assessment to guide the implementation of FSD by filling gaps and incorporating lessons from implementations. Reaffirm the importance of ODA and concessional climate finance for meeting these objectives in low-income countries and for global public goods – since such funds are hardest to raise and will leverage tremendous private resources.
2. **Adopt clear standards for domestic resource mobilization** that respond to countries' needs and ability to raise resources. For example, all developing countries should aim to mobilize at least [20 percent] of GNI in domestic revenues towards meeting the SDGs with a lower threshold of [17-18 percent] for low-income countries.
3. **Reform international regulation and ensure transparency to support domestic resource mobilization**, by adopting the following principles and ensuring their enforcement:
  - **Transparent beneficial company ownership in all countries;**
  - **Fair transfer pricing regimes and taxation of multinational companies;**
  - **Automatic exchange of information among tax authorities and taxation of offshore assets;**
  - **Publish what you pay;**
  - **Open government data; and**
  - **Periodic review of key international rules and standards for consistency with achieving the SDGs.**
4. **Anchor the central role of pooled financing mechanisms in building goal-based public-private investment partnerships**, particularly in health, education, agriculture and nutrition, biodiversity and ecosystem services, energy access, water and sanitation, data for development, and climate finance.<sup>3</sup>
  - **For each partnership one or more priority pooled financing mechanisms should be identified or established**, and all donors (including private philanthropy) should be advised to contribute to them. Other non-essential mechanisms should be scaled back to reduce aid fragmentation.
  - **The pooled financing mechanisms should coordinate and publish robust needs assessments and long-term schedules for replenishment rounds** to ensure that their donors can prepare long-term resource mobilization strategies.
5. **Promote long-term investments in infrastructure around:**
  - **National Public Investment Systems and Infrastructure Project Preparation Facilities** to support the development of early-stage projects.
  - **Effective global, regional, and national subsidy and investment risk-mitigation mechanisms**, including a strengthened and expanded MIGA.
  - **Review of financial and insurance standards (Basel III and Solvency II) to promote long-term investments**, including through annual reports on whether global rules are

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<sup>3</sup> As described in this text, an increased role for pooled financing mechanisms will complement bilateral aid programs. Not all areas require or are suitable to pooled financing mechanisms (e.g. infrastructure, governance, capacity development, technical assistance).

- consistent with countries achieving the SDGs and long-term climate objectives agreed under the UNFCCC.
- **Harmonized infrastructure investment platforms and an effective secondary market**, to facilitate direct infrastructure investments from institutional investors.
  - **Deeper local saving pools and banking systems** to mobilize domestic financing for local infrastructure investments.
6. **Ensure that capital markets can provide long-term finance for infrastructure and other sustainable development finance needs.** Inter alia FSD may resolve to:
- **Make integrated reporting from companies and asset managers a global standard.**
  - **Address excessive short-termism in capital markets**, for example through appropriate regulations on incentive pay (e.g. bonuses).
7. **Adopt clear standards and targets for additional ODA and transparent monitoring.** In this report we propose the following minimum standards:
- **All high-income countries that are members of the OECD DAC** recommit to increasing their ODA to 0.7 percent of GNI. By [2020] each donor country should at least halve the gap to 0.7 percent of GNI and reach the target by [2025].
  - **All non-DAC high-income countries** should commit to the same quantitative objectives as the DAC members, including halving the gap by [2020] and reaching the full target no later than [2025].
  - **Upper-middle-income countries** will soon become high-income countries and should therefore commit at least [0.1] percent of GNI in development assistance.
  - **All aid from DAC and non-DAC donors should be subject to rigorous standards of transparency** and public accountability. To ensure transparency aid should be reported by donors and recipients alike, perhaps through a **new Multilateral Donor Reporting Mechanism adopted at FSD.**
8. **Agree to transparent eligibility criteria for ODA and other public international flows.** We tentatively propose the following standards:
- **ODA should be focused on low-income and other IDA-eligible countries. At least 50 percent of ODA should go towards the Least Developed Countries (LDCs).**
  - **Non-IDA lower-middle-income countries will be eligible for development-bank loans and technical assistance, but should not receive any grant assistance or concessional loans (i.e. ODA).** To avoid abrupt disturbances to public finances, aid to these countries should be phased out gradually once they graduate from IDA (Annex 2). The rule should be applied flexibly to support lower-middle-income countries in special situations (e.g. countries experiencing major natural disasters or conflict). Specific priority challenges (e.g. high infectious disease burden) should also qualify for targeted ODA.
  - **Upper-middle-income countries should gradually become donors themselves.** In the interim, they may be eligible for technical assistance.
9. **Adopt the principle of assessed contributions for climate finance** and specify an assessment formula, perhaps along the lines of the suggestion in the report. The basic principle should be that polluters pay, e.g. national assessments should be based on GHG emissions, graded by national income level.

10. **Launch Public-Private Partnerships for key sustainable development technologies to prepare technology roadmaps and promote technology development.** A focus should be on describing how technologies can be developed and deployed with particular attention to facilitating and financing diffusion to all developing countries technologies.

**Success in financing sustainable development will not come alone from a successful FSD agreement. It will also require leadership in the run-up to and after the Addis conference from individuals, businesses, civil society organizations, and of course governments.** For example, one or more governments can strengthen existing or launch new multilateral pooled financing mechanisms. International organizations can propose bold changes to international rules to make them consistent with achieving the SDGs. Major philanthropists can support R&D, advocacy, metrics or other critical components of goal-based, public-private investment partnerships. We hope this report provide tangible ideas for such bold commitments that can help build the momentum towards the successful conclusion of a historic year 2015.

## **1 Motivation, organization, and limitations of this report**

This report examines some of the questions involved in designing new institutions to handle the long-term complex investments needed for health, education, sustainable agriculture, sustainable infrastructure, and other key sustainable development priorities. It builds on and complements the reports from the Intergovernmental Committee of Experts on Sustainable Development Financing (ICESDF, UN 2014), the World Bank<sup>4</sup> (2013a), and many others cited in this report. In particular, the report seeks to add the following to the ongoing debate on Financing for Development:

- An in-depth discussion of key policy issues that need to be considered by FSD. The report is extensively referenced to guide the interested reader to additional background documentation.
- An assessment of public private investment needs across key SDG investment areas.
- An analysis of how successful public-private investment partnerships have worked in health and lessons might be applied to other areas, such as education, agriculture, water and sanitation, ecosystems and biodiversity, a data revolution for the SDGs, or infrastructure.
- Practical proposals for action that could be promoted by member states in the run-up to the Addis conference. If adopted these actions can help build momentum towards a successful FSD Conference, SDG Summit, and climate conference.
- Policy options that can be considered for adoption at the FSD conference. The report takes a fairly comprehensive view at the FSD agenda and identifies a preliminary set of ten recommendations for consideration by member states.

We hope that this report will make a useful contribution to the intergovernmental discussions on financing for development that are chaired by the Permanent Representatives of the Republic of Guyana and Norway to the United Nations. The preparatory process for the July 2015 conference will comprise expert consultations in late 2014 and three drafting sessions in January, April, and June 2015.<sup>5</sup>

The report is structured into two seven sections. Following this brief introduction, section 2 discusses the transition from the Millennium Development Goals (MDGs) to the Sustainable Development Goals (SDGs). It explores the critical importance of financing in supporting global efforts to promote sustainable development, including the end of extreme poverty in all its forms and addressing dangerous climate change. Section 3 reviews the respective and complementary roles of public and private investments in meeting social objectives and summarizes available information on financing needs, which are discussed further in Annex 1.

In Section 4 we turn to a case study of the highly successful investment campaigns of the MDG period in public health, notably in reducing morbidity and mortality from TB, malaria, and HIV/AIDS, as well as improving child survival and maternal health. The experience from public health shows how global goals and new institutions – like the GFATM and GAVI – can foster complex public-private investments at the

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<sup>4</sup> For simplicity we use the term ‘World Bank’ to denote the World Bank Group throughout this report.

<sup>5</sup> The process has been summarized by the co-chairs at [http://www.un.org/pga/wp-content/uploads/sites/3/2014/10/131014\\_financing-development.pdf](http://www.un.org/pga/wp-content/uploads/sites/3/2014/10/131014_financing-development.pdf)

national and local level. Section 4.3 outlines a general framework for translating global goals into sustainable investment programs at local, national, and regional levels, including the central role of pooled public finance mechanisms.

In section 5 we then apply the general framework for goal-based partnerships to specific SDGs priorities: health, education, agriculture and food security, biodiversity and ecosystems, water and sanitation, the data revolution, climate finance and access to modern energy sources, large-scale infrastructure, and public-private partnerships for technologies. We focus on major opportunities for strengthening existing partnerships, including more effective financing.

Section 6 explores how adequate public and private financing can be mobilized for the SDGs. The section discusses domestic resource mobilization as well as improved international tax regulation and transparency. We propose eligibility criteria for aid, explore opportunities for deepening the pool of available high-quality Official Development Assistance (ODA), other concessional development finance, and climate finance, and review the need for improved reporting on aid. The section also explores how private resources can be mobilized for the public-private investment partnerships reviewed in the previous section. We briefly review key policy implications and the role of capital markets in financing sustainable development.

Section 7 explores the political economy of aid and climate finance and outlines opportunities for action in the run-up to the Addis conference. We close with ten very preliminary recommendations for the 2015 FSD Summit.

The scope of this report is limited to complex investment programs in several key areas that require substantial international flows of international investment, both public and private. We do not aim to discuss all thematic initiatives or partnerships in a given area. While recognizing that high-income countries will need to significantly increase domestic investments for sustainable development, our discussion focuses on the financing needs of low-income and middle-income countries. Later versions of this report may address some or all of these limitations.

This report does not explore how countries and other stakeholders might report on the SDGs or how intergovernmental arrangements to review progress towards all SDGs might be organized on an annual basis. Some of these important issues are addressed in SDSN (2014).

## **2 The importance and scope of Financing Sustainable Development in 2015**

Three summits in 2015 will set the stage for international cooperation over the coming decades. In July 2015, governments will convene for the Third Conference on Financing for Development Addis Ababa. Two months later, in September 2015, they are scheduled to adopt a new set of Sustainable Development Goals (SDGs) at the United Nations in New York. Finally, in December 2015, the 21<sup>st</sup> Conference of the Parties (COP21) of the UN Framework Convention on Climate Change (UNFCCC) is expected to adopt a binding agreement on the long-term reduction of greenhouse gas emissions.

The three summits will rise or fall together. Without financing there can be no credible agreement on the SDGs or climate change. Without the SDGs, there can be no guidance on how to design a financing framework for sustainable development. Without a successful climate summit, the hope to end poverty will be lost. In this sense, next year's three summits will forge the sustainable development future of the planet, successful or not. Scaled investments in sustainable programs and technologies (for energy, health, education, urban infrastructure, biodiversity, water and sanitation, and other SDG priorities) will be the key to success. Financing those sustainable investments is therefore central to global aims.

This report focuses on the broad agenda to be covered by the Third Conference on Financing for Development. This agenda must build on and expand the landmark Monterrey Consensus (UN 2002) to address three related changes in moving from the MDGs to the SDGs:

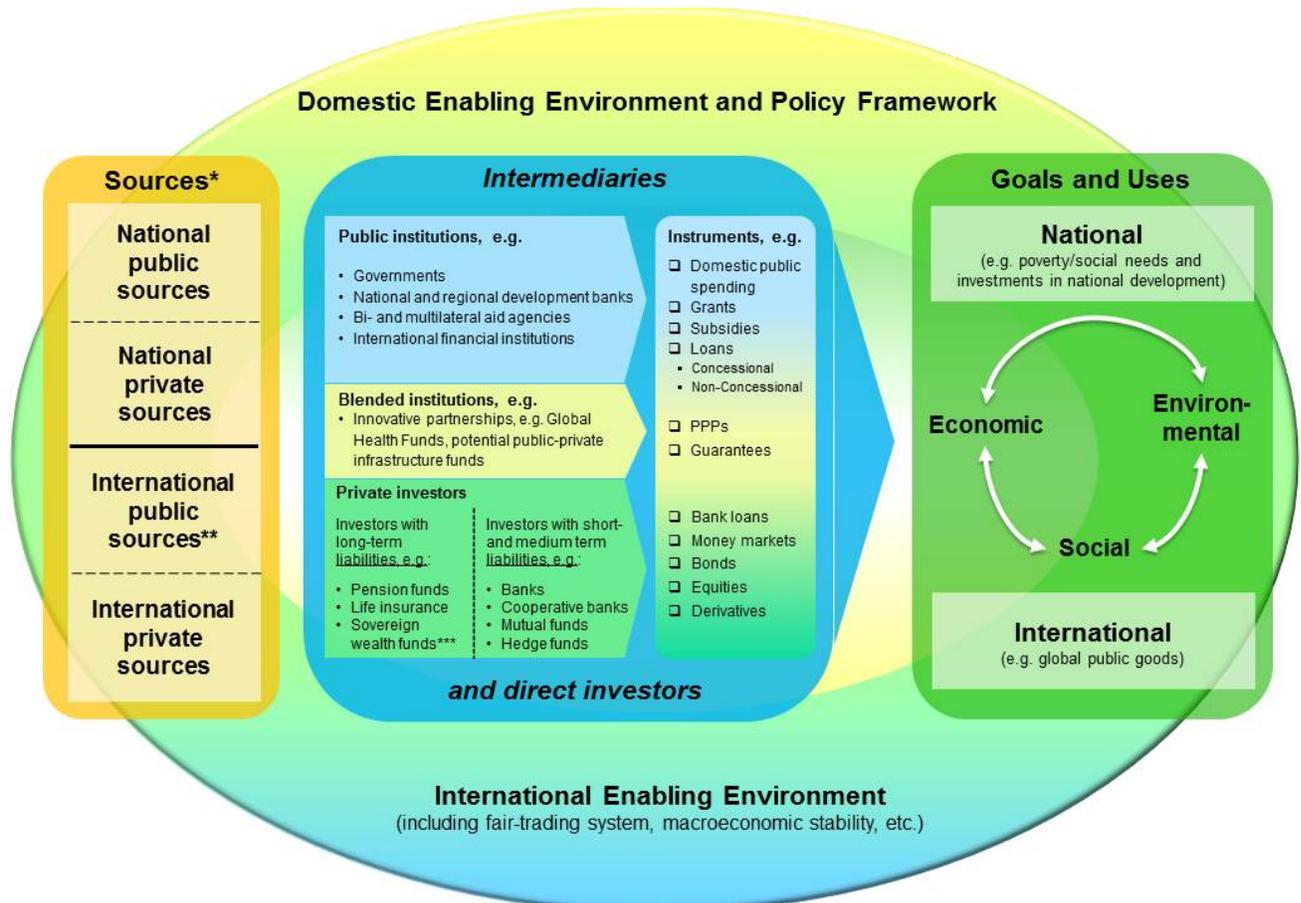
1. A much broader development agenda that retains a sharp focus on ending extreme poverty in all its forms by finishing the job of the MDGs, but also includes a broader social and environmental agenda, including the provision and protection of global public goods.
2. A universal agenda that covers the needs of all low-, middle-, and high-income countries.
3. A changed development finance landscape that includes a much broader range of public and private actors than in 2002 and will need to mobilize a much greater share of private finance.

In their letter to Permanent Representatives and Permanent Observers to the United Nations from 13 October 2014, the two co-chairs propose the operative title Financing Sustainable Development (FSD). This term underscores the necessary broadening of the Financing for Development agenda, so we adopt it as the operative framework for this report.

Clearly, the implementation of the SDGs and climate goals must be bottom up, based on investments made by local communities, sub-national divisions (states and provinces), nations, and regions. The global financial architecture must also direct new and additional resources to priority areas identified by all parts of society: government, business, and civil society. The fundamental aim of FSD is to create a framework in which long-term saving flows reliably to high-priority, long-term, sustainable investments.

The ICESDF has captured this investment challenge in its framework graph (Figure 1). Public and private financing from domestic and international sources must be organized and intermediated in order to flow towards sustainable development objectives. Domestic and international policies provide the enabling environment for public and private investments.

Figure 1: Flows of funds from international and national financing sources to sustainable development



Notes: \* The size of boxes does not represent financing volumes/importance.  
 \*\* There can be cases where international public finance also directly supports the implementation of international objectives.  
 \*\*\* Sovereign wealth funds handle public money, but are managed like private investors

Source: UN (2014)

The needed investments are necessarily complex and vary from one area to the next. The energy, health, education, infrastructure, and other systems all involve a complex mix of public and private actions, agencies, investments, and responsibilities. Indeed, sorting out these respective roles is perhaps the key to success. The financial resources exist for sustainable development; the systems to design and implement the needed mix of investments at local, national, regional, and global levels do not exist in most places, at least not yet.

Success will require effective multi-stakeholder public-private partnerships as suggested by the High-Level Panel on the Post-2015 Development Agenda (HLP 2013) and Bill Gates (2011). Markets alone cannot do the job. If they could, we would not need the SDGs. On the other hand, state actors or civil society cannot succeed if business is not engaged at a large scale in research and development (R&D), adoption of improved technologies, and large-scale provision of sustainable goods and services to the world economy. We are in complex territory, where problem solving inevitably cuts across public and private actors, as well as across many sectors of the economy.

In short, it is best to think of meeting the SDGs and tackling climate change as complex long-term investment problems, where investments of all kinds will be needed: infrastructure, R&D, private business, human capital (health, training and skills), and consumer goods of the right kind (e.g. energy efficient cars, buildings, appliances). The goal is to redirect production and consumption to a sustainable path, one that ends poverty, brings more people to prosperity, and reduces substantially the environmental impact of economic activity. Fortunately, the MDGs have generated important lessons and success stories that were unavailable when the Monterrey Consensus was framed. This report describes these lessons to identify critical design parameters for public-private investment partnerships around the SDGs.

Additional and better-targeted financial resources are urgently needed, but they will of course not resolve all sustainable development challenges. Incremental funding that is not supported by sound policies or effective delivery systems may be wasted. Moreover, some SDG challenges require primarily changes to policies without the need for substantial investment programs. Examples include violence, particularly against women and young girls; gender equality, and labor rights.

While achieving the SDGs in high-income countries will require substantial incremental investments in some areas, such as reducing greenhouse gas emissions and sustainable infrastructure, public and private spending in most other areas is adequate to achieve the goals. Here policy changes are needed to improve the efficiency of domestic spending and to redirect it where necessary towards the economic, social, and environmental objectives of the sustainable development agenda. The challenges of mobilizing incremental resources for high-income countries and of directing policies towards the SDGs are important and complex, but it is less clear how the FSD conference can guide them or provide international standards.

Since the SDGs and the climate objectives represent a complex long-term pattern of investment, they will require a suitable pattern of financing. This was true of the MDGs and will be true of the SDGs as well. Just as the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) and the Global Alliance for Vaccines and Immunizations (GAVI) had to be invented – and funded – in order to tackle child mortality and take on MDG 6 (the fight against major epidemic diseases), new financing strategies both public and private will be needed to achieve the SDGs and meet the climate goals.

These financing strategies will aim to direct large-scale resources, in this case perhaps [\$2-3 trillion] per year of incremental private and public saving, towards new investment programs directed at the critical sustainable development challenges. Most of these funds will flow through private intermediaries rather than governments and official institutions. Still they will have to be directed and mobilized with supportive public policies, including market signals and regulations. The incremental investment needs are high, but actually quite manageable. They constitute roughly [2-3 percent] of global GDP, [9-14 percent] of the roughly \$22 trillion in global annual saving, or [0.9-1.4 percent] of the stock of global financial assets, which has been recently estimated at \$218 trillion (UN 2014).

To some extent, private markets will direct private investments as they always do: based on financial intermediaries (e.g. banks or funds) and direct investors (e.g. corporations deploying retained earnings or individuals) directing funds towards areas of high potential profitability. Policies must ensure that markets send the right signals. That is why, for example, carbon pricing is so important in order to shift investments towards low-carbon energy. Yet the challenge of mobilizing investment for sustainable development is much broader and more complicated than simply 'correcting' market prices to account for externalities like the social cost of greenhouse gas emissions or the social cost of water pollution.

Issues, such as meeting the needs of the poorest of the poor, RDD&D for new technologies, land use, liability management for social and environmental risks (e.g. regarding carbon capture and storage), peace and security, protection of biodiversity, protecting the global oceans commons, infrastructure against natural hazards, and countless other areas all require public actions that extend far beyond corrective pricing.

The FSD agenda must weave these complex pieces together into a compelling narrative and a limited number of practical decisions. As we argue in this report, the 2015 Addis Consensus must update and broaden the Monterrey Consensus to cover the financing needs of the SDGs as well as the climate agenda. This report aims to present the evidence on which informed decisions can be taken by member states in Addis. We hope that the recommendations in the concluding sections will be helpful in crafting the FSD decisions that the world needs to adopt next July.

### **3 Private and public financing needs for the SDGs**

Meeting broad social objectives – such as fighting poverty, mitigating climate change, educating young people, combatting epidemic diseases – requires the sustained mobilization of large-scale public and private resources. A sound financing framework for the SDGs must rest on a clear understanding of the complementary roles of public and private finance, and how the two can work in tandem to achieve complex social objectives over the long term. Such a framework also requires a clear sense of the financing needs – both public and private – and the extent to which they can be mobilized domestically, including through household contributions.

Adequate financing will not guarantee achievement of the SDGs, but without sufficient financing the goals cannot be met. We therefore stress that organizing effective public-private partnerships and ensuring an effective policy environment for the delivering the investments in the SDGs are vital for success. Following a discussion of the financing needs for the SDGs in this section, the next two sections will focus on how increased financing can be deployed for goal-based investment strategies.

#### **3.1 *The complementary roles of public and private finance***<sup>6</sup>

Financing can come in the form of private commercial funding that seeks a market-rate return or as non-commercial funding from governments and private donors who are willing to accept no or below-market rates of return.<sup>7</sup> The fundamental distinction between ‘private’ (commercial) and ‘public’ (non-commercial) funding and opportunities for blending public and private finance are at the center of any viable post-2015 framework for development and climate finance.

Private commercial finance can support investments in private assets, such as factories and machineries, provided they generate a financial return for their owner that is superior to the risk-adjusted cost of capital. Private investors respond to private returns, not to social returns. Therefore, when price signals do not reflect social costs and benefits (e.g. because of negative or positive spillovers), private incentives will not align with public incentives. Corrective pricing (e.g. a carbon tax in line with the social cost of carbon) is therefore both necessary and effective in many cases to spur the requisite private investments.

Markets do not effectively respond to the needs of the poor. Helping the poor to meet basic needs (such as health, education, safe water and sanitation, and food security) is not simply a matter of correcting prices. The poor lack purchasing power. Various approaches to recover costs for services to the poor have failed relentlessly over the past quarter century (section 3.3). Usually the poor are simply unable to pay for these costs, and end up being excluded from basic goods and services. The poor very often need public financing rather than private financing to meet their basic needs.

Poor individuals and poor governments also lack creditworthiness. Even if a poor person has the opportunity for a high-return investment (e.g. in education or improved nutrition or job training) the private capital markets will typically not provide that financing. Financing for the poor typically requires collateral or sky-high interest rates. Group lending and other initiatives of microfinance have partially

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<sup>6</sup> This Section has been adapted from Sachs and Schmidt-Traub (2013)

<sup>7</sup> Throughout this report we include grants from private actors (individuals, foundations, corporations) that do not seek a market return under ‘public’ finance. Similarly, all for-profit finance is termed ‘public finance’ even if it is provided by publicly owned entities, such as state-owned enterprises.

relieved the situation for some kinds of loans (e.g. working capital for small-scale businesses) but not for other vital needs, such as health, education, infrastructure, agricultural financing, and more.

The same is true for governments in low-income countries. They may recognize the vital need and high return of investments in water systems, public health, education, or infrastructure, but banks and bond markets are not able to provide adequate capital. Since the enforcement of sovereign lending is difficult in any event, capital markets are reluctant to invest in poor countries that might later resort to defaults or be pushed by events into insolvency. Granted, private lending and investments in low-income countries has increased significantly in recent years. Yet, this increase comes from an extremely low base, and overall volumes remain vastly insufficient for meeting the SDGs in most low-income countries. The result is both inefficient and inequitable: countries remain trapped in poverty even though the public investments needed to escape from poverty are in plain view and the world is awash in liquidity and capital seeking a good return.

In general terms, public investment covers areas where private, for-profit financing is intrinsically insufficient or impossible:

**Helping the poor to meet basic needs:** Most social services, including health care, early childhood development (e.g. safe childcare and pre-school), education, and job training, are considered ‘merit goods’, meaning that they should be available to all members of society, rich and poor alike. These merit goods are typically described as ‘human rights’, or ‘basic human needs.’ They will be at the center of many SDGs and are enshrined in the Universal Declaration of Human Rights. To ensure that merit goods are available to all, including the very poor, public financing is essential. For poor countries, ODA is needed to complement domestic resource mobilization so that national budgets can finance the necessary basic level of social services (section 6).

**Networked infrastructure:** Many types of network infrastructure (rail, roads, pipelines, power distribution) are natural monopolies or allow for only very limited competition.<sup>8</sup> In such cases the government is typically the direct provider of the infrastructure or must at least regulate a private provider in order to restrain market power. Since infrastructure is vital for economic development, governments in poor countries will need international support in order to be able to carry out the needed public investments in infrastructure.

**Post-conflict assistance and peace-building:** International assistance for peacekeeping, peace-building, post-conflict humanitarian aid, and post-conflict development, is needed because of the inherent weakness of national and local governments and civil-society organizations in post-conflict conditions. Post-conflict assistance and peace-building are important public goods since stability benefits everyone in a country as well as neighboring countries and the world at large.

**Climate change mitigation and adaptation:** In all countries, public investments will be required for climate change adaptation such as protection against rising sea levels and increasing storm intensity. Poor countries will also need international financing to respond to extreme climate events. Such financing might be considered ‘compensation’ for losses incurred by poor countries caused by the greenhouse gas emissions of richer countries and should therefore be financed through climate finance

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<sup>8</sup> Other infrastructure services, such as access to basic energy services or water supply, constitute merit goods discussed above.

under the framework of the UNFCCC. Governments of low-income countries have also been promised financial help to bear the incremental costs of low-carbon energy and other mitigation efforts.

**Biodiversity conservation and ecosystem services:** The preservation of biodiversity and ecosystem services constitutes local, regional, and global public goods, and as such requires a combination of regulation, market-based incentives (taxes and subsidies), and public investments in infrastructure and conservation. This applies to terrestrial biodiversity and ecosystems (forests, savannahs, wetlands, freshwater ecosystems) as well as marine and coastal biodiversity and ecosystems. In particular global public goods, such as the world’s oceans, the Arctic and Antarctic, or major terrestrial biomes, require targets public-private policy frameworks and investments.

**Promoting innovations in sustainable technologies:** As a general matter, governments play a large role in the innovation process because scientific knowledge and technical knowhow are public goods. If all knowledge is fully privatized (such as through patents), there will be an under-use of knowledge. By co-financing research, development, demonstration and diffusion (RDD&D) of new technologies alongside business, governments spur economic progress and find solutions to challenges such as human-induced climate change. It is notable that most of the technological advances of recent decades – including space science, semiconductors, computer science, genomics, molecular biology, nanotechnology, the Internet, and more – were strongly backed by governments in the early stages of their development (section 5.10).<sup>9</sup>

### **3.2 The special role of public-private partnerships (PPPs)**

In almost all areas just mentioned, business will play a direct and indeed often dominant role in delivery and implementation. Businesses will deliver most investments in infrastructure and can sometimes play an important role in improving social service delivery. They can leverage public financing (see UN 2010 for common leverage ratios). Private companies are also major sources of R&D, early-stage technology deployment, large-scale production systems, and often the best practices for technology diffusion to low-income settings. Note, though, that in some areas, such as health, education, biodiversity protection, business’ role is typically backed by public funds and public regulation. In other areas, such as infrastructure, private financing will probably account for the much or most of the needed financing.

Today’s markets do not provide adequate incentives for private businesses to contribute towards sustainable development. The key is to combine public financing, regulation, and private market participation into an effective public-private partnership (PPP). Such PPPs can come in a variety of forms:

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<sup>9</sup> In technical economic terms, basic science and technological knowhow are ‘knowledge goods’, which have the property of being ‘non-rival.’ Non-rival goods are those that can be used by one person without diminishing their accessibility to others. For-profit markets underprovide knowledge goods: Either these goods are made freely available (such as with basic scientific knowledge) and therefore do not generate a return for private inventors, or they are held by temporary monopolists protected by patents, which in turn restricts their adoption and diffusion. Either way, the development and diffusion of technology is less than optimal, and the poor may be hurt the most. As a result, public (co-)financing is needed to help generate and diffuse new technologies. This will be especially important for sustainable development, since deep and rapid technological change will be the hallmark of success in achieving a sustainable-development trajectory. Global public financing will be needed to promote research and development, pilot new technologies, and promote their rapid diffusion to low-income countries.

- **Private provision on public contract:** Business may be the supplier on a publicly financed contract. This can be for R&D, early-stage technology development, or deployment of infrastructure. Many key technologies, such as the early semiconductor industry, have developed on the basis of government procurement (section 5.10).
- **Market price corrections:** A variety of tax and subsidy corrections exist to provide incentives for business in line with social costs and benefits. Examples include tax credits for investments in new (risky) technologies, feed-in tariffs for renewable energy, carbon pricing, and investment and export guarantees to high-risk countries.
- **Differential pricing by business:** Business may provide discounts or free supplies for products and services to low-income settings against a promise from governments to maintain (higher) patent-protected pricing in all other markets. An important example for differential pricing is the marketing of essential medicines in developing countries, which has made a tremendous contribution to the fight against many infectious diseases, including HIV/AIDS.
- **Global fund mechanisms:** The GFATM and the GAVI are examples of public-private partnerships organized around health delivery with public financing that can in turn mobilize a significant share of private co-financing.
- **Technology consortia:** The public sector may sponsor a consortium of private and public entities to carry out R&D and pre-commercial trials for new technologies (section 5.10).
- **Market maker:** Publicly (co-)financed institutions may aggregate diffuse demand across a large number of countries and provide long-term visibility to suppliers to support the creation of markets that are financially viable, but too complex to establish for private actors alone.<sup>10</sup>

PPPs offer great promise for sustainable development, but they can be extremely complex to design. Among the myriad of challenges that must be tackled in designing effective PPPs are:

- **Cost-effectiveness:** In many instances, private companies have proven to be more efficient and cost effective in delivering investments than public entities, but this is not always the case. In particular, networked infrastructure and other ‘natural monopolies’ can give rise to predatory pricing by private entities, which reduce the attractiveness of PPPs. Similarly, the US system of private provision of healthcare based on public funds has led to extraordinarily high unit costs of US health care.
- **Efficient scale of investment:** Only public (co-)financing can ensure an efficient scale of public goods provision. The more a PPP requires private entities to provide co-financing for capital or operating expenditure, the bigger the risk that the overall level of investment will be too low or that the outcomes be misaligned with the social objectives (e.g. to provide healthcare services to the poor). Achieving the efficient level of overall investment without squandering scarce public resources requires highly sophisticated service contracts, a careful calibration of incentives, and clear public goals.

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<sup>10</sup> A powerful example for market making is the global vaccine market, as discussed in Section 4.2.

- **Equity in financing and service delivery:** Private companies maximize profits and therefore have an incentive to reduce the level of service or infrastructure provision to ‘loss-making’ customers. For example, private utilities may generate financial losses on poor or remote customers. Unless effectively regulated, PPPs can reduce equity in financing and service delivery compared with public provision.
- **Competition and non-capture by incumbent companies:** Many PPPs give rise to natural monopolies, so PPP design must ensure effective competition in the awarding of contracts and proper regulation and price controls in the management of the PPP. These natural monopolies invite collusion between the private providers and the public regulators, so-called ‘capture’ of the regulators.
- **Transparency and non-corruption:** In general, PPPs must be transparent and include sophisticated safeguards to minimize the risk of corruption by public officials as well as private employees and to ensure minimum social and environmental safeguards. Such safeguards are hard to enforce in general, especially in places with weak governance.

This list underscores the ‘principal agent’ problems that PPPs can generate and the complexity that effective design, monitoring and policing may require. Particularly in the poorest countries public institutions may not be strong enough to design and implement effective PPPs. Consequently, the transaction costs of PPPs and the ability of a country to manage PPPs must be carefully weighed against the benefits they are intended to generate.

### **3.3 The limited role of household contributions and remittances**

In poor countries, household contributions to financing the SDGs are very limited. This is simply a reflection of household poverty. In health and education, the experience is strong that user fees dramatically discourage access to health and education, particularly for girls and women, and that they mobilize very limited additional financial resources. As a result, a clear global consensus has emerged that basic education and universal health coverage (UHC) should be free of charge to users. The evidence on health is presented by Moreno-Serra and Smith (2012), Savedoff (2012), Yates (2009), Jamison et al. (2013), and Agyepong et al. (2014). For evidence in the education sector see Bentaouet (2006), Chavan et al. (2014), Greenhill and Ali (2013), and UNESCO (2013a).

Infrastructure gives rise to similar issues of access for the poor. On the one hand, utility companies (e.g. for power and water) need to cover their costs. Yet, uniform pricing for all customers would again exclude the poor, just as with healthcare. One common approach, therefore, is a subsidy that is applied to all customers. The problem however is that middle-income and high-income consumers end up receiving the lion’s share of an across-the-board subsidy, even though such a subsidy is ostensibly for the poor. A preferable approach is called a ‘lifeline tariff.’ A lifeline tariff provides free or highly subsidized access for a good or service (e.g. water or power) up to a given quantity that is deemed to be the ‘basic need.’ Above that level, consumers must pay the full cost of the services. Indeed, the cost of providing the lifeline tariff can be included in the full price paid by the larger (and richer) buyers of the service.

Another case for a lifeline tariff is in smallholder agriculture. In many parts of the world smallholder farmers require subsidized access to basic infrastructure services (e.g. electricity for irrigation) and farm inputs such as seeds and fertilizer. These core inputs can be provided for free or at very low cost, but

only up to a given quantity. Beyond that quantity, farmers pay the full cost for further infrastructure services and farm inputs.

Remittances are private flows of financing, usually within families, which support household investments (e.g. in small enterprises, housing) and other expenditures of poor households (e.g. payment for food, school fees, or medical expenses). They can be an important income source for poor households, but they neither finance public goods, nor transfer incomes from rich households to poor households. Increasing the ability of the poor to earn income by working in richer countries is double edged. It might provide more income for poor families on a market basis, but it can contribute to brain drain and a tragic loss of family cohesion as well, as children grow up without the presence of one or both parents. For these reasons, remittances should never be confused with ODA or with public financing more generally. Remittances are unlikely to make a significant contribution towards the financing the sustainable investments reviewed in this report.

Remittances should also not be confused with diaspora bonds or funds that mobilize private diaspora savings for bond-financed public projects. Globally diaspora funds are estimated at \$400 billion (Ratha and Mohapatra 2011). Such funds may harness patriotism in the interest of development finance, and in a few countries they can contribute significantly to financing sustainable development. For example, India and Israel have successfully mobilized several tens of \$ billion over the last decades in diaspora bonds (Ketkar and Ratha 2010). Yet one needs to be careful before extrapolating from these two examples of a middle and high-income country to the opportunities for lower-income economies. Diaspora bonds have a role to play, but for most poor countries their contribution will be modest in scale and limited to investments that offer commercial or near-commercial rates of return.

### **3.4 Domestic vs. international public finance and the continued need for some ODA**

Private finance can be sourced domestically or internationally, and so too can public spending, which may come from domestic sources (such as income taxes, indirect taxes, customs revenues, state-enterprise profits) as well as international sources (as ODA, climate finance, public loans, or Other Official Flows (OOF))<sup>11</sup>. As agreed in the Monterrey Consensus (UN 2002) and the Busan Partnership for Effective Development Cooperation (2011), each country has primary responsibility for its development and development finance. Concessional international public finance should only be mobilized in areas where domestic public resources are insufficient, and business is unable to mobilize adequate private finance.

The substantial rise in per-capita incomes in most developing countries since 2000 has significantly increased domestic resource mobilization, but most developing countries can do more (section 6.1). Yet ODA remains vital for most low-income countries, particularly in sub-Saharan Africa.

Gates (2011) explains eloquently why ODA will be needed for the foreseeable future to sustain live-saving investments in low-income countries and to finance global public goods. The African Economic Outlook 2010 (AfDB et al. 2010) shows that aid exceeds tax revenues in twelve African countries and is larger or equal to half the tax revenues in 24 countries. The Outlook concludes if aid “were to disappear, several states would simply collapse.” The Committee on Development Finance cites data from

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<sup>11</sup> In this report we use the term ODA to denote all concessional international public finance flows, including ODA from members of the OECD DAC, aid from other high-income countries, as well as concessional South-South cooperation.

Development Initiatives (2013) showing that, in most countries with government spending of less than \$500 PPP per person, ODA accounts for more than two thirds of international resource flows, and about one third of government revenues. Even if ODA and public climate finance make up a modest share of overall development finance globally, they play a vital role in some of the poorest countries – particularly for financing essential public services and for leveraging the much larger volumes of private finance. Yet they are hard to mobilize and to disburse efficiently. This report therefore places particular emphasis on public international finance as an enabler of private finance.

The case for ODA rests mainly on closing financing gaps for the poor. A very clear example is public health. A rudimentary primary health system requires public outlays of at least \$60 per person per year (compared with thousands of dollars per capita spent in high-income countries). Yet consider a government of a low-income country with per capita income of \$500 per year. The government might be able to raise around 20 percent of GDP in domestic revenues, or roughly \$100 per capita. Given the demands on these funds (for public administration, infrastructure, education, training, law enforcement, judiciary, and more), the health sector might be able to claim 15 percent of the total budget (corresponding to the so-called Abuja Target for health spending). This would leave health spending at \$15 per person per year, just one-fourth of the basic needs. The gap would have to be closed by ODA. By the same token, a middle-income country at \$2,000 per capita can meet its public health needs out of its own revenues.

In addition to the needs of the poorest countries, concessional international public financing is needed for essential global public goods. We return to global public goods in section 3.6 below.

### **3.5 Quantifying private and public financing needs for the SDGs**

Before turning to how global investment partnerships can work effectively and the specifics of each sector, we provide a brief overview of the volumes of financing needed to achieve the SDGs. The Open Working Group on the Sustainable Development Goals (OWG) has proposed 17 SDGs and some 169 Targets. These goals and targets will likely evolve before they are finally adopted by the General Assembly in September 2015. Yet, the unprecedented global discussion on the SDGs has achieved a strong convergence of views on the scope of the agenda, as underscored by comparing UN Secretary-General (2013), HLP (2013), the SDSN (2013), Global Compact (2013), and many others with the outcome of the OWG deliberations. The main differences are in the number of goals and targets, their framing, and the relative emphasis placed on specific issues.

Table 1 provides a schematic illustration of key public and private financing needs for the 17 goals proposed by the OWG. Column 2 indicates the scale of incremental investments made to meet the proposed SDGs. For some goals, the underlying investments are made under other areas, as explained in the table. The next two columns illustrate the relative shares of public and private investments based on the principles outlines in sections 3.1–3.3 above. The final column highlights some of the pooled financing mechanisms discussed in more detail in section 5.

**Table 1: Schematic illustration of public/private financing needs for SDGs (see text for explanations)**

Open Working Group Goal	Scale of incremental investments	Share private investments	Share public investments	Role for household contributions?	Priority pooled international finance mechanisms described in this paper
Goal 1: End poverty in all its forms everywhere	Covered under other goals				All pooled finance mechanism contribute to this goal
Goal 2. End hunger, achieve food security and improved nutrition, and promote sustainable agriculture	+++	++	++	Limited role in agriculture	Proposed Smallholder Fund (building on IFAD and GAFSP); nutrition modalities TBD
Goal 3: Ensure healthy lives and promote well-being for all at all ages	++	+	+++	0	GAVI, GFATM, GFF, UNFPA, UNICEF
Goal 4. Ensure inclusive and equitable quality education and promote life-long learning opportunities for all	++	+	+++	0	Global Fund for Education (building on Global Partnership for Education)
Goal 5. Achieve gender equality and empower all women and girls	Largely covered under other goals				In particular finance mechanisms for health and education
Goal 6. Ensure availability and sustainable management of water and sanitation for all	+++	++	++	+	Dedicated financing mechanism or regional facilities (TBD)
Goal 7. Ensure access to affordable, reliable, sustainable, and modern energy for all	+++	+++	+	++	Green Climate Fund and infrastructure finance
Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Covered under other goals				All pooled finance mechanism contribute to this goal
Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	+++	+++	+	N/A	See infrastructure section
Goal 10. Reduce inequality within and among countries	Covered under other goals				All pooled finance mechanism contribute to this goal
Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable	+++	++	++	N/A	See infrastructure section
Goal 12. Ensure sustainable consumption and production patterns	++	++	++		In particular GCF, GEF, proposed Smallholder Fund, and infrastructure finance
Goal 13. Take urgent action to combat climate change and its impacts	+++	+++	++ (including virtually all adaptation finance)	N/A	GCF, GEF, infrastructure finance, other pooled finance mechanisms
Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development	+++	++	++	N/A	GEF and proposed Smallholder Fund
Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	+++	++	++	N/A	GEF and proposed Smallholder Fund
Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	+	+	+++	N/A	International Development Association (IDA) and budget support mechanisms
Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development	TBD	TBD	TBD	TBD	TBD

Source: Authors' analysis. See text for explanations.

Grouping the major investment needs for the SDGs yields nine principal investment areas:<sup>12</sup>

1. Health
2. Education

<sup>12</sup> As emphasized throughout this document these investment areas do not cover the full SDG agenda since many goals require policy-based responses. For example, gender equality, sustainable consumption and production patterns, and other critical areas depend on sound policies that are beyond the scope of this report.

3. Sustainable agriculture, nutrition, and food systems
4. Biodiversity and ecosystem services
5. Water supply and sanitation
6. A data revolution for sustainable development
7. Climate finance including Sustainable Energy for All (SE4All)
8. Financing large-scale infrastructure
9. Public-private technology partnerships

Next, it is important to consider the volume of investment needs and their distribution across public and private sources in each investment area. Attempts to quantify the investment needs for achieving global goals like the MDGs or the SDGs are frequently criticized for reasons including a reliance on inadequate data or strong assumptions, neglect of interactions across goals, or failure to anticipate technological changes and private innovation. As described in detail in Annex 1 many of these technical concerns are justified, but they do not undermine the need for and importance of clear assessments of investment needs. In fact, the inadequacy of some existing needs assessments should spur the corresponding technical communities towards filling the gaps and strengthening global, regional, and national needs assessments for the SDGs.

We see four principal reasons why needs assessments are required for the SDGs:

1. **Provide a sense of scale and feasibility of investment needs as well as major knowledge gaps:** It is important to know whether meeting the SDG on education requires, say, \$20 or \$100 billion in additional financing or whether investments in climate change adaptation are overwhelmingly public or private in nature. Only detailed needs assessments can provide an answer to these important questions of scale and feasibility. Robust needs assessments require a detailed and careful understanding of the underlying interventions needed to achieve the SDGs, the cost of providing them at scale, and the likely evolution of costs as technologies advance and the scale of activity increases. Over the years the health sector has used health needs assessments to inventory current knowledge on implementation and to systematically fill knowledge gaps (Jamison et al. 2013, GFATM 2013). In other areas, significant knowledge gaps remain that need to be filled in order to arrive at robust needs assessments.
2. **Guide the structuring of public-private investment partnerships for the SDGs:** As described in sections 3.1 and 3.2 above and illustrated throughout sections 0 and 0, virtually all investments in the SDGs require carefully designed PPPs. Their structure depends on the scale and nature of the required investments. In all cases, well-organized and efficiently deployed public finance can leverage needed private investments, so a central question for FSD is how domestic and international financing can best be organized. Detailed needs assessments help us understand the needs and provide clear metrics for measuring the success of investment partnerships.
3. **Estimate domestic resource mobilization:** Only after determining the overall volume of public and private financing needed – domestic and international – is it possible to identify a reasonable share of public expenditure that can and ought to be mobilized through domestic resource mobilization. Such analyses are sometimes conducted at the sectoral level, but it is important to consider the overall adding-up constraint in a government’s budget, which in turn requires across-the-board needs assessments. Only the residual that cannot be domestically financed should be filled through international public finance.

4. **Estimate residual ODA and concessional climate finance needs:** Since ODA and concessional climate finance fill the financing gaps left by private and domestic public resources, detailed needs assessments across the full spectrum of SDGs are required to understand the volumes of concessional international public finance required in individual countries and groups of countries.

On balance it strikes us as necessary and important to conduct rigorous needs assessments for the SDGs and to aggregate them across all major investment areas. Table 2 provides a preliminary and incomplete synthesis of published estimates for the annual investments needed to achieve sector targets that correspond broadly to the SDGs. The sources and assumptions behind each number are described in Annex 1. A few important caveats are in order before considering these numbers. First, as explained in the Annex, some estimates are incomplete and not based on the ambitious SDG agenda. They are therefore likely to understate true investment needs. Second, some estimates are derived using different methodologies and may therefore be difficult to compare at this stage. Third, although we have tried to remove overlaps from the analyses, there may be some double counting when adding up investment needs from different sectors. Fourth, investments in different areas may have synergies and reduce future investment needs, which are not captured in a sector-by-sector analysis. Greenhill and Ali (2013) and UN Task Team (2013) discuss these caveats in detail.

**Table 2: Preliminary and incomplete incremental investment needs in developing countries by investment area (in constant 2010 \$ billion)**

Investment Area	Incremental annual investment needs in developing countries through to 2030				Corresponding pooled finance mechanisms
	Total needs	Private, commercial financing	Public, non-commercial financing	Of which ODA/public climate finance	
Health	51-80	~ 0	51-80	TBD	GAVI, GFATM, GFF, UNFPA, UNICEF
Education	[38]	~ 0	[38]	[19]	Proposed Global Fund for Education
Food security	46	2	44	TBD	IFAD, GAFSP, proposed Smallholder Fund
Access to modern energy (SE4All)	34	10.5	23.5	12.8	GCF
Access to water and sanitation	27	3-5	22-24	TBD	Global Water and Sanitation Fund or regional facilities
Data for the SDGs	TBD	TBD	TBD	TBD	TBD
Ecosystems including biodiversity	[18-48]	[3-7]	[15-41]	TBD	GEF
Other agriculture	210	195	15	0	N/A
Large infrastructure (power, transport, telco, watsan)	689-1599	291-755	398-844	TBD	N/A
Climate change mitigation	[380-680]	[300-564]	[80-115]	TBD	GCF
Climate change adaptation	60-100	0	60-100	TBD	GCF
<b>Total</b>	<b>[1559 - 2873]</b>	<b>[805 - 1539]</b>	<b>[752 - 1335]</b>	<b>TBD</b>	

Sources: See Annex 1

Note: These estimates are preliminary and incomplete. Numbers in square brackets are particularly uncertain or incomplete and subject to refinement. A revised and complete set of estimates will be published soon.

The table presents incremental investment needs by private and public sources in developing countries, unless otherwise stated. Meeting the SDGs will require additional investments in the order of \$[2-3] trillion. Based on these investment needs and the proposed domestic resource mobilization standards (section 6.1) we estimate approximate ODA needs. Finally, the table lists available or proposed pooled financing mechanisms that can help organize global goal-based public-private investment partnerships, as described further in sections 0 and 0. We underscore the preliminary and incomplete nature of these estimates. A revised and expanded set of estimates will be published over the coming months.

The investment needs in the table are broadly presented from top to bottom according to increasing volumes as well as increasing levels of uncertainty. Investment areas 1-6 describe social services (health and education) and direct investments in basic infrastructure. The underlying investments require predominantly public financing since they focus on public goods and the needs of the poorest of the poor. Sometimes these investment needs are referred to as the 'MDG+' agenda since they describe a continuation and expansion of the MDGs. Synergies across areas exist, but they are modest in scale and unlikely to substantially affect investment needs overall. Needs assessments for these investment areas tend to be based on detailed bottom-up assessments of investment needs and relatively robust.

However, across sectors significant differences exist in terms of rigor and scope of available needs assessments. Filling these gaps to ensure robust needs assessments for all basic infrastructure needs and key social services must be an urgent priority for the FSD agenda.

Next, investment areas 7-9 describe much larger investment needs in infrastructure, agriculture, and maintaining ecosystems and biodiversity. These estimates tend to be derived from high-level aggregates or macroeconomic analyses that project aggregate investment ratios and elasticities across time. As a result, projected investment needs are subject to greater uncertainty, particularly since technologies and associated cost curves are difficult to project over time. A larger share of the required financing must come from private sources, which increases the importance of sound public policies and guarantee mechanisms, relative to the direct public investments that must account for the vast bulk of investments in investment areas 1-6.

Finally, investment areas 10 and 11 describe incremental investment needs for climate change adaptation and mitigation. As described in section 5.6 climate finance needs are ‘add-ons’ to core investment needs in infrastructure and other areas. Consequently, the uncertainty associated with these numbers is equal to or greater than for the underlying infrastructure or other investment needs.

The SDGs describe a universal agenda, and no high-income country has achieved the full spectrum of economic, social, and environmental objectives. As a result, all high-income countries will need to redirect public-private investments towards the SDGs and increase investment needs in key areas. High-income countries tend to make significant public and private investments in social services and basic needs (investment areas 1-6). Instead of increasing investment volumes, the main challenge will be to ensure efficient investments and effective targeting of SDG priorities. For this reason, Table 2 excludes incremental investment needs in high-income countries.

The situation is slightly different for infrastructure and ecosystem services, where many high-income countries will need to increase overall investment levels (e.g. OECD 2006). Similarly, substantial incremental investments are needed by high-income countries to promote climate change mitigation and adaptation. In spite of significant fiscal pressure on many high-income countries, the incremental investment needs can be met through private and domestic public resources.

### **3.6 Financing global public goods**

The shift from the MDGs to the SDGs sharpens the focus on key ‘global public goods’ – public goods that are of global significance. No universally accepted definition of global public goods exists, but broadly two broad types can be identified. First, some global public goods consist of global rules, governance, and regulations that drive international cooperation and economic exchange. Such rules are critical for the SDGs (c.f. section 6.2), but they do not constitute significant investment areas in themselves. Second, several global public goods require direct investments – largely from public resources. The four most important investment needs are:

- **Climate change mitigation and adaptation:** A safe and stable climate is a critical global public good that requires investments in adaptation, mitigation, and improved science. As described in section 5.6, a global investment partnership for climate change mitigation and adaptation should be structured around the Green Climate Fund and requires targeted financing through so-called climate finance (section 6.3.6).

- **Health (infectious diseases):** As underscored by the Ebola pandemic that is currently affecting several countries in West Africa, the control and treatment of infectious diseases are important global public goods. Apart from dedicated research efforts, the bulk of the investments are required to ensure functioning and robust national public health systems.<sup>13</sup> These investment needs are covered in section 5.1.
- **Ecosystem services and biodiversity:** Another critical global public good are ecosystems and their services of global significance (e.g. boreal and tropical forests, the Polar Regions, oceans) and the preservation of biodiversity. A blend of public and private financing is needed to preserve these global public goods with the Global Environment Facility playing a central role in directing public and blended investments.
- **Technology development and diffusion:** As described in section 5.10 and elsewhere in this report, achieving the SDGs will require vastly better technologies and their diffusion across all countries. These technologies and the underlying knowledge are global public goods that require significant public-private co-financing. The underlying public and private investment needs are significant but difficult to quantify. They are broadly included in the investment areas covering climate change, energy, infrastructure, health, and other areas.

Each of these global public goods requires dedicated public co-financing. While climate change mitigation and adaptation will rely largely on climate finance, the other global public goods described above will require significant volumes of public concessional finance. An important question is whether ODA should be used to finance global public goods even if the funding does not go directly towards a developing country. As discussed in section 6.3.1, ODA is a precious source of financing for the needs of the poorest countries. It therefore seems important not to dilute the definition of ODA to include investments in global public goods in high-income countries beyond the technical assistance that is already covered under today's definition of ODA. Instead ODA should be focused on direct investments in achieving the SDGs in poorer developing countries. Therefore, public financing for global public goods in developed countries should probably not be eligible for ODA and instead come from Other Official Flows (OOF).

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<sup>13</sup> The persistent underfunding of public health systems in Guinea, Liberia, and Sierra Leone has left these systems weak and unable to cope with the Ebola crisis.

## **4 Learning from public health: Designing goal-based investment partnerships**

The health sector has mounted by far the most coordinated, sophisticated, and ultimately successful campaigns and partnerships to implement the MDGs. Progress on the health MDGs (4, 5, and 6) has been remarkable: From 1990 to 2013 the annual number of under-5 deaths worldwide fell from 12.7 million to 6.2 million (UNICEF 2014). There is strong evidence of a structural acceleration in annual reductions of child mortality following the adoption of the MDGs. Even sub-Saharan Africa, which had been lagging behind the rest of the developing world in reducing child mortality, reached high rates of mortality reduction under the MDGs. All in all, at least an extra 7.5 million child deaths were averted compared with a business-as-usual scenario (McArthur 2014).

During the same time maternal deaths almost halved (WHO, 2014). By 2012 nearly 10 million HIV/AIDS-infected individuals in low-income and middle-income countries were receiving anti-retroviral treatment – up from virtually zero as recently as 2001. The successes remain incomplete because many people still die of preventable causes or lack access to affordable health systems. Yet the experience in the health sector offers important lessons for how to move rapidly from global goals to successful implementation on a global scale. This section describes how this progress was achieved and distills key lessons on the design of goal-based, public-private investment partnerships that can guide the implementation of the SDGs.

### **4.1 Rapid progress in health was improbable**

With hindsight it is difficult to appreciate how unlikely it must have appeared at the turn of the 21<sup>st</sup> century that public health outcomes would improve as dramatically as they have over the past 15 years, particularly in the poorest countries. Back then it would have been easy to be despondent, and indeed many were for the problems seemed profound: the incidence and mortality rates from malaria, TB, and HIV/AIDS were rising rapidly, and the world lacked a coordinated response against these killers. Countries lacked long-term strategies for tackling the major diseases and other causes of mortality.

Available tools, such as malaria treatment with chloroquine or standard regimes for treating TB, were losing their efficacy, and critical new tools were still unavailable or not widely known. These included new treatments for multi-drug resistant TB, low-cost artemisinin combination therapy (ACT) to treat malaria in children and adults alike, long-lasting insecticidal bed nets (LLINs) to control the transmission of malaria, rapid diagnostic tests for malaria, and many more.

Some tools, such as anti-retroviral therapy (ARV) to treat HIV/AIDS were available in high-income countries yet at patent-protected prices that put them out of reach of the low-income countries. There seemed little prospect that such medicines would become available at cost in low-income countries anytime soon. The pharmaceutical industry was at loggerheads with civil society and with governments in poor countries over access to the new medicines. With the failure of technology diffusion and technology transfer, major diseases seemed out of control, and a global partnership for health was improbable. In fact the dominant view in the early 2000s was that HIV/AIDS treatment in Africa was impossible.

As described by the WHO Commission on Macroeconomics and Health, the health sector lacked the financial resources and key institutions needed to support large-scale public health programs. Yes, UNICEF, the Red Cross, and many others did conduct successful vaccination campaigns around the world (particularly against measles and polio), but there was hardly any money mobilized to control and treat

HIV/AIDS, malaria, TB, and other killer diseases. Public finance discussions conducted by the IMF and others were largely unaware of the financing needs of health, and paid little attention to the growth-enhancing potential or the supply-side effect of reductions in mortality and morbidity. Partly as a result, health ministries and health systems in most developing countries were totally unprepared in 2000 for the large-scale programs that were launched over the subsequent decade and that have proven so successful.

Of course isolated successes had been achieved by 2000 (e.g. widespread immunization against polio, measles, and other diseases), but any dispassionate observer of public health in poor countries at the time the MDGs were adopted could be forgiven for ruling out the rapid and dramatic improvements that have swept across the health sector after the adoption of the MDGs. So what changed and how were millions of lives saved over a short few years?

## **4.2 The changes that have transformed public health since the early 2000s**

Among the many changes that have occurred in the health sector we identify several principal transformations that coalesced in the early 2000s to form global health partnerships involving a multitude of stakeholders:

### **4.2.1 Back-casting to devise implementation strategies and policy standards**

The Commission on Macroeconomics and Health (2001) and the UN Millennium Project (2005), including several specific reports on health care and health-care financing, identified broad frameworks for achieving the MDGs and success in the fight against HIV/AIDS, TB, and Malaria. The needs assessments conducted by the Commission on Macroeconomics and Health and UN Millennium Project made clear that scaling-up health care would require a mix of domestic resource mobilization and much larger ODA for health. These exercises pioneered the goal-based approach to the MDGs,<sup>14</sup> and many of the recommendations of the Commission on Macroeconomics and Health were adopted in the early 2000s while the recommendations of the UN Millennium Project were broadly adopted at the special MDG Summit in 2005 (McArthur 2013).

Such back-casting exercises became the norm for several specific initiatives around the key diseases. For example, the Stop TB Partnership designed the Global Plan to Stop TB, which launched national campaigns to roll out Directly Observed Treatment, Short-Course (DOTS) with remarkable results. TB mortality has fallen 45 percent since 1990. Roll-Back Malaria and other malaria programs drew up the Global Malaria Action Plan and detailed national strategies for controlling and treating malaria in priority countries. Another good example, was the extremely ambitious ‘3 by 5 campaign’ launched by WHO, UNAIDS, and others to extend ARV treatment to at least 3 million people by 2005. Even though the latter did not quite achieve its objective (the target was achieved in 2007) it galvanized the community and put the focus squarely on the need for scaled-up approaches to ARV treatment.

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<sup>14</sup> It is important to highlight that goals were nothing new to the health sector. Under James Grant UNICEF pioneered successful immunization campaigns in the 1980s that were based around ambitious goals. As head of WHO in the late 1990s Gro Harlem Brundtland promoted a number of goals, some of which were consolidated into the MDGs. In many ways, the MDGs themselves have learnt and taken inspiration from the health sector, which partly explains why three out of eight MDGs focus on health. Still, the MDGs provide an important organizing framework for the health priorities and embed them in broader set of goals focusing on extreme poverty in all its forms. This has put to rest the futile debates of whether health or education or agriculture were more important. The MDGs allowed everyone to focus on implementation, and the health sector seized its opportunity.

Partly motivated by the MDGs, academics, NGOs, governments, and international organizations assembled rigorous evidence on the effectiveness of key policy prescriptions. Major policy breakthroughs were achieved on dropping user fees for health services and replacing the social marketing of LLINs by free or highly subsidized distribution of LLINs. Over time the evidence-based advocacy led to a shift in official positions towards free distribution of LLINs (WHO 2007) and more gradually towards free access to universal primary health care (Yates 2009). The dropping of user fees for primary health care became a major driver for increasing access to health care and improving health outcomes, particularly for reproductive, maternal, newborn, and child health.

The back-castings around tangible goals spurred other important discussions around policy coherence and operational challenges. Of particular importance was the WHO-hosted High-Level Forum on the Health MDGs, which *inter alia* advanced the agenda on fiscal space for domestic investments in health, and the Global Health Workforce Alliance working to address the human resource bottlenecks. Similarly, the International Health Partnership (IHP+) became a critical forum for addressing challenges of aid effectiveness and coherence with national policies and investments. It provided an important forum for reducing fragmentation in health financing – in particular around GFATM-funded programs. Through these and other initiatives, the health sector gradually chipped away at implementation challenges towards achieving the health goals and built a robust set of policy standards.

#### **4.2.2 Launch of the GFATM and GAVI**

Both the GFATM and GAVI were the first to make large-scale funding available to national programs for the control and treatment of major diseases. Critically, the funding was provided competitively on the basis countries' proposals, thus ensuring country ownership and a healthy competition for available financial resources. In contrast, many bilateral programs – with the notable exception of the President's Emergency Plan For AIDS Relief (PEPFAR) and the President's Malaria Initiative that were established by the US – were too small and too slow to provide sufficient co-financing for national-scale health programs. In spite of improved donor coordination efforts, bilateral programs also tended to be much less demand-based and much more cumbersome than was the case with GFATM and GAVI funding. They also did not encourage adequate competition for resources and failed to generate the 'demand discovery' that became central to innovation and learning in the fight against HIV/AIDS, malaria, and other major infectious diseases.

The implications of the GFATM and GAVI models on national health systems were profound. First, health ministers were empowered to develop large-scale programs. In many countries finance ministers started to work effectively with their health ministers for the first time in the design and implementation of national-scale programs, which in turn removed major organizational and governance bottlenecks in the health sector. The multi-stakeholder Country Coordination Mechanisms (CCM) of the GFATM promoted engagement with civil society and other stakeholders, which proved particularly important for tackling infectious diseases, such as HIV/AIDS, which may be associated with social stigma or require behavior change from large segments of a population. In several countries the GFATM is the only outside donor that enjoys the trust and support from governments and civil society to co-finance programs tackling stigmatized infectious diseases.

Second, by providing funding at scale with medium-term to long-term visibility, the GFATM and GAVI created an effective partner for business,<sup>15</sup> which in turn drove unparalleled innovation in the development and delivery of tools for prevention, treatment, control, and diagnosis of major diseases. The harmonized funding of national health strategies made it possible for the pharmaceutical industry to agree on differential licensing arrangements and to develop vaccines and drugs for the needs of low-income countries. It took the dedication and leadership of President Clinton working with UNITAID to clinch the first major deal on differential drug pricing, but this would have scarcely been possible without the GFATM and GAVI.

Both institutions also helped map and consolidate diffuse demand from a large number of countries to provide secure, long-term demand projections for companies' products, thus allowing business to ramp up research and production efforts. Powerful examples were the mapping of vaccine market roadmaps<sup>16</sup> and advanced market purchase commitments for new vaccines under GAVI or long-term projections of demand for LLINs by the GFATM. The latter made possible the massive expansion of LLIN production facilities by companies, including a growing number of producers in Africa.

Third, the rigorous and transparent project appraisal, monitoring, and evaluation by the GFATM – combined with the widespread sharing of lessons learnt across countries – led to a rapid diffusion of knowledge and expertise on how to design and implement national-scale programs. In particular, the quality of African health programs improved tremendously in a short period of time. The importance of this shift cannot be overstated: In the early 2000s no health expert – let alone African ministers of health – would have been able to write down an operational national malaria control program. Most of the pieces were known, but they had never been put together at scale, and there was little understanding of how such large programs could be operated.

It took the availability of large-scale resources through the GFATM and the President's Malaria Initiative – coupled with effective technical support through the Roll-Back Malaria Partnership – to change this situation. Today, African health ministers can give PowerPoint presentations on their national programs spelling out goals, milestones, budgets, logistics, Monitoring and Evaluation (M&E), etc. In a short period of time the sector learnt how to develop national-scale programs, and this knowledge spread quickly across the entire continent. In contrast, other sectors, such as education, water and sanitation, or agriculture, lack the detailed operational knowledge (and experience) of how to conduct large-scale programs in resource-poor settings because they lack the equivalent of a GFATM.

As new institutions the GFATM and GAVI have come under heavy criticism – sometimes justifiably so. In the early years there was certainly much ground for criticism of cumbersome GFATM procedures and processes that many recipient countries perceived as disruptive. Over time, however, the two organizations have improved performance and won over the critics through superior performance and impressive outcomes. Other criticisms have focused on the GFATM's promotion of 'vertical' programs. We discuss these and other criticisms in section 4.3.2, which discusses the role of pooled financing mechanisms in public-private investment partnerships.

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<sup>15</sup> The International Finance Facility for Immunization (IFFm) established by GAVI is an important example of providing long-term visibility and financing commitments to business, which in turn enables private companies to invest in the costly and drawn-out development of new vaccines.

<sup>16</sup> See for example, the market roadmap for Japanese Encephalitis (GAVI 2014c) or other market roadmaps on the GAVI website.

In 2013 the GFATM adopted its New Funding Model, which moved away from rounds-based financing and towards pre-determined country allocations. Each eligible country can now submit a proposal for its allocation. Some elements of ‘demand discovery’ have been retained in the new funding model, which provides a modest amount of incentive funding (\$1 billion for the period 2014-2016) for additional support to high-quality programs. Country requests that have been approved by the Technical Review Panel and exceed the country allocation as well as available incentive funding are placed on a register of ‘unfunded quality demand’ that third-party donors are invited to contribute to. Key reasons for the GFATM shift included (i) need for a more iterative approach of developing and reviewing programs instead of a binary ‘yes’ or ‘no’, and (ii) allowing eligible countries to apply at any time during the three-year allocation period to better align with national budgeting cycles and to provide more predictable funding; (iii) ensure that non-Anglophone countries, particularly in West Africa, receive funding allocations that are proportionate to their needs; and (iv) a strong sense among the donor community that ODA volumes for GFATM and large bilateral programs – particularly in the US – had to be capped by pre-assigning allocations to each country.<sup>17</sup>

This shift away from the competitive rounds-based model raises questions about the continued effectiveness of the ‘demand discovery’ approach, which has been a hallmark of GFATM success. Encouragingly, early signs are that countries continue to submit country requests that exceed the GFATM country allocations. Still, we see grounds for concern that the allocation-based funding model suppresses demand and undermines innovation. This would drive up the real costs of tackling the diseases for developing countries and donors alike, and any suppression of demand would make it harder to meet the SDGs.

We emphasize that the GFATM and GAVI are only successful when international donor support complements rather than substitutes for domestic resource mobilization for public health. There can be no doubt that – where available – domestic resources should finance national health systems, and international public finance should come in only where core needs cannot be financed domestically. The 2001 Abuja targets on domestic health funding and similar initiatives in other regions have established important benchmarks for domestic resource mobilization that should be followed by all countries.

Some exceptions can be made in middle-income countries with high-disease burdens. When external co-financing through the GFATM or other mechanisms is needed to support the design of national programs, then limited ODA should be provided even though the recipient countries are macro-economically able to should the necessary expenditure themselves (see sections 5.1. and 6.1 for a more detailed discussion of health financing and eligibility criteria).

#### **4.2.3 Mass mobilization by activist NGOs and others around Health MDGs**

The MDGs included three health goals that mobilized the health community around the world, particularly with regards to the fight against major infectious diseases (HIV/AIDS, TB, and malaria) and child mortality. In parallel to the MDGs or in extension of the global headline goals, the health

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<sup>17</sup> Even before the adoption of the New Funding Model, the GFATM experienced significant resource constraints. For example, following the successful round 8 the GFATM Board decided to reduce financing for all programs that had been approved by the Technical Review Panel by 10 percent for Phase 1 and to limit resources available for Phase 2 by 75 percent of approved programs (Board decision GF/B18/DP13). In 2011 the Board had to cancel Round 11 and transform it into a ‘transitional funding mechanism’ (Board decision Point GF/B25/DP16). These examples demonstrate that in spite of its successful resource mobilization the GFATM has been underfunded.

community adopted a number of aggressive global goals for tackling key health challenges, such as the Stop TB goal of getting 3 million on TB treatment, the ‘3 by 5’ goal of expanding ARV coverage in developing countries from literally zero to 3 million by 2005, or the 2015 Roll-Back Malaria goal of a 75 percent reduction in malaria morbidity and mortality relative to 2005.

Many individuals and organizations raised awareness, fostered collaboration, and promoted practical approaches to addressing the health challenges. For example, NGOs around the world forced governments to pay attention to HIV/AIDS and helped tackle the stigma associated with this sexually transmitted disease, which in turn enabled the rapid progress in expanding ARV treatment. NGOs also participate actively in the GFATM CCMs, which provide an important multi-stakeholder forum for developing and implementing countries’ strategies.

The Gates Foundation made critical contributions to building the ‘ecosystem’ of these global health partnerships. In particular it has provided flexible and fairly elastic start-up funding for major new initiatives in the sector, such as funding the Commission on Macroeconomics and Health as well as the launch of GAVI. To this day it is a major funder for activist NGOs that drive greater accountability, advocate for increased resources, and promote novel approaches of tackling health challenges.

The role of persistent advocacy must not be underestimated. Most of the progress in public health came despite cynicism and open doubts. It took long battles to win the case for anti-retroviral treatment of poor people in poor countries; for the free distribution of anti-malaria bed nets and other anti-malaria control measures; for attention to multi-drug resistant TB; and for action against ‘neglected tropical diseases.’ Similarly, several pharmaceutical companies strongly resisted differential drug pricing at first. No victory was assured at the start. Yet the existence of global goals and effective monitoring and evaluation of successful programs made it much easier for advocates to carry the day eventually.

#### **4.2.4 Improved tools and standards through RDD&D and public-private partnerships**

On the basis of the global goals international organizations like WHO and UNICEF, NGOs like the Red Cross and MSF, and research institutions – notably through dedicated series in the medical journal *The Lancet* – inventoried and standardized the tools needed to achieve the goals, identified gaps in interventions, and developed new tools. For example, UNITAID offers long-term purchasing commitments to spur development of new health products. Similarly, under guidance from WHO and the World Health Assembly, treatment regimens for malaria – particularly for children – shifted to ACT. LLINs were established as a proven and effective tool in controlling malaria in endemic areas, and over time WHO also recommended the free distribution of LLINs since social marketing campaigns had proven ineffective at reaching the required scale.<sup>18</sup>

Private-sector companies stepped up their participation dramatically, particularly in health product development. In the case of GFATM, companies developed novel technologies and committed the investments to scale up production (e.g. production of ACT). Several private-sector producers of antiretroviral medicines committed to providing their medicines at cost to low-income countries, and also in some cases to provide open licensing for production by generics manufacturers. More can and needs to be done: The GFATM is currently expanding its partnerships with companies in the IT, logistics,

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<sup>18</sup> Recently *The Lancet* has updated its analysis of how health goals can be achieved for the post-2015 period (Jamison et al. 2013).

financial and consumer good sectors to strengthen supply chain management, finance, and risk management and program quality.

The Stop TB Partnership standardized DOTS treatment protocols for application around the world and enlisted private industry to tackle the challenges of multi-drug-resistant TB. UNICEF, UNFPA, and many others have promoted essential child health packages, defined the core interventions for sexual and reproductive health as well as maternal and newborn health. These global efforts to inventory tools, standardize treatment protocols, and establish global standards enabled an unprecedented diffusion of knowledge and technologies in a short period of time.

Of particular importance were the often small-scale demonstration projects that informed and inspired the scaling-up of proven health-care interventions. For example, the small NGO Partners in Health demonstrated how complex ARV treatment regimens could be administered in Haiti and other low-income countries, thus paving the way for the large-scale rollout. Similarly, UNICEF and the International Federation of the Red Cross and Red Crescent pioneered campaigns for vaccination and distribution of malaria bed nets. The Millennium Villages Project demonstrated the feasibility of rapid malaria control through an integrated strategy of free bed-net distribution, community-based malaria control delivered by community health workers, rapid diagnostic tests, and free access to ACT. Organizations like MSF showed how child mortality could be reduced in some of the most impoverished settings. Each of these demonstration projects inspired action and chipped away at the excuses for not tackling the health challenges at scale.

The Gates Foundation played a central role in promoting innovation through its heavy investments in improved performance metrics for health and public-private partnerships for technology development. The latter have borne fruit on a number of breakthrough enabling technologies in support of global health goals.

Successful implementation strategies spelt out responsibilities of national and international actors, and provided budgets, milestones, and clear metrics for tracking progress. The latter became critical during implementation when monthly or quarterly progress reports were submitted from each country or health district, thus creating a dynamic and energetic ‘campaign’ during which all partners were rigorously held to account to achieve the best results in the shortest period of time. Implementation protocols were regularly revised to take into account lessons learnt during national and regional roll-outs.

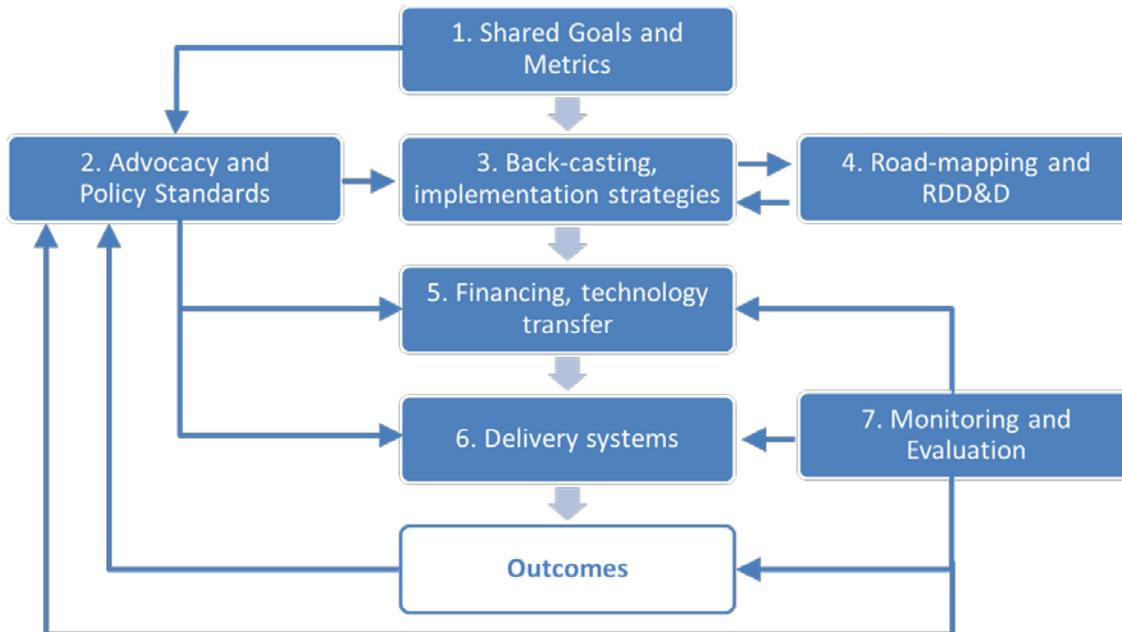
### **4.3 Applying the lessons from health: Developing public-private investment partnerships**

The global partnership on health shows how a multitude of actors including national governments, NGOs and civil society, businesses, international organizations, foundations, and the scientific community can be mobilized around shared goals to solve a complex long-term investment challenge. Together these actors can create a dynamic ‘ecosystem’ that mobilizes an entire epistemic community, ensures accountability, fosters innovation, and transfers knowledge for national-scale implementation programs. Goals provide energy, commitment, resources, and timelines. They give rise to partnerships that can create real change. In this way goal-based development constitutes a critical approach for solving extremely complex operational and investment challenges at global, regional, national, and local levels.

#### 4.3.1 The functioning of goal-based investment partnerships

Each investment area or sector has unique features and requirements for success, so there cannot be a one-size-fits-all approach to building global public-private investment partnerships. Yet, it is possible to identify seven core processes of goal-based partnerships that are illustrated in Figure 1 and described below.

Figure 2: Seven core components of goal-based investment partnerships



1. **Shared global goals and metrics:** John F. Kennedy famously explained the power of clear goals: “By defining our goal more clearly - by making it seem more manageable and less remote - we can help all peoples to see it, to draw hope from it, and to move irresistibly toward it.” This is how global goals like the MDGs can work. They provide a coherent narrative for action, mobilize all actors involved in a particular area, and galvanize the community to develop clear strategies for implementation, raise the financing, and develop the technologies needed to implement them. Well-crafted SDGs can play this role in all priority areas for sustainable development (SDSN 2013). They would need to be translated into operational targets and objectives – just like the public health community adopted the ‘3 by 5’ target on HIV/AIDS control or the ‘Reach 3 million’ target to control TB on the back of the MDGs. Clear metrics will help us understand whether we are on track towards achieving the goals (SDSN 2014).
2. **Advocacy and policy standards:** Activist NGOs and other stakeholders can raise awareness of the importance and feasibility of the global goals, mobilize stakeholders, and ensure accountability. They will help ensure effective implementation strategies and play a central role in mobilizing the needed public financing. Rigorous evidence-based advocacy also helps establish policy standards in collaboration with international organizations, such as the consensus that both primary schooling (Kattan and Burnett 2004) and primary healthcare (reviewed in Yates 2009) should be free or the WHO standard on the free or highly subsidized distribution of LLINs (WHO 2007). Good advocacy in turn requires flexible funding for NGOs (e.g. through philanthropists, such as the Gates Foundation) as well as reliable evidence on the

efficacy of the proposed programs, which is provided through rigorous monitoring and evaluation. The successful achievement of outcomes strengthens advocacy, as happened in health where success in one country and against one disease was used to spur greater action elsewhere.

3. **Back-casting and implementation strategies:** We use the term ‘back-casting’ to describe the process where long-term targets are set, and then the changes needed to achieve these targets are systematically determined by working backward from the targets. Back-casting is not to be confused with rigid central planning – it allows for bottom-up innovation and must be adaptive, as strategies and pathways will have to be continually revised and updated based on new scientific insights, technological innovation, and lessons learnt from implementation. Such back-castings form the basis for national implementation strategies that spell out the operational milestones, means of implementation, responsibilities, and so forth. Implementation strategies may cover a few years and often require quarterly performance benchmarks and reporting on results. The public health community used back-castings to great effect by showing how ambitious treatment and mortality targets can be achieved through targeted investments over sustained periods of time. Based on such back-castings, published in the *Lancet* (e.g. Jamison et al 2013) and elsewhere, countries developed national strategies to control HIV/AIDS, TB, malaria, and address other health priorities.
4. **Technology road-mapping for Research, Development, Demonstration and Diffusion (RDD&D):** Based on the global goals, rigorous RDD&D is required to inventory ‘reservoir technologies’, fill gaps in interventions and available technologies, demonstrate new technologies and tools, and ensure their take-up through diffusion. In areas where major technological progress is required (e.g. in vaccines or low-carbon energy technologies) the expert communities can develop long-term road maps for technology development – often with strong participation from business and academia. Important examples in the health sector are the GAVI vaccine market roadmaps (e.g. GAVI 2014c) or UNITAID’s long-term funding commitments to support product development. Such roadmaps and findings from RDD&D will then in turn influence the back-castings and implementation strategies. Technology roadmaps have been used to great effect in other areas, including the International Technology Roadmap for Semiconductors (ITRS 2013), the NIH Epigenomics Mapping Consortium,<sup>19</sup> or various energy technology roadmaps undertaken by the IEA.<sup>20</sup> Each of these roadmaps has accelerated technological progress in semiconductors, genome sequencing, and energy technologies. Similar roadmaps are required for all SDGs that rely on significant technical progress.
5. **Financing and technology transfer:** Each area needs to identify the appropriate blend of public and private resources for capital and operating expenditure, and how these can be provided at scale and with minimal transaction costs in countries and for global public goods. Where substantial flows of international public finance are required, pooled multilateral financing mechanisms can make an important contribution towards keeping transaction costs low and organizing the sector. Technology transfer must be integrated into international financing mechanisms since the private holder of the intellectual property will need to be compensated for any transfers at reasonable rates (section 5.9). For example, GAVI and the GFATM have

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<sup>19</sup> See <http://www.roadmapepigenomics.org/>

<sup>20</sup> See <http://www.iea.org/roadmaps/>

scaled up ODA for public health, but they have also drastically increased the efficiency and effectiveness of the funding (section 4.3.2). Both institutions were vital in making advanced technologies widely available in developing countries by purchasing large volumes of commodities and drugs from the businesses that produced them.

6. **Delivery systems:** Effective national delivery systems that are supported by international partners vary from sector to sector. Where public goods need to be financed, delivery systems may be of a public administrative nature (e.g. health, education) or comprise public-private partnerships (e.g. for finance, construction, and operation of infrastructure). Some delivery systems may be largely run by NGOs – as is common in some South Asian countries – or businesses.
7. **Monitoring and Evaluation:** Rigorous and transparent M&E will sharpen the understanding of which interventions and delivery systems work and how they can be improved; track public and private resource mobilization and their effective use; track technology transfers; and – above all – monitor the outcomes. M&E holds all actors to account for results and ensures efficient use of resources. It provides the evidence base for effective advocacy and policy standards. In the case of health, rigorous independent M&E has been hardwired into all programs supported by GAVI and the GFATM. Over time M&E has contributed to substantial improvements in the design and delivery of health programs, and these lessons were shared widely within the public health community.

All functioning global partnerships have successfully utilized these seven components. Each component can be driven by many different actors – governments, civil society organizations, businesses, and universities – and each works in harmony with the others. The components also differ markedly across investment challenges. For example, a global partnership for the low-carbon energy transformation would have very different needs from health partnerships, though each of the seven components will play an important role. We will review the differences across investment partnerships in section 5.

#### **4.3.2 The central role of pooled financing mechanisms**

Effective partnerships are not centrally planned, and they do not depend on one actor that oversees all activities. Yet delivering results at the required scale requires a high degree of mobilization and organization. So, successful partnerships require one or more ‘engines’ that can drive progress and mobilize other partners to act.

In health the thematic pooled financing mechanisms, GAVI, the GFATM, and the large US bilateral programs PEPFAR and the President’s Malaria Initiative, proved vital to building the investment partnership. This lesson can be generalized to many other public-private partnerships for the SDGs: pooled financing mechanisms for international public finance play a central role in translating global goals into effective investment strategies and partnerships. We note that the International Development Association (IDA) of the World Bank is a pooled financing mechanism that provides highly flexibly and un-earmarked funding to the poorest countries. We return to the special role of IDA and its relationship to the thematic pooled financing mechanisms in section 5.9.

The greater effectiveness of pooled funding mechanisms relative to fragmented approaches has been widely recognized and documented (e.g. Arakawa et al. 2014, Ban et al. 2008, CPI 2011, Gates 2011, OECD 2011, Polycarp et al. 2013, UN 2014, World Bank 2013a), but it would be a mistake to reduce their role only to the mechanics of disbursing financing. Experiences in the health sector and elsewhere show

that well-designed pooled financing mechanisms play important roles in financing, organization, knowledge transfer, and advocacy. They help to promote:

1. **Effective country-led programs & national ownership:** Large-scale funding that is provided competitively on the basis of country-led programs developed by the responsible line ministries will improve the organization, quality, and national ownership of country programs. Experiences in the health sector and elsewhere show that when countries can apply for large-scale pooled funding, the responsible line ministry becomes a potential source for significant volumes of predictable funding, which can in turn foster effective cooperation with finance and other ministries. Open and competitive processes of ‘demand discovery’ can mobilize unprecedented efforts on behalf of governments as well as civil society to ensure the success of these programs – particularly when national multi-stakeholder mechanisms, such as the GFATM CCM, mobilize and coordinate government and non-government actors. The large number of current and former government leaders who have signed up as Global Fund Advocates are a powerful testament to the GFATM’s success in fostering national ownership. Such country leadership and ownership simply cannot be mobilized through a series of poorly coordinated small-scale aid programs.<sup>21</sup>
2. **Lower transaction costs & minimal duplication:** By reducing the number of interfaces, reporting requirements, and financial flows, pooled mechanisms can reduce fragmentation and transaction costs on donor and recipient sides (OECD 2011). Likewise, it becomes much easier to avoid redundancies and overlaps in the international development and climate finance architecture once the bulk of financing flows through a small number of global funds, regional programs or other large-scale pooling mechanisms.<sup>22</sup>
3. **Effective mobilization of private finance and leveraging:** Another important advantage of large pooling mechanisms lies in their ability to define PPP windows and blending mechanisms for public and private financing. Instead of having to negotiate with a large number of bilateral donor agencies, private investors can deal with ideally one pooling mechanism for each sector. This in turn will increase competition among private providers and lower the cost of private blending. Since the opportunities and effective operational modalities for blending public and private financing vary across sectors, blending mechanisms should be structured along sectoral lines (e.g. agriculture or energy) in order to facilitate private leveraging of public funds. Similarly, pooled mechanisms can raise debt in the capital markets, thus extending their resources several-fold (e.g.

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<sup>21</sup> Take the example of the health sector where it is common for some African countries to deal with over 30 donors (excluding NGOs and foundations). Each of these donors has its own requirements for the use of funds, disbursement schedules and conditions, reporting requirements. In some extreme cases, part of the aid remains tied and/or must go through separate vertical programs outside the control of the national health system. In such a context African ministers of health and finance spend an inordinate amount of time negotiating and dealing with the representatives of multilateral and bilateral programs. It becomes virtually impossible to have a true national program, and ‘national ownership’ becomes a rhetorical commitment that is impossible to materialize. Here the International Health Partnership (IHP+) process has also led to significant improvements (Save the Children 2011).

<sup>22</sup> It is sometimes argued that pooling mechanisms, such as global funds, would add another layer of complexity, which is of course not the case. Instead global funds and other pooling mechanisms remove the inordinate number of bilateral financing negotiations and interfaces that currently occur in every country. Where effective pooling mechanisms already exists, the efficiency gains can be immediate. For example, in the health sector virtually every bilateral and multilateral donor already works with the GFATM, so broadening the fund’s mandate would lead to a drastic reduction in transaction costs.

World Bank et al. 2011). This approach has been demonstrated by GAVI's success in developing a number of scalable specialized public-private co-financing vehicles for specific health financing needs, including the International Finance Facility for Immunization (IFFIm) and the Global Matching Fund (Gates 2011). The GFATM in turn has struck a partnership with (RED), a consumer marketing initiative that raises awareness of and funding for programs to control and treat HIV/AIDS in Africa.

4. **Improved allocation of aid to countries most in need:** Compared with bilateral agencies, multilateral funding mechanisms are less encumbered by historical and geopolitical relationships in the allocation of their financing. For example, the education sector shows that multilateral agencies are better able to allocate funding according to need and ability to spend (Rose et al. 2013). IDA provides some of the highest quality aid available to the poorest countries. Similarly, the GFATM has been tougher than most bilateral donors on recipient governments that misappropriated funds. This has greatly improved the transparency, effectiveness, and results-focus of aid in the health sector overall.
5. **Predictable multi-year funding commitments:** In contrast to many bilateral aid programs, the GFATM, GAVI, or IDA provide predictable funding over several years. Such predictable funding is critical for the effective programming of resources and public financial expenditure management. The need for medium-term predictability is particularly important in the social sectors where recurrent salaries and other operating expenditures require predictability so that delivery systems can be strengthened.
6. **Massive acceleration of innovation through business engagement:** Pooled financing mechanisms and the scaling-up as well as harmonization of national implementation strategies they entail provide the clear interface business needs to invest in innovation and new technologies. Thanks to the GFATM and GAVI many innovations became possible in health that would otherwise not have occurred. Conversely, the lack of pooled financing mechanisms and the 'organization' of epistemic communities they promote explain why innovation and the take-up of new technologies have been relatively slow in other sectors.
7. **Technical integrity, rapid learning, and efficient knowledge transfer:** Pooled funding programs of significant scale can develop robust systems to ensure independent high-quality technical appraisals of funding proposals, monitoring and evaluation. They also provide effective forums for rapid learning and knowledge transfer across countries. Such 'capacity building' and training becomes effective, because it is tied to the prospect of mobilizing the resources to implement programs at scale. For example, before the GFATM was established not a single African country had an effective national-scale malaria control program in place – now virtually all malaria-endemic countries do thanks to the tremendous learning and knowledge transfer<sup>23</sup> made possible

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<sup>23</sup> The design of pooled financing mechanisms has important implications for the learning and knowledge transfer they generate. At one end of the spectrum, the GFATM has established clear funding rounds for well-defined challenges, such as national malaria control. As a result, all national malaria control programs could be compared, and successful innovations in one program spread quickly to others. In comparison, the GEF has for years maintained funding windows accepting proposals for projects that could be very different in scope, scale, and implementation modalities. Since the projects were difficult to compare, much less learning occurred on how to

through its large-scale funding. In education, the Global Partnership for Education (GPE) and its predecessors have not been successful in mobilizing the required resources, but they did consolidate best practice for national education programs and have had a significant impact on improving the quality and efficacy of national education strategies.

8. **An important global voice and mobilization of civil society:** The GFATM and GAVI have become important global voices and advocates for mobilizing resources at scale and meeting the health goals. Each has helped mobilize additional resources and foster political commitments to public health. Both have been effective in mobilizing civil society partners and advocates who have in turn led advocacy for increased funding to health in their own countries – recipient and donor countries alike. The GFATM’s extensive civil society network buttressed by multi-stakeholder Country Coordinating Mechanisms in recipient countries has been a critical driver of the successful resource mobilization and for building the case to channel taxpayer’s money through a multilateral mechanism. The success of the health mechanisms’ mobilizing power is in significant part attributable to their data-driven results orientation and the resulting availability of hard data that substantiates their effectiveness. Similarly, the IDA replenishment rounds focus the international community’s attention on the financing needs of the poorest countries. Other pooled financing mechanisms can play a similar role by helping raise the global visibility of the issues, demonstrating the feasibility of rapid progress, and establishing a clear ask for additional resources.
9. **Transparent resource mobilization parameters:** Financing of global funds and other large pooling mechanisms can be guaranteed on the basis of clear country-by-country assessments, using per-capita income levels and total national income as guidelines (as with IMF and World Bank quotas, and UN assessed dues). Over time such ‘assessed contributions’ promise to be the fairest way to finance international development cooperation and climate finance. A key challenge we will return to is the need to coordinate the replenishment rounds of global funds and pooled financing mechanisms (see also Arakawa et al. 2014).
10. **Effective financing for technology transfer:** The SDGs will outline shared global challenges that require shared technologies. For this reason developing countries rightly insist on the need for effective mechanisms for technology transfer. The appropriate modalities for technology transfer differ by sector and may include differential pricing (e.g. for HIV/AIDS treatment), technology licensing (co-) financed through public subsidies, differential patent tenors, joint ventures, compulsory licensing, and many other mechanisms. Pooled financing mechanisms can co-finance technology transfer – either as part of their program funding or through dedicated financing windows that are adapted to the types of technologies and applications financed by the pooled financing mechanism. So each pooled financing mechanism needs to have a dedicated financing window to support R&D and the development and deployment of pre-commercial technologies financing. These windows would also support the diffusion of technologies, particularly to low-income countries.

Global funds and other pooled financing mechanisms have faced criticism from a number of stakeholders. Common criticisms include, first, that global funds are simply extra entities that create

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implement them successfully. Under its 6th replenishment round the GEF is now moving towards financing large-scale and comparable programs under a small number of thematic windows.

additional transactions costs. The opposite is true with well-designed pooled financing mechanisms. The transaction costs of passing donor resources through a single mechanism are vastly lower than passing funds through literally dozens of bilateral arrangements. Of course this will work only if donors agree on a small number of multilateral pooled financing mechanisms, as suggested in this report.<sup>24</sup>

Second, concerns have been expressed that global funds shift the focus away from domestic resource mobilization in recipient countries. Clearly, international development assistance should be made available only when private or domestic public resources are insufficient to meet the investment needs. Large pooled financing mechanisms are in fact better placed to promote a reasonable division of domestic and international financing than large numbers of bilateral and multilateral ODA programs would be.

The GFATM's new funding model includes mandatory counterpart financing requirements and uses 'willingness to pay' as an important criterion in determining the volume of funding a country can apply for. In this way the Fund is playing an important role in *increasing* domestic resource mobilization. The successful transition of China from GFATM support and the efforts made by the Chinese government to continue the programs with domestic resources is a powerful example of the catalytic role of well-designed programs supported by pooled financing mechanisms. In China's case, for example, the GFATM's support has laid the foundations for China to have an ambitious multi-drug resistant TB (MDR-TB) control program over the coming years.

A more serious – third – issue concerns the political economy of mobilizing resources. Parliaments in donor countries find it easier to mobilize taxpayers' resources if the funds are disbursed through national institutions. This affords greater control over the use of resources and allows aid to be tied to specific foreign policy and commercial interests of the donor country. The result, of course, is to politicize aid rather than to professionalize it. Thankfully, with the success of GAVI and GFATM backed up by rigorous M&E and data, many governments have been able to explain to their voters how ODA contributes to successful development initiatives. A powerful illustration of this shift in the attitudes of governments and the public is the positive reaction of the British media, which can be highly critical of development assistance, to the UK's 2013 announcement to more than double its previous GFATM pledge. Clearly, if the UK can drastically increase its resources to the GFATM then other countries should also be able to channel a larger share of their ODA through pooled multilateral financing mechanisms.

Fourth, the GFATM in particular has been criticized by some for promoting vertical, disease-specific programs at the expense of 'horizontal' health system strengthening. There are cases where vertical programs are justified to achieve quick results in tackling priority challenges, but over time countries do need to strengthen health systems. Yet this criticism should not be leveled at the GFATM but at its donors. The Global Fund has a health systems window and would like to promote horizontal programs more effectively, but it lacks the resources to do so. In fact an independent assessment has found that the GFATM has leveraged existing flexibilities in its mandate and funding model to increase synergies between disease-specific financing, support for health systems strengthening, and reproductive, maternal, newborn, and child health services (IERG 2014). A next step must be to fully resource the health systems financing window of the GFATM or to provide additional resources for health systems to

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<sup>24</sup> As one egregious example described further below, the several dozen international climate funds clearly are an ineffective and inefficient way of channeling scarce public resources.

GAVI.<sup>25</sup> The delivery of increased funding for health systems could be coordinated with the IHP+ Partners.

Finally, some critics have pointed to corruption and poor results in some GFATM-funded programs as a sign that pooled financing mechanisms do not ensure effective use of resources. This concern seems unfounded since independent evaluations (e.g. Macro International 2009) of the GFATM attest to effective mechanisms for control and good results. All cases of improper use of GFATM resources were uncovered by the Fund's own control mechanisms, and corrective actions were taken (Dybul 2013, MAR 2011, 2013). The GFATM has been credited with being highly transparent about the fraud it uncovers (Rivers 2012). No case can be made that well-designed pooled financing mechanisms have poorer oversight than a larger numbers of individual projects.

On balance the case for considering pooled financing mechanisms as a central component of public-private investment partnerships to achieve the SDGs is clear and powerful. The importance of pooled disbursement has been widely recognized in many international forums including the Intergovernmental Expert Committee on Sustainable Development Financing and the DAC, but far too little progress has been made towards its widespread adoption.

Clearly, though, there is a case for continuing bilateral assistance, for example to enable individual donor countries to experiment, to mobilize national expertise, and to partner with national business and civil society. We are not denying the usefulness of such bilateral activities. We are rather emphasizing the power of pooled financing to make large, scaled progress towards shared global goals.

#### **4.3.3 When are pooled financing mechanisms needed and how should they be designed?**

As emphasized in the next section, many investment areas do require strengthened pooled financing mechanisms, but in some areas such mechanisms are not an appropriate tool. Likewise, the mere existence of pooled financing mechanisms is not a guarantee of success. Each mechanism must be well resourced and well designed. It is therefore important to identify the criteria that can help guide the public discussion on whether one or more pooled financing mechanisms are needed in a particular investment area and how such mechanisms should ideally be designed.

Pooled global financing mechanisms appear necessary and appropriate when some of the following requirements are met:

- **Program- or system-based financing needs (as opposed to project-based financing):** Pooled financing mechanisms are ideally suited for co-financing government programs, such as national malaria-control programs or health systems. Helped by their ability to make available macro-economically significant funding, they are an effective mechanism for focusing attention on the design and implementation of such programs, promoting the necessary learning, and supporting domestic resource mobilization. They also play a critical role in overcoming fragmentation among bilateral and multilateral agencies (c.f. discussions on education and health below in

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<sup>25</sup> Looking beyond the question of horizontal vs. vertical programs in health, the choice between un-earmarked, flexible funding à la IDA and issue-specific funding à la GFATM or – as proposed below – a Global Fund for Education requires a careful analysis. We will return to this question in section 5.9 on IDA where we argue that both instruments are needed with IDA playing the vital role of filling large-scale financing gaps at the country level that cannot be addressed through a system issue-specific pooled financing mechanisms.

sections 5.1 and 5.2). Examples for areas where global financing mechanisms are well suited are health, education, smallholder farmers, nutrition, and so forth.

On the other hand, pooled financing mechanisms are less well suited for large infrastructure projects or other project-based financing modalities. Here institutions with a banking license are better able to provide the full suite of financing services needed. An important exception to this criterion is the Green Climate Fund (GCF) that owes its existence to the critical need for mobilizing additional climate finance under the UNFCCC. As we will see later, the GCF is therefore designed as an add-on mechanism without its own banking license.

- **Substantial ODA needs, particularly for operating expenditure:** The purpose of pooled financing mechanisms is to pool concessional international finance. So they work well in areas and countries where substantial international co-financing is required around national programs. In particular, pooled mechanisms are well suited for supporting the gradual scaling up of national systems and their attendant operating expenditure. In contrast fragmented aid tends to lack the predictability and opportunities for gradual scaling-up that are so essential for success. On this count – once again – the social sectors, nutrition, and smallholder farmers stand out as areas where pooled financing mechanisms are well suited. In contrast, areas that are dominated by technical assistance, such as governance and public financial management systems, are ill suited to pooled global financing mechanisms. Similarly, such mechanisms have not proven successful as a standing tool for supporting emergency operations.
- **Need to mobilize different types of stakeholders, including the private sector:** Pooled finance mechanisms have a tremendous ability to support multi-stakeholder partnerships in support of ambitious objectives. In areas where significant technological progress is possible and can (partly) be delivered through the private sector, or where civil society must be mobilized (e.g. to address the stigma surrounding sexually-transmitted diseases) then pooled financing mechanisms offer tremendous benefits. As described above, only the GFATM was able to support programs targeting socially excluded groups in some countries where other outside partners were unable to work effectively. Similarly, GAVI and the GFATM were able to help mobilize an unprecedented effort to fill technological gaps in the health area. On this basis global financing mechanisms seem particularly indicated for nutrition, smallholder farming, and sanitation (where a multitude of stakeholders must be mobilized around complex sets of issues), as well as education (where, as we argue below, greater use must be made of information and communication technologies).
- **Need to harmonize the international development finance architecture:** In some areas the world not only has too many bilateral but also too many multilateral financing mechanisms. For example, there are many dozen international climate funds (section 5.6). Such arrangements are inefficient and counterproductive. In such cases pooled finance mechanisms can help absorb existing funds and bring greater coherence to the international development finance architecture. By offering governments a ‘single number to call’ well-designed pooled financing mechanisms support national ownership, results focus and coherence.

These criteria are incomplete, and we welcome suggestions for improving them. We note that the International Development Association (IDA) is an extremely successful pooled financing mechanism that eschews and thematic focus or earmarking and does not conform to the above criteria. IDA does

indeed play a very special and important role in the international development finance architecture, as discussed further in section 5.9).

Each mechanism is unique, but key design features might include the following:

- **Independent multilateral organization with multi-stakeholder board:** Pooled financing mechanisms are particularly effective when they are an independent organization with its own voice – instead of dedicated trust funds – and have a link to the UN system (though the mechanisms do not need to be a dedicated UN organization). They should have a multi-stakeholder board comprising donor governments, recipient governments, civil society institutions, and the private sector. It is critical that they start with strong support from several member states.
- **System-based investment windows:** Pooled financing mechanisms should provide systems-based support (e.g. for health or education systems)
- **Demand discovery around clearly defined program windows:** Each pooled financing mechanisms should endeavor to make available macro-economically significant volumes of funding in key areas (e.g. health systems, infectious diseases, etc.). Countries are invited to submit their own proposals that compete for the available funds. Only the best ones that meet stringent technical and operational standards should be funded. Reasons for approving and rejecting proposals should be made explicit so that other countries can learn quickly how to improve their programs. Such ‘demand discovery’ will help drive innovation and results focus in each sector.
- **Independent technical review of country proposals and rigorous M&E:** Like the GFATM and GAVI and to ensure technical integrity, all funding requests to pooled financing mechanisms should be appraised by an independent technical board comprising leading technical experts. Likewise, every program and the pooled financing mechanism itself must be subject to rigorous monitoring and evaluation (M&E) to identify lessons learnt, ensure sound use of public resources, and track results achieved. Outside NGOs can play an important role in promoting transparency and results focus of pooled financing mechanisms.
- **Multi-annual replenishment:** To ensure predictable resource flows, pooled financing mechanisms require multi-annual replenishment cycles, perhaps once every four years. Such replenishment cycles should be coordinated as best as possible with the replenishment rounds for other pooled financing mechanisms.

## **5 Major investment strategies and financing mechanisms for the SDGs**

In this section we apply lessons from the successful partnership around shared health goals to other areas that require sustained public-private investments to achieve the SDGs. Each sub-section discusses the nature of the investment needs and the required resources. We then explore how existing financing mechanisms can be strengthened to achieve the corresponding SDGs. Where major institutional gaps exist we propose how they might be closed. Finally, we identify other components of the partnership (Figure 2) that might require strengthening. Together, these elements address an important component of the ‘Means of Implementation’ for the SDGs that were at the heart of discussions in the OWG.<sup>26</sup>

A comprehensive discussion of every partnership would exceed the scope of this report, so we will focus our discussion on the pooled financing mechanisms and key non-financing challenges.<sup>27</sup> We will not discuss SDG priorities that are not investment driven even if they may also require strengthened global partnerships. Examples for SDG priorities not considered in detail below include gender equality, the special needs of fragile states, or human rights.

We underscore that there cannot be a one-size-fits-all approach across vastly different investment and implementation challenges. Perhaps most importantly, the ability of business to provide financing and drive implementation varies sharply from one area to the next Table 2. We will therefore highlight the specificities of goal-based strategies and investment programs in each area and outline some of the other institutions and mechanisms that will make up an effective global partnership.

### **5.1 Health**

The health sector has made tremendous progress since the adoption of the MDGs, and the core components of an effective global partnership for long-term public-private investments are in place. Public health has clear goals, and the community has conducted effective ‘back-castings’ to understand how long-term health objectives can be met. These back-castings have been translated into operational strategies for strengthening health systems and addressing priority challenges, such as infectious diseases or child mortality. The scientific community has identified clear RDD&D priorities, including new vaccines, treatments, and diagnostic tools that are being pursued across the world – often with critical support from the Gates Foundation. Countries have adopted the Abuja targets committing to devoting at least 15 percent of their budgets to health, which is being implemented across Africa. With the GFATM, GAVI, UNFPA, UNICEF, the recently launched Global Financing Facility (GFF) in support of maternal and newborn health, and several very large bilateral health finance programs, public health also disposes of effective institutions for delivering international public finance. Public health NGOs are active around the world in providing services, holding governments to account, and ensuring high visibility for the public health sector.

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<sup>26</sup> Means of Implementation can be divided into three types of questions that are each addressed in this report and should form a core part of the FSD agenda: (i) overall funding needs (section 3.5), (ii) the nature and structure of public-private investment partnerships to achieve the SDGs (this section 5), and (iii) global rules for investment, trade, intellectual property rules, and so forth that must be made coherent with the objective of achieving the SDGs (see discussion in section 6.4.1).

<sup>27</sup> Some working groups under the SDSN FSD initiative may develop more detailed notes and proposals in individual PPPs for the SDGs or other elements of the FSD agenda.

### **5.1.1 Investment needs to meet the health SDG**

The SDGs proposed by the OWG continue the strong MDG focus on primary healthcare, infectious diseases, reproductive health as well as child, maternal, and newborn health. The SDGs will likely include ambitious outcome targets that operationalize the notion of ‘getting to zero.’ Moreover, the health agenda will be broadened through the inclusion of universal health care, non-communicable diseases, and environmental health.

Achieving this broader agenda and addressing the shortfalls in MDGs implementation – notably on maternal mortality – will require much greater investments. As shown in Table 2 and Annex 1, the investments in the health SDGs are overwhelmingly public in nature and will require an additional \$24 billion in annual investments. The detailed needs assessment conducted by the GFATM for its most recent replenishment round point to similar financing gaps (GFATM 2013). In some areas – notably advance market commitments for vaccines and other medicines – important opportunities exist to leverage public funding with private resources, e.g. through the issuance of bonds.

### **5.1.2 Gaps in resource mobilization and financing mechanisms**

We see four principal financing challenges in the health sector:

#### ***Adequate domestic resource mobilization***

Developing countries – particularly in Africa – have made progress in mobilizing additional domestic resources for health, but between 2010 and 2012 just six of the 43 sub-Saharan African countries for which there is data had met or exceeded the Abuja target on average: Liberia, Malawi, Rwanda, Swaziland, Togo, and Zambia. Fully meeting the Abuja Targets may mobilize more than \$27 billion per year (ONE 2014). Public outlays for health will need to increase, as the evidence shows that private financing through private health insurance and household expenditure is inconsistent with achieving the public health objectives of ending preventable deaths and universal health coverage (Agyepong et al. 2014, Moreno-Serra and Smith 2012, Savedoff 2012).

Here clear standards by the GFATM, GAVI, and other pooled financing mechanisms for health can provide important technical support and incentives for increased domestic resource mobilization. As one example, the GFATM’s new funding model incorporates mandatory counterpart financing requirements for the entire health sector to establish the basis for future sustainability of national disease programs. The Fund also applies ‘willingness-to-pay’ as a qualitative factor for adjusting country funding allocations. These incentives have led to steadily rising domestic contributions towards GFATM-funded programs.

#### ***Merging pooled financing mechanisms to increase efficiency and avoid fragmentation***

Several governments and the World Bank have recently announced the creation of the Global Financing Facility (GFF) in support of maternal and newborn health. We applaud the leadership of the governments and the World Bank in mobilizing more resources and giving more prominence to maternal and newborn health. Yet, as the health sector is moving towards horizontal health system strengthening there is a growing need for harmonized system-based funding.

There is a strong case for reducing fragmentation by merging the major pooled funds – GFATM, GAVI, UNICEF, UNFPA, and the newly created GFF – into a Global Health Fund that would finance primary health systems, with a focus on reproductive, maternal, newborn, and child health, through both vertical and horizontal programs. Such a merger would be difficult – politically, institutionally, and legally – but should nonetheless be explored. And if not a merger per se, these global financing

mechanisms should aim to harmonize their respective grant-making, reporting processes, and evaluations in order to support country programs more coherently.

### ***Sufficient international resources for universal health coverage (UHC) through pooled funding***

Meeting the health goals will require some \$50 billion in ODA of which a significant share should be disbursed through existing pooled financing mechanisms, such as GAVI and the GFATM. At the same time core GFATM financing windows for HIV/AIDS, TB, and malaria urgently require additional resources: During the fourth GFATM replenishment for 2014-2016 the fund received initial commitments of \$12.0 billion compared with a need of at least \$15 billion and probably closer to the \$26 billion funding gap for core (non-systems) needs (GFATM 2013). In the case of health it is demonstrably true that the required resources can be spent effectively, so full replenishments for GAVI and the GFATM and their expansion into health systems must be an integral part of the post-2015 commitment to achieve the health SDGs.

### ***Better integration of vertical programs into health systems***

Vertical programs (e.g. to control malaria or HIV/AIDS) are critical for focusing attention and resources, mobilizing communities, and running tightly-managed campaigns to achieve ambitious objectives. Without such vertical programs progress in vaccinating children, fighting and at times eradicating priority diseases, and improving other health outcomes would have been far slower. Well-designed vertical programs will also strengthen horizontal systems, particularly in reproductive, maternal, child, and newborn health, as demonstrated by the GFATM experience (IERG 2014). Yet most countries now need to focus on strengthening their health systems by striking a balance between ‘vertical’ and ‘horizontal’ approaches, which in turn requires better donor coordination (c.f. the example of Mozambique, Save the Children 2011).

#### ***5.1.3 Non-financing priorities in the health partnership***

Public health has fully embraced modern technologies and research in the search for better tools and treatments. This work can be further strengthened, perhaps with a lead role for UNITAID. We also see great opportunities in creatively rethinking health service delivery models. For example, community health workers can play a much greater role in the delivery of health and ancillary services, particularly in low-income countries. Moreover, the dramatic advances in information and communication technologies have yet to be exploited fully in health systems. Great opportunities exist for improving access to and the quality of healthcare through m-health and other uses of information and communication technologies (ICTs) – including in combination with community health workers, as illustrated by the 1M Community Health Worker Campaign.<sup>28</sup>

## ***5.2 Learning and Education: The need for a Global Fund for Education***

Substantial progress has been made in expanding primary school enrolment under the MDGs, but overall the sector has fared significantly less well than public health. Between 1999 and 2011 the number of children out of primary school fell by 45 million, yet 57 million remain out of primary school (UNESCO 2013b). The magnitude of the problem will increase with rapidly growing cohorts of young people. For example, in sub-Saharan Africa the population of children between the ages of 5 and 14 years is expected to grow 45 percent between 2010 and 2030 (Rose et al. 2013).

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<sup>28</sup> See <http://1millionhealthworkers.org/>

Moreover, the world faces a major learning crisis since learning outcomes are far too weak to empower youth to become productive members of a globalized economy. Worldwide 250 million children cannot read, write or count – often despite having spent four years in school (UNESCO 2012a). While primary school enrolment has gone up, there has been too little change in secondary schooling. Too few children transition to secondary schools, where completion rates are even lower (UNESCO 2013a). In many countries girls face tremendous barriers in accessing high-quality education with adverse effects on their well-being and that of their future children (Chavan et al. 2014).

At first sight it may seem surprising that health has fared better than education since delivering health care is more expensive and likely more complex than education. Yet if one looks at the components of successful partnership (section 4.3) it becomes clear that the education sector not only lacks resources, but its back-castings, advocacy community, M&E, and other critical elements of a successful partnership do not yet operate at the scale, urgency, and rigor needed to deliver the necessary results.

There is no reason why improvements in learning outcomes should continue to lag behind those of public health. And given the critical importance of education for economic development – particularly in light of the rapid demographic growth in many low-income countries, making the international education partnership work has to be a top priority under the SDGs. Based on the lessons from health, a strengthened global education partnership will require financing at scale delivered through pooled financing mechanisms that promote ‘demand discovery’ and subject all programs to rigorous technical appraisal and M&E.

#### **5.2.1 Investment needs for education SDG and adequate learning outcomes**

The SDGs proposed by the OWG significantly expand the scope of the education agenda to include early childhood development, secondary schooling and transition to work – all with a stronger focus on learning outcomes. This broader agenda will be more complex to deliver than the education MDG, and it will require vastly greater resources. As summarized in Table 2 and described in Annex 1, achieving the SDG education outcomes will require substantial incremental public financing or grants from private donors. Just as in health, private financing opportunities in education are limited for meeting basic needs. Privately financed schools can offer higher-quality education to those households that can afford it, but the evidence is clear that user fees bar the poor – particularly young girls – from a quality education (Bentaouet 2006 as cited in Greenhill and Ali 2013, UNESCO 2013a).

Incremental investments for primary and lower secondary education are estimated at some \$38 billion of which half might need to be provided as ODA (UNESCO 2013a). Other investment priorities in education include early childhood development, secondary education, and the transition to work. UNESCO is revising the resource estimates for this broader education agenda and will publish results in early 2015. Clearly, though, the sector requires a major increase in overall public financing.

#### **5.2.2 Gaps in resource mobilization and financing mechanisms**

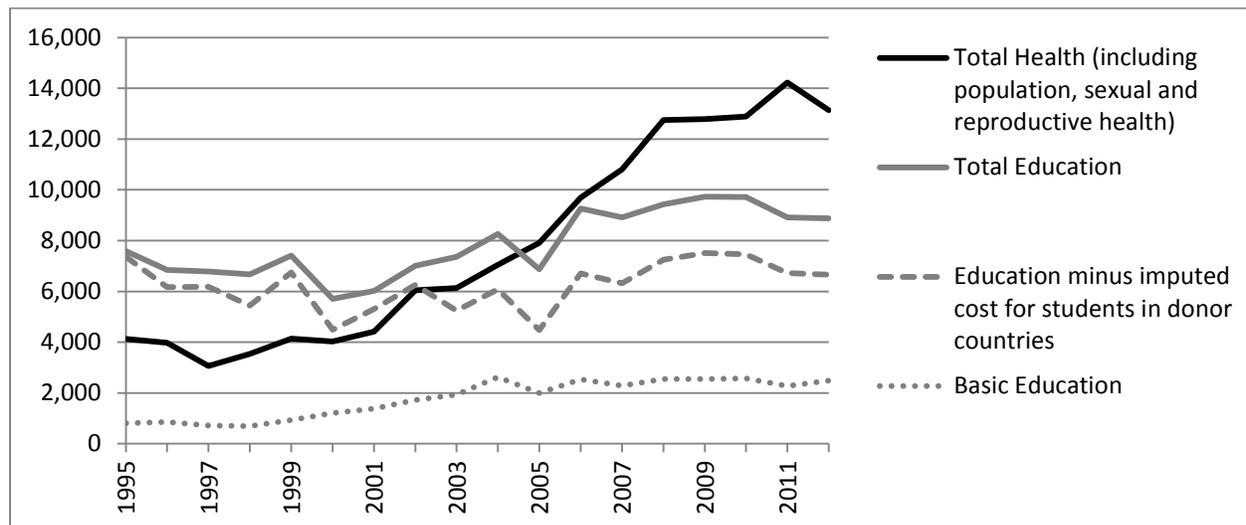
To date the education sector is overwhelmingly financed through domestic resource mobilization. No intergovernmental agreement exists on minimum resource mobilization standards for education, but several standards have been proposed and are widely used. The World Bank has proposed that governments should spend at least 20 percent of their budget on education (Bruns 2003). UNESCO has suggested that governments spend 2-3 percent of GDP on basic education (Greenhill and Ali 2013). The inclusion of secondary and tertiary education as well as adult literacy will likely require some 6 percent of GDP (Rose et al. 2013). Currently eight out of 33 African countries for which data is available meet this benchmark (ONE 2014). Meeting this benchmark would make an important contribution towards

financing education systems, but care must be given to avoid crowding out public investments in other areas. Another important priority for the education sector is to increase the efficiency of government spending on education (section 6.1).

The donor fundraising for education during the MDGs was more a failure than a success, as illustrated in Figure 3, which compares the trajectories for DAC funding of education and health. Education spending has lagged far behind health. The contrast is even starker when one subtracts the imputed cost of students from developing countries studying in DAC member countries, i.e. funds that never leave the donor country and do not benefit the developing country directly:<sup>29</sup> ODA to education has flat lined in absolute terms since the mid-1990s even though the total volume of ODA has increased by two-thirds since 1995. In addition, ODA to education includes large proportions of in-donor expenditures compared with other sectors, as well as high shares of technical assistance and correspondingly lower shares of direct grants or project aid. This stands in sharp contrast to the composition of ODA for health, where in-country expenditures dominate (Development Initiatives 2013).<sup>30</sup>

Aid to basic education increased through to 2004, but has since stayed steady even though primary education was a headline priority. The MDGs only started to filter through into implementation after 2004/5 (McArthur 2013), which shows that they were not successful in mobilizing much-needed external resources for education.

**Figure 3: Total ODA from all OECD DAC donors to education and health (in constant 2012 \$ million)**



Source: OECD DAC database

In addition to closing the education financing gap described above, the high fragmentation of aid and the lack of effective coordination mechanisms must be overcome. International aid in the education

<sup>29</sup> We do not subtract the cost of scholarships provided by DAC members to students from developing countries since these expenditures provide more direct benefits to developing countries even though they are overwhelmingly spent in the donor country. The cost of such scholarships amounted to some \$1.2 billion in 2012.

<sup>30</sup> As underscored further below, technical assistance can play a very important and positive role towards achieving the SDGs as a complement to increased direct investments. There is nothing wrong with providing high levels of technical assistance if adequate funding is available for capital and recurrent expenditures of education systems.

sector is highly fragmented with large numbers of donors providing ‘non-significant ODA’ as defined by the OECD (2011). Transaction costs are high and many countries in Africa have to coordinate with more than 20 donors, as illustrated by the example of Kenya where 82 percent of country programmable aid was disbursed by 6 donors. The remaining 18 percent was disbursed by 16 other donors, of which 6 were ‘non-significant’ (Rose et al. 2013).

Six major multilateral financing institutions operate in the education sector: African Development Bank, Asian Development Bank, European Commission, Global Partnership for Education (GPE), and UNICEF. Of these the World Bank, European Commission, and the two Regional Development Banks provide the most significant volume of resources. Yet, the share of multilateral aid in education is falling with all five multilateral donors accounting for a mere 26 percent of total ODA flows. Country programmable aid disbursed by global funds in 2011 was 10 times larger in the health sector, at \$3.3 billion, than in education, at \$385 million (Rose et al. 2013).

Though not by itself a pooled fund, the GPE has improved coordination among bilateral and multilateral donors in the education sector. It is a highly meritorious initiative, but it has not closed the financing gap and is not likely to do so in its current framework. In the recent GPE replenishment, the vast bulk of funds were from the developing countries themselves, not from donors. That is fine as a measure of commitment from the developing countries themselves, but is not adequate from the point of view of needed financing. The GPE has not succeeded in meeting even its very limited financial targets, raising just \$1.5 billion compared with a target of \$2.5 billion for the 2011 replenishment, and so far, just \$2.1 billion out of a targeted \$3.5 billion for its 2015-2018 replenishment. This corresponds to \$525 million per year compared with some \$4 billion pledged annually to the GFATM alone. Both the GPE replenishment targets and pledged sums are very small compared with UNESCO (2013a) analysis suggesting that an additional \$19 billion will be required in ODA for primary and lower-secondary education alone.

The GPE should therefore be transformed into the Global Fund for Education (GFE) to become the educational equivalent of the GFATM. It would provide large-scale co-financing for national education programs using a competitive process and independent technical vetting of the proposals along the lines of the GFATM. Its funding could be distributed across four financing windows: (i) Primary Education, (ii) Early Childhood Development (ECD), (iii) Secondary Education and School-to-Work Programs, and (iv) Adult Literacy. In addition, the GFE should include a facility to finance RDD&D for ICT for education and other innovations that can transform the way in which education is delivered (see below).

A successful GFE would have a multi-stakeholder board including donor governments, recipient governments, civil society institutions, and business. It would be part of the multilateral system and pursue multi-annual replenishment rounds, perhaps using a 3-4 year cycle. We recommend that it follow the GFATM example and appraise funding requests through an independent technical board comprising leading education experts. Likewise, every program must be subject to rigorous monitoring and evaluation (M&E) to identify lessons learnt, ensure sound use of public resources, and track results achieved. We note that recent developments at the GPE under its new funding model already go in this direction so that the GPE provides a strong foundation for a GFE.

### **5.2.3 Non-financing priorities for the global education partnership**

Any dispassionate comparison of the health and education sectors must conclude that the latter lacks the organization, goal-focus, and rigor of health. While health sector officials – even in some of the poorest countries – implement goal-based strategies with budgets, clear responsibilities, milestones,

M&E, etc., education officials typically lack such operational scaling-up strategies. Resource mobilization for education is less well organized than for health and lacks the breadth and rigor of the evidence that health officials can marshal in support of their requests for additional funding.

The good news, however, is that a decade ago many parts of the health sector – particularly the communities working on major infectious diseases – similarly lacked adequate organization, goal focus, and rigor. Sections 3.5 and 4.3 show how the GFATM and GAVI played a central role in organizing the health sector. Clearly, education needs a similar boost through a pooled financing mechanism. Four additional priority gaps in the global education partnership are highlighted below:

***A data revolution for education - improved goals, performance metrics, and M&E***

In contrast to health, education still lacks an effective and comprehensive set of comparable metrics for outcomes and for managing education systems. Despite improvements under the MDGs and Education for All, education data remain patchy, particularly in low-income countries. Countries' administrative data systems that provide the bulk of education data are often weak and sometimes politicized. As a result M&E in education is not as pervasive and rigorous as in health. There is too little information about the quality of education, the qualifications of teachers, the uses of new ICTs in the classroom, and the quality of education outcomes. This makes it hard to compare programs and hold governments to account. It also makes it difficult to advocate for more resources. Any push for education must be accompanied by better metrics and data on implementation. A 'data revolution' is both required and imminently feasible (IEAG 2014; section 5.6).

As one example, the Learning Metrics Task Force convened by the Brookings Institution<sup>31</sup> has yet to achieve a consensus on how to design effective learning outcome metrics, though a proposal for an International Platform for Assessing Learning is under development. Many non-OECD countries resist using the PISA or other comparable standards<sup>32</sup> as a metric, so a gap still exists on how to measure and benchmark the performance of education systems within and across countries. At the country level the situation is improving slowly. Virtually all developing countries now have some form of national learning assessment system in place, but the lack of comparability makes it hard to advocate for the education sector at a global level.

***Better (funded) advocacy***

Even though a large number of non-governmental organizations (NGOs) work in the education sector, but their advocacy is not as visible as the advocacy for health. Three factors explain the strength of advocacy in health that can and need to be addressed in the education sectors. First, the Gates Foundation and others have systematically provided financial support for data-driven advocacy in the health sector, but the education sector lacks similar anchor donors for advocacy. Given the relatively modest sums involved, one or more large philanthropists could easily fill this gap by providing flexible funding that improved advocacy requires. The benefits and visibility from such strengthening the 'ecosystem' for education advocacy would be tremendous. Second, the education sector currently lacks the same breadth and depth of data, but this gap can be overcome through investments in improved metrics. Third, health advocacy has benefitted from the remarkable solidarity among HIV/AIDS positive people in developed and developing countries. This solidarity explains in parts the tremendous mobilization of advocacy NGOs in support of the GFATM replenishment rounds. Perhaps a similarly

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<sup>31</sup> See <http://www.brookings.edu/about/centers/universal-education/learning-metrics-task-force-2>.

<sup>32</sup> See <http://www.oecd.org/pisa/>.

effective narrative can be built around the primacy of education for realizing the rights of children, promoting gender equality, and achieving economic development.

### ***Rigorous back-casting***

The Education for All Goals and the GPE have encouraged many developing countries to develop goal-based back-castings in education. There has been substantial progress, but just like in health a decade ago, many of these long-term education strategies lack the operational specificity and rigor that are required for successful scaling up. An adequately capitalized GFE that can make available macro-economically significant volumes of financing for education strategies in IDA-eligible countries will exercise generate the same push for better strategies, as the GFATM did after its creation. Like the GFATM, the Global Fund for Education and other education organizations, such as UNESCO, should develop rigorous periodic needs assessments for the education sectors (c.f. GFATM 2013), which can provide medium-term guidance to the sector as a whole.

### ***Greater investments in RDD&D for education and new delivery models***

The education sector faces major structural challenges. These include rising costs and difficulties in training and retaining quality teachers who increasingly have job opportunities in the urban centers. With the returns to education rising with the number of years spent in full-time education, many governments cannot afford the needed investments, particularly in secondary school education. At the same time many public school systems face severe management and performance challenges.

Against this backdrop it comes as a surprise that the education sector is not investing more heavily in how ICT and other technologies can improve the quality education while reducing costs. The large ICT companies have not yet entered into the kind of PPPs that were developed by the health sector soon after the adoption of the MDGs. Much innovation is happening in high-income countries, but this is not feeding through into developing countries. Expanded investments in rigorous RDD&D for educational technologies along the full education cycle should be a central priority for a post-2015 development agenda. A well-resourced Global Fund for Education could provide targeted support to innovative approaches and then help spread lessons to other countries.

## ***5.3 Sustainable agriculture, food systems, and improved nutrition***

The SDGs promise to give the priority to sustainable food systems – including agriculture – and nutrition that were lacking under the MDGs. Several SDGs proposed by the OWG address sustainable agriculture and other food systems, such as fisheries. The draft goals also provide much greater specificity on nutrition outcomes.

### ***5.3.1 Investment needs for SDGs for sustainable agriculture, food systems, and nutrition***

The investment needs for food systems and nutrition are complex and multi-faceted. Overall investment needs are dominated by private financing and amount to an investment gap of some \$260 billion per year (Table 2). Yet, substantial increases in public investments will also be required, particularly towards meeting the estimated \$46 billion financing gap for ensuring food security. For this reason it is worth reviewing investment needs in some detail before turning to the question how a global partnership in these areas can be strengthened.

According to FAO some 805 million people are currently classified as chronically hungry, down by more than 100 million over the last decade, and 209 million lower than in 1990–92. The global prevalence of hunger has decreased from 18.7 to 11.3 percent since 1990-92. In developing countries hunger has declined from 23.4 to 13.5 percent over the same period. This progress has prompted FAO to declare

that MDG target 1c is ‘within reach’ (FAO 2014b). However, hunger remains a major concern in South Asia and sub-Saharan Africa where over 60 percent of the hungry live.

The situation is more serious and complicated than suggested by these headline numbers. An additional 1 billion or more people have serious micronutrient deficiencies, including iron, Vitamin A, and iodine (Swaminathan 2014). Some 161 million children under 5 years of age are stunted (UNICEF, WHO, World Bank 2013), a condition contributes to devastating under-development of the brain and other organs and to chronic diseases later in life.

Under-nutrition is a complex biological and social phenomenon that is about far more than quantity of food intake. It is also about quality of the diet; reductions in chronic infections through improved sanitation, hygiene, and functioning health systems; gender equality; and the ability to make food choices. Therefore, the fight against hunger involves: (i) adequate food intake including through boosting smallholder yields, (ii) adequate micronutrient intake, (iii) safe water, sanitation and hygiene (Harris 2014), (iv) an effective health system (e.g. to manage diarrhea and deworming); (v) gender equality, since many farmers are women; and (vi) hygienic food storage and preparation (Bhutta et al. 2013).

Another dimension of the food security challenge is that food production systems (agriculture, animal husbandry including aquaculture, and fishing) have profound impacts on the environment. Agriculture and livestock account for one third of global greenhouse gas emissions, which are driving climate change. Agricultural production, including livestock, is the biggest source of reactive nitrogen in the biosphere, which is leading to widespread eutrophication in freshwater and coastal regions including a rapidly growing number of dead zones. Agriculture and livestock are also the biggest drivers of land-use change, including deforestation and biodiversity loss, particularly in the tropics. Global marine fisheries catches have been declining since 1996 due to overfishing. One third of global fisheries are overexploited (FAO 2014). Finally, agriculture accounts for some 70 percent of human freshwater withdrawals and is responsible for unsustainable exploitation of aquifers and freshwater ecosystems around the world (UNESCO and UN Water 2014). Taken together, food production systems probably have a greater impact on the environment than any other sector of human activity, including the energy system.

Current agricultural, livestock, and fishing practices are unsustainable, particularly in light of the fact that the world’s demand for food is growing rapidly owing to continuing population growth and a rising demand for protein-rich diets, which requires more agricultural production per unit of energy and water consumed by humans. This presents the world with a conundrum, namely how the growing demand for food can be squared with the imperative of making agriculture, livestock, and fisheries sustainable. For a detailed description of smart and environmentally sustainable intensification of agriculture, see Dobermann and Nelson (2013).

A final major challenge of sustainable agriculture, livestock and fisheries consists in making the food production system resilient to climate change. Climate change already has major adverse effects on food production in most countries – developed and developing countries alike (IPCC 2014a). For example, the 2014 National Climate Assessment Report for the United States (Melillo et al. 2014) highlights the massive impact climate change already has on agriculture across the country. The challenges in lower-latitude countries are projected to be even starker and will require major adaptation measures.

Adaptation measures for climate change will include drought- and flood-resistant varieties of the major food crops; crop varieties that tolerate temperature spikes or salinity; massive efficiency increases in irrigation and water use for agriculture; accompanying investments in water management infrastructure; and farming techniques that are resilient to climate change. Improved technologies, including ICT, will be central to any strategy for adaptation. For a global partnership to promote sustainable agriculture, the need for long-term investments in RDD&D for improved crop varieties and farming practices stands out.

Each component of addressing the challenges of sustainable food production systems – productivity increases for smallholder farmers; improved nutrition outcomes; lowering their environmental impact; and adapting to climate change – is well understood, though difficult to deliver. The knowledge exists to feed the world in a sustainable way. Yet, the world is falling short of making the necessary public-private investments at scale and with the required determination and urgency. The global partnership for sustainable agriculture, food systems, and improved nutrition is not working adequately.

### **5.3.2 Gaps in resource mobilization and financing mechanisms**

As can be seen from this review of investment needs, food systems and nutrition span a very broad range of investment needs. They require investments discussed in other parts of this section, such as infrastructure (section 5.8), biodiversity and ecosystem services management (section 5.4), water and sanitation (section 5.5), as well as incremental investments in climate change mitigation and adaptation that may be co-financed by the Green Climate Fund (section 5.5).

The bulk of agriculture investments promote productivity and sustainability in commercial farming operations. These investment needs are predominantly private in nature and rely on adequate public policy frameworks and incentives for sustainable agriculture. A number of initiatives exist to strengthen market-based solutions for agricultural value chains. They include Grow Africa promoted under the New Partnership for Africa's Development (NEPAD), Grow Asia promoted by the World Economic Forum, the Alliance for a Green Revolution in Africa (AGRA) initiated by the Rockefeller and Gates foundations. Many major companies, such as Unilever, Wal-Mart and Yara have made important commitments to support smallholder farmers and sustainable food systems through their food systems.

To meet the SDGs related to food systems and nutrition three core investment needs require substantial public co-financing: (i) greater domestic resource mobilization; (ii) international investments to boost smallholder yields; (iii) international investments to improve nutrition outcomes, particularly micro-nutrition; and (iv) RDD&D for improved crop varieties as well as techniques for farming, livestock/aquaculture, and fisheries management to reduce the environmental impact of the food system and promote adaptation to climate change.

#### **Domestic resource mobilization**

As emphasized throughout this report, official development assistance should be directed to help the poorest countries close their financing gaps, after they themselves have mobilized domestic resources. In 2003 African heads of state and government signed the Maputo declaration in which they committed to allocating 10 percent of their national budgets to agriculture as part of the Comprehensive Africa Agriculture Development Programme (CAADP). According to IFPRI some 13 countries across Africa had met the target in 2012 (Benin and Yu 2012) – a significant increase since 2003, but still short of the financing needed for the sector. Countries in Africa and elsewhere must redouble their efforts to allocate more domestic resources to agriculture.

However, domestic public and available private resources are not sufficient to tackle the deep challenges of boosting productivity and resilience for smallholder farmers, subsistence herders, and small-scale fishermen. ODA to agriculture has picked up a following the food crisis in 2006, but it remains low compared to the levels spent in the mid-1980s (OECD 2010). Similarly public finance for agricultural RDD&D remains inadequate. Nor do the existing programs complement the agriculture programs with quality efforts to meet the challenges of nutrition. Some \$46 billion may be required in incremental expenditures (Annex 1) of which a substantial share will need to come in the form of ODA.

### ***A Global Pooled Financing Mechanism for Smallholder Agriculture***

We see a glaring underinvestment in smallholder agriculture. There are more than 500 million small family-run farms worldwide. These small-scale operations provide income, food and employment for more than 2 billion people, but they are often isolated from essential advisory services, credit facilities and markets, all of which are essential to achieve rural transformation. The International Fund for Agricultural Development (IFAD) has been supporting smallholder agriculture for more than 3 decades. IFAD, in partnership with others, including FAO, has consistently demonstrated the potential to raise smallholder production and incomes. The challenge remains to take this experience to scale to reach communities and households who continue to experience poverty, hunger and malnutrition, and are most vulnerable to impacts of climate change.

Following the Global Food Crisis of 2006-2008, the Global Agriculture and Food Security Program (GAFSP) was established as a multilateral financing mechanism to assist in the implementation of pledges made by the 2009 G8 in L'Aquila and G20 in Pittsburgh.<sup>33</sup> The objective was to improve incomes and food and nutrition security in low-income countries by boosting agricultural productivity. Hosted by the World Bank, GAFSP was structured to co-finance underfunded, country-led agricultural strategies. Since its inception in 2010, GAFSP has mobilized \$1.2 billion (of which \$979 million through the Public Sector Window and \$238 million through the Private Sector Window). GAFSP expects to benefit 13 million smallholder farmers and their families. GAFSP notes that in every Call for Proposals for the Public Sector Window, the demand for funding far outweighed the available resources. This means that many deserving, technically sound proposals could not be supported (GAFSP 2014).

The first three years of GAFSP have created important lessons and successes, but the current institutional arrangement does not provide adequate visibility and financing for smallholder farming. Thanks to GAFSP and IFAD we know that effective support to smallholder agriculture requires public-private partnerships that combine the provision of essential public goods like rural infrastructure, advisory services, and research, with private sector driven investments in input supply, marketing, and processing. Blended public-private investments will create important synergies that would unleash the potential of smallholder agriculture.

Building on the initial experience of GAFSP, we propose the establishment of a Global Financing Mechanism for Smallholder Agriculture and Artisanal Fisheries (tentatively the 'Smallholder Fund'). Like GAFSP, the Smallholder Fund would be demand driven, supporting country-owned national strategies and projects. Unlike GAFSP, we would encourage development of blended public-private initiatives that would lead to smallholder transformation. Explicit emphasis would be placed on supporting proposals that incorporated climate-smart and nutrition-sensitive agriculture, livestock and fisheries systems.

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<sup>33</sup> See Ad Hoc Advisory Group to the Madrid Conference on Food Security 2009 for an analysis of the financing challenges for smallholder food production and the rationale for creating GAFSP.

As part of the 2015 FSD Conference, governments should resolve to establish the Smallholder Fund as a mechanism for mobilizing and disbursing funds for smallholder agriculture, including livestock and fisheries. The Smallholder Fund could be based at IFAD in Rome and should be modeled after the design of GAFSP and the GFATM, including the principle of competitive ‘demand discovery’ whereby countries are invited to submit national investment strategies that are financed if an independent technical panel approves them. Rather than establish separate Public and Private Sector windows, the Fund would blend concessional finance and private investment with the common objective of making smallholder agriculture more productive and sustainable, while improving nutrition. These efforts would complement direct nutrition investments and other nutrition-sensitive investments (see below).

### **Nutrition**

The draft SDGs rightly underscore the importance of improving nutrition and reducing stunting among children. As emphasized above, nutrition interventions are complex and require integrated approaches covering health, sanitation, agriculture, education, and other areas. To this end the recently formed Scaling-Up Nutrition (SUN) Movement brings together governments, civil society, the United Nations, donors, businesses and scientists to improve nutrition outcomes through nationally-owned and -led plans. Nutrition interventions promoted by the movement include exclusive breastfeeding, fortification of foods, micronutrient supplementation, and treatment of acute malnutrition. Nutrition-sensitive interventions include investments in agriculture, clean water and sanitation, education and employment, improved health care, and women’s empowerment.<sup>34</sup>

SUN is making an important contribution to nutrition outcomes, but it is not a financing mechanism. Just like smallholder farming or other SDG priorities, nutrition does need a clearer financing architecture that can provide funding at scale and promote goal-based investment strategies. More work is required to identify the appropriate financing architecture for nutrition and whether a dedicated nutrition mechanism is warranted. Apart from creating a new mechanism, three options exist for including dedicated nutrition windows: (i) under a Global Fund for Health building on today’s GFATM (section 5.1); (ii) as part of the new Smallholder Fund described above; or – much more tentatively – (iii) under an enhanced support window for sanitation (section 5.5).

Since the vast majority of interventions required for improving nutrition fall into the health sector (Bhutta et al. 2013) it would seem that option (i) might be the most effective unless a dedicated institution is needed. It would have the added benefit of being relatively easy to implement, as the GFATM already has a successful track record in and infrastructure for disbursing large-scale results-based funding. SUN could support such a mechanism in the same way as the Roll-Back Malaria Partnership supports developing countries in preparing and implementing malaria control strategies for submission to the GFATM. We call on the nutrition community to consider these and other available options for an effective financing structure in support of nutrition outcomes.

### ***RDD&D for productive, sustainable and resilient food systems***

The world needs to increase investments in agricultural RDD&D, including in improved seeds and germplasm, farming techniques, ICT-based mechanisms for agricultural extension services, and adaptation strategies. Particularly in developing countries such research requires overwhelmingly public funding - IFPRI estimates that only 6 percent of investment in agricultural research in developing

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<sup>34</sup> See <http://scalingupnutrition.org>

countries is from private sources, compared with 55 percent in developed nations (Beintema et al. 2012). Much of this research can and should be delivered through a strengthened and better-financed Consultative Group on International Agricultural Research (CGIAR). As an important complement to the Smallholder Fund, we propose an intensification of effort by the CGIAR Consortium to at least \$2 billion/year maintained in real terms.

### **5.3.3 Non-financing priorities for agriculture/food systems and nutrition**

As is the case with other public-private investment partnerships, several non-financing priorities must be addressed if the SDGs related to sustainable agriculture and nutrition are to be met. Without aiming to be comprehensive we identify two important priorities:

#### ***Clear targets and improved metrics***

The MDGs pay too little attention to food systems and the need for sustainable intensification of agriculture, animal husbandry, and fishing. The SDGs therefore need to provide clear targets that can rally the respective communities. As is the case with health, such targets must be underpinned by effective metrics and indicators. For example, the world needs improved metrics and data for nutrition (particularly micro-nutrition), food loss, efficiency of fertilizer use, nitrogen and phosphorous flows, water efficiency and use. Since agriculture is predominantly a private-sector undertaking, much data also rests with the private sector. The ‘data revolution’ (IEAG 2014) for agriculture should therefore draw extensively on such unofficial data and explore the potential of modern technologies – particularly remote sensing and mobile broadband – to improve metrics and data for agriculture and nutrition. These opportunities are discussed in more detail in SDSN (2014), which outlines preliminary options for filling current gaps.

The experience of the global health partnership under the MDGs (section 3.5) shows that clear targets and metrics are indispensable for goal-based investment strategies. The headline metrics will also help the private sector identify business opportunities and assess their contribution towards making food production systems sustainable.

#### ***Back-casting and road-mapping***

Today virtually all food production systems are ‘unsustainable.’ Some produce not enough high-quality food. Others use too much water, emit too much greenhouse gases, release too many nutrients, suffer massive land degradation, encroach on critical ecosystems, pollute coastal ecosystems, or deplete fisheries. Yet it is much harder to define what would constitute a ‘sustainable food production system.’ For this reason, countries need to define what sustainable agriculture, animal husbandry, and fisheries might mean within their local context, taking into account factors such as agro-ecological zones and farming systems, water availability, greenhouse gas emissions, local food preferences, available fish stocks, and opportunities for trading food internationally.

As reviewed in section 4.3, goal-based investment strategies require back-castings to translate the long-term transformations into operational strategies. Even high-income and upper-middle-income countries tend not to have long-term pathways for transitioning towards sustainable food production systems even though their current practices are unsustainable (Dobermann and Nelson 2013). The SDSN is exploring opportunities for supporting such long-term back-castings in a number of countries drawing on lessons from its work on long-term Deep Decarbonization Pathways (IDDRI and SDSN 2014).

Long-term back-castings can then inform roadmaps for the development of key technologies, including farming practices. Such back-castings will create an effective interface for key industries, including food

companies, fertilizer companies, seed and germplasm producers, and the fishing industry. Many of these discussions could be coordinated by FAO or other international organizations following the successful example of technology roadmaps for energy pioneered by the IEA (2014a).

#### **5.4 Ecosystem services**

Healthy and well-managed ecosystems, together with a stable climate, are critical for long-term sustainable development. Ecosystems provide a range of services to people and societies, including provisioning services such as food, water, timber, and fiber; regulating services that affect climate, floods, disease, wastes, and water quality; cultural services that provide recreational, aesthetic, and spiritual benefits; and supporting services such as soil formation, photosynthesis, and nutrient cycling. As noted for example by the Millennium Ecosystem Assessment (2005), Rockström et al. (2009), and Cardinale et al. (2012), healthy ecosystems and a stable climate provide a vital planetary life support system. Functioning ecosystem services can also enhance social inclusion by meeting the needs of the poor and vulnerable and by reducing the risk of conflict and insecurity.

The degradation of ecosystem services has intensified since the landmark 1992 Rio Earth Summit – in spite of an unprecedented improvement in our scientific understanding of ecosystems and biodiversity, the inclusion of environmental sustainability in the MDGs, and the ratification of the Convention on Biological Diversity (CBD). Environmental pressures are increasing across a broad spectrum, including biodiversity loss, climate change, deforestation, degradation of international water bodies, land degradation, and chemical pollution. The Millennium Ecosystem Assessment found that some 60 percent of ecosystem services globally have been degraded in the past 50 years.

Costanza et al. (2014) try to estimate the economic value of ecosystem services and arrive at the extremely high figure of some \$125 trillion per year (in 2007 US\$) – almost twice world GDP. TEEB (2010) describes how ecosystem services can be valued. Needless to say, these numbers have been queried. Yet, whatever the ‘true’ numbers are, a clear consensus exists that ecosystems and their services are of critical value to humanity and are being degraded at rapid rates. Yet, the world is not acting with the urgency and determination needed.

These challenges are highlighted in goals 14 and 15 proposed by the OWG (2014), which in turn are broadly consistent with the Aichi Targets for biodiversity protection:

- Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development.
- Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

Several action plans have been adopted (e.g. CBD 2012a), but to date the world has failed to ‘bend the needle’ on the degradation of ecosystems and the loss of biodiversity, as highlighted in the recent Global Biodiversity Outlook-4 (CBD 2014), which summarizes the progress made towards achieving the Aichi biodiversity targets.

#### **5.4.1 Investment needs to meet the biodiversity and ecosystem SDGs**

Investments to preserve and manage biodiversity and ecosystems are highly complex. They cover diverse sets of systems (forests, oceans, wetlands, urban biodiversity, etc.), geographic scales (local, national, regional, and global goods), a continuum of public and private investments (e.g. to sustainably manage freshwater systems in agricultural zones), and highly context-specific governance arrangements that condition feasible policy responses (e.g. land tenure systems, federal/central governance models). Finally, improving the management of critical ecosystems cannot be the responsibility of a single line ministry and requires changes across a broad range of government ministries and industries. If one were to look for some of the most complex investment challenges, then strengthening ecosystems and preserving biodiversity – the core mandate of the Global Environment Facility (GEF) – would be an excellent place to start.

Several needs assessments have been conducted for the CBD, as reviewed in Annex 1. The results of these needs assessments are framed around the broad Aichi Biodiversity Targets and not broken down by investment areas, operating/capital expenditure, private or public investments. The SDSN is working with several organizations to better understand available needs assessments and integrate the results into a revised Table 2. Until then the headline number of \$135 billion (Annex 1) serves as a placeholder.

#### **5.4.2 Resource gaps and areas for strengthening the Global Environment Facility**

A significant share of investments in ecosystem services and biodiversity protection can and ought to come from private sources, but substantial public finance from domestic and international sources will be required. This in turn will require a significant strengthening of the Global Environment Facility (GEF), the primary pooled financing mechanism for biodiversity management adopted at the 1992 Rio Conference.

We do not have precise estimates of the level of public financing required for biodiversity and ecosystem services, but it is clear that the GEF is sub-scale at annual commitments for the sixth replenishment of around of \$1.1 billion.<sup>35</sup> We note that even a strengthened GEF will only disburse a modest share of overall public-private investment needs, and that the bulk of public expenditure might need to come from domestic resources. However, as discussed in section 4.3, effective public-private investment partnerships do depend in parts on well-organized and managed flows of international public finance. This in turn makes a strong and effective GEF – working with governments, business, and civil society – central to success.

Even the imperfect information available today shows that the GEF and other mechanisms require substantially more resources than are currently available. However, the important question of how an effective investment response can be organized must also be posed. Clearly, the lessons of the GFATM and GAVI in the health sector cannot be applied one-for-one to biodiversity and ecosystem services, but the experience in health raises a number of important organizational questions that should be considered carefully for a goal-based investment partnership on ecosystem services and biodiversity and the central role that the GEF occupies.

In the past, the GEF has financed relatively small-scale projects across a broad spectrum of activities instead of providing macro-economically significant funding, as done in health by the GFATM. This has

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<sup>35</sup> Some 30 countries pledged \$4.43 billion for the period 2014-2018 (GEF 2014a), corresponding to some \$1.1 billion per year.

impeded the close collaboration with other ministries – including ministries of finance – that was so successful in health. Overall, economies of scale and scope were limited. The GEF has not had the financial resources and funding model available to drive learning and experimentation on how to scale up operational strategies. In spite of the excellent work done by the GEF and a large number of highly successful projects, the world still lacks a clear understanding of how investments in biodiversity protection and ecosystem management can be applied at scale.

In contrast, the GFATM's broad funding windows for malaria, TB, and HIV/AIDS, under which countries can apply for funding, have facilitating learning and scaling up. While no two malaria control strategies are the same, they are highly comparable across countries, and successful lessons from one can be applied to other strategies. Over time, the GFATM has helped build the operational knowledge of how to control malaria, TB, and HIV/AIDS at national scale – both among health ministries and other members of the Country Coordinating Mechanism as well as GFATM staff and members of the Technical Review Panel.

A central question for all pooled financing mechanisms, such as the GEF, is how they can promote the bottom-up experimentation, learning, knowledge transfer, and subsequent promulgation of best practices that is needed to solve the complex public-private investment challenges the world confronts (sections 3.5 and 4.3). Recognizing the need to promote scaled-up investments and impacts, facilitate private co-financing, and ensure effective learning and results management, the GEF leadership used the recently completed 6th replenishment to emphasize a sharper focus on addressing the underlying drivers of environmental degradation, and on supporting integrated, systemic solutions to address common drivers of environmental degradation.

It seems clear that an effective global response to the biodiversity and ecosystem challenge requires an effective GEF. This in turn requires careful answers to questions on how the GEF funding model should operate to strengthen bottom-up experimentation and scaling up; how the program appraisal can be organized along technical lines to promote learning and knowledge transfer; how M&E can be strengthened and data-driven advocacy be empowered; how non-government stakeholders, such as civil society and business, can effectively contribute to the design, implementation, and assessment of GEF-funded programs; and so forth. Perhaps the process leading up to FSD provides an opportunity to discuss these issues in detail and propose recommendations for strengthening the GEF further.

#### ***5.4.3 Non-financing priorities for biodiversity and ecosystem services***

The above discussion on the role of the GEF has already touched on several non-financing priorities for a goal-based partnership, such as the critical role M&E, data driven advocacy, and effective interfaces for civil society and the private sector. These elements are critical for success and deserve the same attention as the headline need for more resources. In this preliminary overview of the challenges we highlight four additional priority areas:

##### ***Improved science and clear metrics for success***

The understanding of functioning of critical biomes and ecosystems has improved significantly in recent decades, but three major knowledge gaps remain: (i) it is now widely recognized that ecosystems and biomes have tipping points beyond which major change may become irreversible, but the level and nature of such tipping points at local, regional, and global levels remain poorly understood and defy quantification in many areas (see for example Rockström et al. 2009); (ii) policymakers have insufficient metrics and data to track the health of key ecosystems and biomes (SDSN 2014); (iii) much biodiversity has yet to be studied carefully and inventoried, particularly in the ocean (SDSN 2013).

From a risk management perspective it is irresponsible that the world is flying blind in so many areas in the face of unprecedented changes to global biomes and life support systems. Therefore major investments are needed in the policy-relevant science of biodiversity and ecosystem functioning. In particular, three critical global science-policy initiatives should be promoted: Future Earth, the global environmental change research program, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), and the Global Biodiversity Outlook under the CBD. Each of these programs requires better and more funding that should be a priority for the international community.

#### ***Private value chain initiatives***

Businesses account for some two thirds of global resource use, and unsustainable value chains for key commodities, such as palm oil or industrial production, are central drivers of environmental degradation. In recent years, major business initiatives have been launched to make value chains more sustainable, and large corporations are increasingly requiring their suppliers to adhere to minimum standards. For example, the Roundtable on Sustainable Palm Oil (RSPO) has led to a substantial increase in the acreage of palm oil plantations that are sustainably managed. Such value-chain initiatives must be supported by national legislation and be scaled up to include all major companies around the world across key commodities.

#### ***Goal-based back-castings***

Virtually every assessment of biodiversity and ecosystem services concludes that the world is on a profoundly unsustainable business-as-usual trajectory. Today's challenges are on track to become more pronounced over time as the world's population grows and per capita income increases. As a result it is impossible to manage biodiversity and ecosystems on rolling annual or five-year cycles. Countries, regions, and the international community must develop long-term 'back-castings' to map out pathways for the necessary transformations. SDSN and IDDR (2014) have applied the back-casting approach to decarbonization. Similar exercises are necessary for agriculture and land-use change, forests, oceans, coastal areas, protected areas, and other priorities. A promising example of such long-term approaches is Marine Spatial Planning (Intergovernmental Oceanographic Commission 2009).

Such long-term pathways and planning tools should be developed through multi-stakeholder processes and be subject to consultations with all affected communities. In this way they can become a platform for developing a public consensus on how pressing ecosystem and biodiversity challenges can be addressed in harmony with other social and economic objectives. Moreover, such a platform will help identify critical questions that require better answers from science, which can then in turn be addressed by Future Earth, IPBES, or other global research programs.

#### ***Improved technologies for decoupling***

The use of environmental resources and associated pollution must be 'decoupled' from economic growth (Rockström, Sachs et al. 2013). Such 'absolute decoupling' is extremely challenging and can only be achieved through vastly improved technologies that have yet to be developed or be deployed. Examples include low-carbon energy, energy efficiency, farming techniques that are efficient in fertilizer and water use, new materials that replace environmental resources, etc. Preserving biodiversity and safely managing ecosystems is therefore also a major technology challenge. We discuss opportunities for financing sustainable technologies in section 5.9 below.

## **5.5 Water and sanitation**

The MDGs have focused attention on access to improved water and sanitation through dedicated targets. The SDGs stand to broaden the focus to include water resources management and hygiene. In this sub-section we discuss access to safe water and sanitation. The bulk of investments in water and sanitation are needed to provide large-scale urban water supply and sanitation infrastructure. These investments are critical for achieving the SDGs, but go beyond providing access. Moreover, they are overwhelmingly financed using infrastructure financing modalities, such as project finance, so we will discuss opportunities for financing them in infrastructure section 5.8). Likewise, water resource management is addressed briefly in section 5.4 on biodiversity and ecosystem services.

### **5.5.1 Investment needs to meet the SDG on access to water supply and sanitation**

To finish the job of ending extreme poverty in all its forms, countries need to ensure that all sections of the population, including the extreme poor and marginalized have access to safe water and adequate sanitation. Significant progress has been made in expanding access to water supply and to a lesser extent sanitation. Between 1990 and 2012 an additional 2.5 billion people have received access to an improved water source. Yet the gaps remain large. Some 748 million people lacked access to safe water, and over 2.5 billion did not have access to adequate sanitation in 2012. The number of people without access to improved sanitation has stayed almost constant since 1990 underscoring the insufficient progress in this area (WHO and UNICEF 2014).

Yet, this data seriously underestimates the water and sanitation crisis. First, it overstates access to water supply and sanitation, particularly in informal settlements or slums located in urban areas (e.g. Mitlin and Satterthwaite 2013). Moreover, data from the Joint Monitoring Programme (JMP) does not report on water quality. In its most recent report it suggests that as many as 1.8 billion people might use drinking water that is contaminated with oral-fecal bacteria. Some 10 percent of 'improved water sources' may present a 'high' risk of fecal contamination (WHO and UNICEF 2014). The true extent of the water and sanitation challenge is therefore much higher than suggested by the MDG indicators.

Many developing countries face challenges in extending access to water and sanitation. Yet sub-Saharan Africa is by far the region with the lowest access to drinking water. All other regions have achieved the MDG Target of halving the number of people without access ahead of time, making this a largely African challenge. In turn the sanitation crisis is concentrated in South Asia and Africa. In both regions open defecation remains widespread and hygiene is poor. The absolute numbers of people without improved sanitation are rising in many countries with access levels being particularly low in West Africa (WaterAid 2013). The health implications are severe and include high child mortality rates, poor nutrition, and widespread child stunting. In Africa, it is estimated that some 400,000 children might die prematurely because of poor sanitation and hygiene (WaterAid 2013). See Harris (2014) for a powerful illustration of the impact of poor sanitation on health and nutrition in India.

In spite of the importance of access to water and sanitation for ending poverty and promoting development, the global partnership for water and sanitation is not working at the required scale and goal-orientation that the sectors require. The challenges are broad and extend beyond investments in infrastructure and its upkeep. In particular in the case of sanitation and hygiene strong political leadership is required to break taboos around discussing and improving sanitation and hygiene behavior. The 'zero open defecation' campaigns that have been particularly successful in rural parts of Bangladesh demonstrate what can be achieved without marshaling significant financial resources. Moreover, strong leadership is required to strengthen systems for managing water resources and water

infrastructure. All too often donors and countries prioritize capital expenditure over operating expenditure, so that newly built water access points fall into disrepair and expose communities to unsafe water.

Yet there can be no doubt that overall vastly more investments are required for the sector (WaterAid 2013, WHO and UN Water 2012, World Bank 2011). Estimates reviewed in Annex 1 suggest that an incremental \$27 billion will be required to ensure universal access to drinking water and sanitation with sanitation accounting for the majority of incremental resource needs.

#### ***5.5.2 Changes required to strengthen a global partnership on water and sanitation***

The sector clearly lacks resources, but it also requires better organization and more effective delivery mechanisms to achieve the SDGs. Some of the principal changes required for water and sanitation are illustrated below. While we are reasonably confident in the identification of some of the key challenges in the sector, we emphasize the preliminary and incomplete nature of recommendations for improvement. We welcome suggestions for strengthening the recommendations in this section.

##### ***Greater political focus on sanitation in particular***

Sanitation and hygienic behavior are complex issues with important cultural and gender dimensions, as well as important intra-household inequalities. Particularly in South Asia and most parts of sub-Saharan Africa, the sanitation crisis and the lack of access to improved water supply do not receive the political attention they need and deserve. The example of Rwanda shows how dedicated political leadership can drive profound changes in sanitation and water supply, provided that it is backed up by adequate resources (WaterAid 2013).

##### ***Adequate domestic resource mobilization***

A universal coverage obligation for water and sanitation requires significant public investments (World Bank 2011), including grant schemes for the extreme poor. These include so-called lifeline tariffs, where daily subsistence needs in water are provided free of charge, or cross-subsidization, where wealthier households subsidize the needs of the extreme poor. Such schemes must be designed carefully to ensure proper targeting of public subsidies and minimize the risk of leakage.

The 2012 GLAAS survey (WHO and UN Water 2012) has demonstrated that governments, particularly in Africa, allocate few resources to water and sanitation. Domestic resource mobilization for the sector amounts to one-third the level of health and one sixth the level of education expenditure. The situation is particularly grave for sanitation, where very few African countries meet the 2008 eThewini commitment to provide at least 0.5 percent of GDP in funding for sanitation and hygiene (WaterAid 2013). WaterAid has suggested that African countries should spend 4.5 percent of GDP on water and sanitation, in line with the Africa Infrastructure Country Diagnostic (AICD) assessments (Greenhill and Ali 2013).

##### ***Increased attention to integrated water resources management (IWRM) and water quality***

The combination of growing per capita use of water; expanding agriculture and industrial production; rapid urbanization and population growth in many regions; and the profound impacts of climate change on the water cycle will all combine to increase the scarcity and lower the quality of water supplies. Many countries are already water scarce and many more face acute water shortages unless they lower demand and drastically increase the efficiency of water use (UNESCO and UN Water 2012). Addressing these challenges will require a mix of (i) improved policies and regulation; (ii) investments in water

treatment systems, covered under ‘large infrastructure’ below; and (iii) programs to promote and invest in efficient water use.

### ***Global or regional pooled financing mechanism(s) for water and sanitation***

The water and sanitation sector receives insufficient volumes of international public finance, and the scarce resources are disbursed inefficiently. WaterAid (2013) highlights the extent of aid fragmentation where many small African countries need to work with well over 20 donors in a sector that receives modest financial inflows overall. A significant number of multilateral finance mechanisms exist, but they are similarly fragmented and often in competition with one another.

As reviewed in Annex 1 some \$27 billion are required annually to provide access to improved water supply and sanitation (WHO 2012). Most of these investments (\$22-24 billion) will need to be provided publicly – of course the share of private finance for large-scale water and sanitation infrastructure is much higher (see next section). We will estimate the likely ODA share in a subsequent version of this report.

The sector urgently needs effective pooled financing mechanisms that can bundle resources, reduce transaction costs, and – critically – help organize a more effective and goal-oriented response, particularly for sanitation. The benefits of pooled international finance instruments highlighted in section 4.3.2 and the lessons from public health (section 4.3) all apply directly to the water and sanitation sector. In particular, such a mechanism can help raise the profile of sanitation both domestically and internationally – provided of course that it is adequately resourced.

In contrast to other sectors reviewed in this report, there are several different options for developing a pooled financing mechanism for water and sanitation. To identify an appropriate structure several questions require careful answers: First, should water and sanitation be combined in one mechanism? Most sanitation interventions – particularly in urban areas – are water based, and poor sanitation and hygiene is a principal cause of water contamination. Due to their strong interdependencies a case can be made for combining them. At the other end, many changes required to improve hygiene and sanitation outcomes rely on behavior change and awareness raising, which stands in contrast to the capital-intensive infrastructure measures that dominate strategies for increasing access to water supply. On this basis one could argue for including sanitation in public health measures and financing strategies.

A second question is the regional focus. There clearly is an urgent need for global financing to support water and sanitation in Africa. The same may be true in South Asia, and other regions where climate change and groundwater depletion spell future crises. The geographical priorities of a new pooled mechanism would therefore need careful scrutiny.

Finally, the facility would need to determine whether to pursue project-based or program-based funding or a combination of the two. Since most investments in improving access to sanitation and water supply require relatively low capital per capita and must be underpinned by effective national policies, a program-based funding modality appears more appropriate for achieving the SDGs.

More work is needed to resolve these two questions and to determine the appropriate structure for pooling resources in the water and sanitation sectors. Depending on the structuring that is ultimately preferred, an existing institution, such as the Global Sanitation Fund operated by the Water Supply & Sanitation Collaborative Council, could provide the foundation for an expanded mechanism.

## 5.6 A data revolution for sustainable development

High-quality and timely data is vital for evidence-based planning and budgetary processes, as well as goal-based public-private investment partnerships (see sections 3.5 and 4.3), but – with the notable exceptions of health and core macroeconomic data – high-quality data remains in short supply and is reported too infrequently. The MDGs have accelerated progress towards harmonized reporting on key variables, but even among the 61 MDG indicators data is unavailable for a large number of countries. Available data is often reported at very low frequency and sometimes with a lag of four years or more. For example, data on extreme income poverty measured at \$1.25 per day is typically 4-5 years out of date when it is published (see also Alkire and Samman 2014, Cassidy 2014). The situation is often worse with management data, which countries need to monitor progress in implementing changes on a quarterly or more frequent basis.

At the same time, technical progress – chiefly through modern information and communication technologies – is generating ever-larger volumes of data at rapidly diminishing cost. Tremendous opportunities exist to harness such data for sustainable development and to develop creative new ways of tracking key inputs and outcomes. The central question is how such a ‘data revolution’ can be harnessed for sustainable development.

Following the call for a data revolution for sustainable development from the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda (HLP 2013), the UN Secretary-General has launched the Independent Experts Advisory Group on the Data Revolution. This group has just issued its report (IEAG 2014), which describes the needs and opportunities for the data revolution in clear and compelling terms. The group proposes a number of important processes to operationalize the data revolution over the years to come.

The SDSN’s ongoing contribution to the data revolution has focused on indicators and metrics for the SDGs and how data can be made available on an *annual basis*. The network has identified a set of 100 indicators for global SDG reporting plus a larger number of complementary national SDG indicators. The SDSN has also identified major gaps in available indicators and is working with interested organizations to explore how such indicator gaps can be filled.

Representatives from several organizations, including the Bill and Melinda Gates Foundation, Center for Global Development, PARIS21, SDSN, Simon Fraser University, UN Statistics Division, and World Bank, are now collaborating to develop a consensus estimate of investment needs for the data revolution. Key investment needs include *inter alia*:

- Improved censuses as well as civil and vital registration systems
- Regular high-quality surveys of households, businesses, etc.
- Improved administrative data systems
- Environmental monitoring, including remote sensing
- Geocoded data on government facilities and basic infrastructure
- Making data more available and accessible
- Support and incentives for data innovation
- Strengthening the capacity of national statistical offices and other bodies charged with the data revolution for sustainable development.

Several organizations will also look into the question of how a global public-private investment partnership for the data revolution might be organized. Findings on investment needs and organizing

the partnership will be reflected in a revised version of this report in early 2015. They will also be added to Table 2 summarizing overall investment needs in the SDGs.

## **5.7 Climate finance and access to modern energy: The Green Climate Fund**

Man-made climate change represents an unprecedented challenge to human well-being and economic growth in rich and poor countries alike. To avert catastrophic climate change, governments have agreed to limit the increase in average global temperatures to less than 2°C. Many climate scientists believe that even at 2°C the climate might undergo profound changes (IPCC 2014a) and some argue for much tighter emissions reduction targets (e.g. Hansen et al. 2013). At the same time, countries have yet to grapple seriously with the challenge of decarbonization – the IEA reports that growth in coal-fired power generation capacity, the fuel with the highest carbon content, continues to outpace growth in all non-fossil fuel power sources combined (IEA 2014b). As a result, an increasing number of leaders worry that it might be impossible to stay within 2°C.

The Deep Decarbonization Pathways Project (DDPP) shows that 2°C remains just within reach if countries take decisive action at the 2015 UNFCCC climate conference in Paris. It outlines how countries can transform their energy systems to decouple per capita GDP from greenhouse gas emissions so that the world can stay within the 2°C limit and each country can achieve its long-term development objectives (IDDRI and SDSN 2014). The recent report by the Global Commission on the Economy and Climate (2014) shows that incremental investments in climate change mitigation are affordable, particularly if the co-benefits (e.g. better health through cleaner air) are taken into consideration.

The challenge of staying within 2°C is compounded by the need to ensure Sustainable Energy for All (SE4All). Today some 1.3 billion people do not have access to reliable electricity, and a staggering 2.7 billion rely on unsafe primary biomass for their cooking (IEA 2011). Closing this access gap and ensuring the long-term convergence of per capita incomes between developed and developing countries will be part and parcel of the challenge of staying within 2°C. While preference should be given to cost-effective low-carbon energy technologies for meeting the SE4All target, fossil fuels will play an important role in closing the energy access gap. The resulting greenhouse gas emissions are relatively tiny, and the burden of decarbonization should not fall on the poorest and most marginalized members of society.

### **5.7.1 Investment needs and financing instruments for climate change**

Tackling climate change requires major long-term public and private investments in mitigation and adaptation to the unavoidable consequences of climate change. The term ‘climate finance’ describes a broad spectrum of investments in reducing greenhouse gas emissions and adaptation to climate change that includes inter alia investments in:

- **Infrastructure:** Low-carbon energy and transmission, efficient buildings, low-carbon industrial plants, sea walls to protect against rising sea-levels, climate resilient cities or water management infrastructure, etc. (c.f. sections 5.5 and 5.8)
- **Agriculture:** Low-carbon agriculture and animal husbandry, drought resistant farming practices and infrastructure, improved water management infrastructure, soil erosion control, climate-resilient livestock management practices, improved food storage facilities, etc. (c.f. section 5.6)
- **Health:** Strengthening of emergency health systems; control of vector-borne diseases, such as malaria and dengue fever; prevention and treatment of heat stress; etc. (c.f. section 5.1)

- **Biodiversity and ecosystem services:** Improved monitoring systems, reduced deforestation, integrated water resources management, etc. (c.f. section 5.4)
- **RDD&D:** Climate resilient technologies for energy, agriculture, water management, healthcare, etc. (c.f. section 5.9)

This illustrative list underscores that most investments in climate change adaptation and mitigation are impossible to distinguish from investments in development (Fankhauser and Schmidt-Traub 2009, UN 2010, Green Growth Action Alliance 2013, Global Commission on the Economy and Climate 2014). For this reason institutional mechanisms for climate and development finance must be closely aligned, as described in the next section.

The main difference between climate finance and development finance lies on the resource mobilization side and governance. While development finance provides resources for global public goods and public investments that cannot be financed by the poorest countries, climate finance covers the cost resulting from excessive greenhouse gas emissions. It should therefore be borne by the polluters under the overall framework of the UNFCCC (section 6.3.6).

Incremental resource requirements for climate change mitigation and adaptation are reviewed in Annex 1 and summarized in Table 2 above. An incremental \$380-680 billion will be required annually for climate change mitigation in developing countries to which one must add some \$60-100 billion in incremental expenditure for adaptation.

Even if there is substantial uncertainty about the precise volume of financing required, currently available climate finance is vastly insufficient and has been leveling off at some \$359 billion in public and private finance were available (CPI 2013). This is below even the most conservative estimates of investments needs. In comparison, one company ExxonMobil generates revenues of \$438 billion in 2013, and governments subsidize fossil fuel use to the tune of some \$400 billion per year (World Bank 2013).

Climate finance comprises a number of investment instruments and tools that are summarized in detail by the Advisory Group on Climate Change Financing (UN 2010):

1. **A clear price on greenhouse gas emissions:** At heart the climate problem is a market failure since greenhouse gas emitters do not bear the marginal social cost of the damage their emissions cause. As a result, governments, businesses, and households 'overinvest' in greenhouse-gas intensive technologies, and insufficient private capital is available for clean energy. To address this imbalance, countries need to impose an implicit or explicit price on greenhouse gas emissions. Such a carbon price can be established through carbon markets, such as the EU Emissions Trading Scheme (EU-ETS); taxes on greenhouse gas emissions, such as fuel taxes; or regulatory instruments, such as gas-mileage standards in the automotive industry.

In practice, carbon markets have underperformed as a policy instrument. Markets work very well for flow pollutants like NO<sub>x</sub> and SO<sub>x</sub> where spot market prices can regulate the flow of short-lived pollutants to achieve the social optimum. Since carbon dioxide and other greenhouse gases reside for a long time in the atmosphere addressing the climate challenge will require that stocks of greenhouse gases be managed over the long term. Carbon market prices

have proven to be too volatile and sensitive to the design features of the markets as well as short-term economic fluctuations, to provide a stable long-term price signal that will direct private investment towards clean alternatives.<sup>36</sup> On balance, carbon taxes that rise predictably over time offer more certainty and significantly lower transaction costs.

A clear carbon price in every major economy is critical for redirecting private investments towards deep decarbonization and for mobilizing public resources for direct investments. However, on its own a carbon price will not be sufficient, since deep transformations of countries' energy systems require long-term policy frameworks and coordination around each country's energy system (see below). For example, decisions on where to build which types of power plants involve complex political, social, economic, and environmental considerations that are not mediated through markets alone.

2. **Direct public investments and subsidies:** Governments need to subsidize or invest directly in a number of climate mitigation and adaptation measures, including technology RD&DD (section 5.9), public infrastructure, incentives for energy efficiency measures, monitoring systems, etc.
3. **International concessional climate finance:** Programs in low-income and some middle-income countries require incremental public financing that cannot be mobilized domestically. International concessional climate finance needs to fill these financing gaps. Such non-market-based funding might come from pooled financing mechanisms (GCF, GEF, GFATM, etc.), multilateral institutions (World Bank, New Development Bank, Regional Development Banks), bilateral agencies and Development Finance Institutions.
4. **Private investments:** A large share of investments in infrastructure, agriculture, and other areas – mediated through an effective carbon price – will be privately financed. Such market-based financing may come from pension funds, insurance companies, corporations, banks, bond issuance, sovereign wealth funds, and other sources.

#### **5.7.2 The international climate finance landscape and the Green Climate Fund**

The list of climate finance instruments shows that climate finance is not a stand-alone financing modality, but an add-on. It operates in conjunction with other public and private sustainable development finance flows and must be structured accordingly to avoid false distinctions or separations. To illustrate this point, it would be a grave mistake if a national program to distribute long-lasting insecticide-treated malaria bed-nets in higher altitudes that experience malaria as a result of climate change were organized and financed separately from existing national bed-net programs in adjoining lower-lying areas. Similarly, a climate change adaptation program to reduce the climate vulnerability of an irrigation system must not be separated from a development program to extend the latter.

The operational indivisibility of most climate and development finance has important implications for the role and design of the Green Climate Fund (GCF) as well as additionality and reporting requirements for concessional climate finance. The latter is discussed in section 6.3.7.

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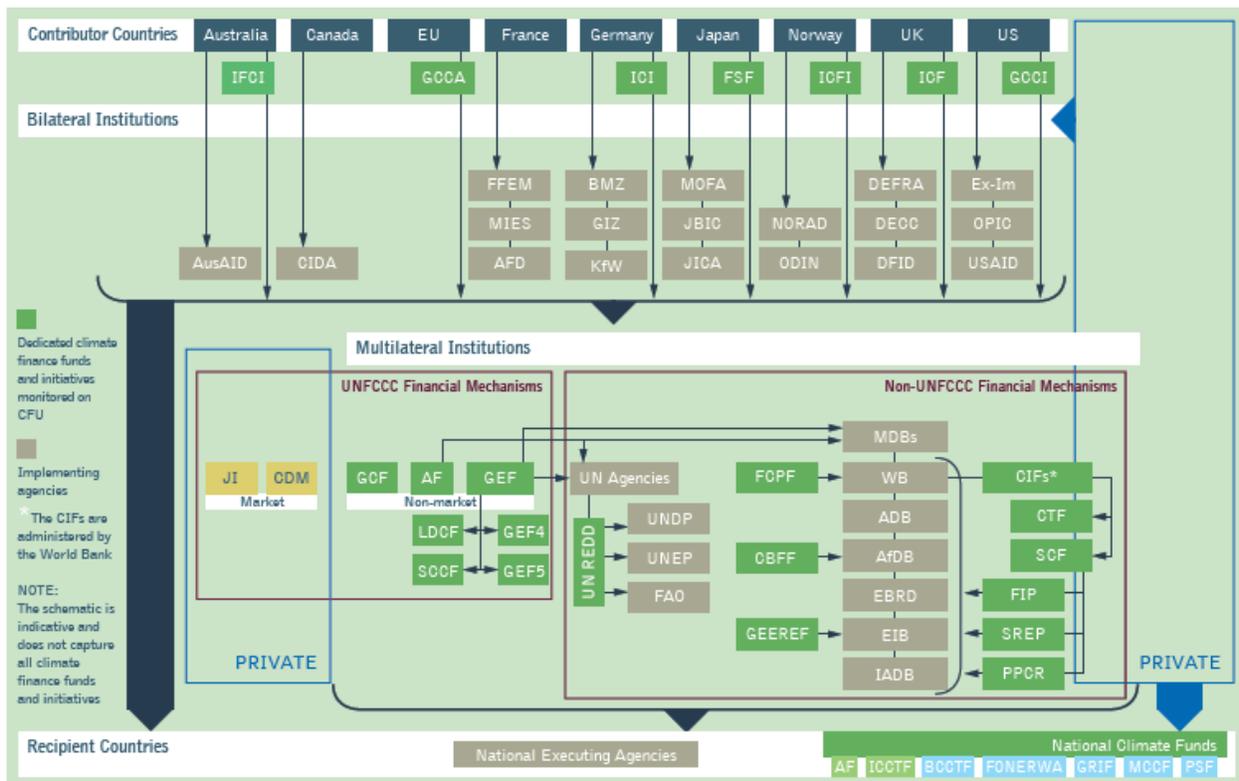
<sup>36</sup> Another challenge with carbon markets has been the emphasis on a uniform global carbon price. While such a carbon price is indicated by economic theory it is far too complex a tool – both politically and operationally – to play a role in the coming years.

The GCF has been launched by Parties of the UNFCCC as the public finance mechanism for climate change adaptation and mitigation. Developed countries have pledged an additional \$100 billion in annual climate finance by 2020, but without specifying the share of public finance. The scale of public investments in climate change mitigation makes clear that the vast majority of the \$100 billion are needed in public finance. In particular adaptation finance is overwhelmingly public. For example, CPI (2013) reports that 100 percent of financing for adaptation has been public.

The GCF plays a central role in addressing climate change:

- Reduced fragmentation and greater transparency:** There are dozens of multilateral, bilateral, and national climate funds – many of which have little or no resources (Nakhoda and Watson 2013). The resulting climate finance architecture is highly complex and fragmented (Figure 4), which impinges progress in lowering emissions and adapting to climate change. The international community must urgently rationalize the landscape of international climate finance and should ensure that incremental resources pass – to the extent possible – through the GCF as the world’s climate finance mechanism. Over time the GCF should become the leading multilateral mechanisms for investing in climate change mitigation and adaptation, with smaller multilateral and bilateral institutions investing alongside to further reduce transaction costs and increase coherence.

Figure 4: Climate finance architecture



Source: Nakhoda and Watson (2013). See source for abbreviations.

- Feeder fund for thematic pooled financing mechanisms to ensure system coherence:** As mentioned, the world must avoid a situation where the GCF and the GFATM each finance

uncoordinated national malaria control programs. Since the GFATM has the expertise and systems in place to solicit, appraise, fund, and monitor national health strategies, the GCF should act as a feeder fund to the GFATM for health-related investments. Similar arrangements should be considered for biodiversity and ecosystem services (GEF), agriculture (the proposed Smallholder Fund), and other core SDG investment needs. This would free up the GCF to focus on co-financing major infrastructure-related programs and leveraging private capital through effective use of public resources.<sup>37</sup>

- **Promoter and co-financier of national climate change strategies:** Countries need coherent long-term plans of action to reduce emissions and adapt to climate change. Currently, a number of planning tools exist that are poorly coordinated and rarely backed up with adequate international co-funding. The GCF can provide macro-economically significant co-financing to national climate change strategies, which will help ensure greater coherence and visibility in the fight against climate change.
- **Resource mobilization through assessed contributions:** As discussed more fully in later sections on innovative financing mechanisms (6.3.6) and climate finance (6.3.5), climate finance should be mobilized from countries with high greenhouse gas emissions to finance global public goods as well as adaptation and mitigation measures in poorer countries. The GCF has a unique opportunity to levy assessed contributions from all developed and high-income countries to ensure adequate and predictable public financing reaching some \$100 billion per year. Other countries with particularly high per capita greenhouse gas emission will also be invited to contribute. We will return to the question of how to mobilize climate finance in section 6.3.6.
- **A vital component of an international climate agreement:** The commitment to launch the GCF and to provide adequate climate finance was a central component of the 2010 Cancun agreement of the UNFCCC Conference of the Parties. A transparent and effective Green Climate Fund will be the glue that holds a long-term climate agreement to stay within the 2°C target together.
- **Financing for Sustainable Energy for All (SE4All):** The GCF's mandate broadly includes access to energy services, but the fund is currently not perceived as a full-fledged financing modality for energy access. The inextricable link between climate change and sustainable energy combined makes a compelling case for including access to sustainable energy (the first SE4All target) as a dedicated window in the GCF. This will have the added advantage of avoiding the need for an additional financing mechanism.<sup>38</sup>

Just like pooled financing mechanisms in other areas surveyed in this report, the GCF has a central role to play in organizing the international response to climate change. It will be an add-on mechanism without a banking license (currently the World Bank serves as the Trustee of the GCF).<sup>39</sup> The fund should

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<sup>37</sup> This feeder-fund function is currently not foreseen in the GCF design document, but it should be explored as a matter of priority.

<sup>38</sup> Similarly, this option has not yet been considered formally in the design of the GCF, but we believe it merits discussion. If a dedicated SE4All GCF window is inadvisable then a separate pooled financing mechanism might be needed to promote SE4All.

<sup>39</sup> See IDFC (2013) for a discussion of different business models for the GCF.

co-finance national programs and participate in project finance alongside other finance mechanisms. Key design features for a successful GCF might include:

- **A mitigation window with a strong private sector facility** to provide concessional project-based co-financing on a first-loss or *pari passu* basis, particularly for infrastructure projects. Financing through this facility should be coordinated with international risk-mitigation mechanisms, including MIGA, as well as regional public infrastructure windows operated by the World Bank, the Regional Development Banks or other multilateral financial institutions (section 5.8 below). As appropriate, the GCF might also provide program support against national climate change strategies. It could also become a critical financier of Infrastructure Project Preparation Facilities discussed in the infrastructure section (5.8.2).
- **An adaptation finance window** to provide grants or highly concessional loans to adaptation projects. As highlighted above, many adaptation measures are ‘development interventions’ (e.g. water management, improved agricultural practices/R&D, control of vector-borne diseases, climate resistant infrastructure), so the adaptation window should as a first priority act as a feeder fund to other pooled financing mechanisms, such as the GEF, the GFATM, or a proposed Smallholder Fund. Only adaptation programs that cannot be financed through other pooled financing mechanisms (e.g. higher sea walls or climate-resilient urban infrastructure) should be directly co-financed by the GCF. In this way the GCF will help reduce transaction costs and avoid duplication. As appropriate, the GCF might also provide program support against national climate change strategies.
- **An energy-access financing window** to provide concessional financing for energy access projects in support of the SE4All objectives. Meeting the target of universal access to electricity and modern cooking solutions may require some \$49 billion per year through to 2030 - \$45 billion for universal access to electricity and \$4.4 billion for modern cooking solutions (IEA 2011). The energy access financing window should promote technologies that can ensure modular, scalable and low-cost access to energy services, including through mini-grids that are easy to install and can provide low-cost electricity to remote communities.
- **RDD&D financing window** to finance technology development and diffusion, including technology transfer. Such a window could co-finance licensing fees of new technologies and provide research grants for research priorities (section 5.9).

### **5.7.3 Other non-financing priorities in the fight against climate change**

Transitioning to a low-carbon economy that ensures human well-being and is consistent with the 2°C limit is perhaps the most complex challenge that humanity has faced. It will *inter alia* require a profound transformation of countries’ energy systems that must be planned and financed over the long-term, i.e. through to mid-century. Since the energy system is at the heart of every modern economy, such deep transformations can only be pursued around long-term pathways for deep decarbonization that ‘back-cast’ from the global benchmark of 1.67tCO<sub>2</sub>e in energy-related average per capita greenhouse gas emissions by 2050 (IDDRI and SDSN 2014). These deep decarbonization pathways provide the long-term investment path that public and private actors need to pursue.

The members of the Deep Decarbonization Pathway Project have prepared initial national deep decarbonization pathways (DDPs) for fifteen of the largest global emitters of greenhouse gas emissions. Each pathway is organized around four main pillars: energy efficiency; decarbonized power generation;

electrification of transport, heating, and other point emission sources; and emission reduction in non-energy emissions, including in industry. These pathways are in the process of being refined - particularly with regards to spelling out the country-level investment needs for deep decarbonization.

Every country – except the poorest nations that should focus on promoting sustainable energy for all – should prepare a DDP. Such DDPs should be transparent and debated publicly, including with key industries, such as energy, finance, transport, construction, steels, or cement. They should be revised in light with emerging lessons and evolving technologies, and they should be compared and benchmarked internationally.

Long-term DDPs provide a framework for countries to develop and commit to short and medium-term targets and strategies for reducing greenhouse gas emissions. In this way countries will ensure that their shorter-term measures are consistent with the long-term objective of deep decarbonization by 2050. So legally non-binding, long-term DDPs can become part of an international climate agreement under the UNFCCC to inform the shorter-term Intended Nationally Determined Contributions (INDCs). Ensuring transparency and consistency of INDCs with global long-term benchmarks for decarbonization will build trust across countries, help identify technology benchmarks for deep decarbonization, and provide a framework for RDD&D (see below).

DDPs also provide a framework for establishing technology benchmarks that provide clear signals for the long-term RDD&D that is required for transforming countries' energy system. Well-designed benchmarks will be ambitious to be consistent with 2°C; be flexible to allow for many different technologies to 'win' (e.g. electric vehicles, fuel cells, hybrids running on biofuels); provide long-term clarity for business and governments to re-orient R&D programs; and are coordinated internationally as part of a climate agreement to ensure a level playing field. Technology benchmarks will also need to differentiate between countries according to the principle of common but differentiated responsibilities.

Examples for global technology benchmarks that could be incorporated in a UNFCCC agreement are outlined below. The target dates and benchmarks are indicative and would need to be reviewed carefully.

- Moratorium on development of new coal deposits and non-conventional fossil fuel reserves (e.g. oil sands, Arctic oil, deep-ocean oil, or methane hydrates) after 2015. Such moratoriums would be lifted only in the event of large-scale diffusion of point source CCS (for coal) or air CCS (for oil);
- No new coal-fired power plants licensed for construction after 2018 except with CCS (2025 for low-income countries (LICs));
- All existing coal-fired power plants retrofitted with CCS, or closed, by 2030 (2040 in low-income countries);
- Carbon intensity of power generation <100 g/kWh by 2050;
- All new personal vehicles sold after 2030 with zero tailpipe emissions (2035 for low-income countries), and all commercial vehicles with electric, natural-gas power, or sustainable, low-CO2 biofuels;

- All new residential and commercial buildings heated by electricity or co-generation after 2025 (2035 for low-income countries);
- Global standards on CO2 intensities for appliances and industrial processes by 2025 (2035 in low-income countries).

Section 5.9 on Public-Private Technology Partnerships describes how public-private partnerships can be established to set and achieve technology benchmarks.

## **5.8 Financing large-scale infrastructure**

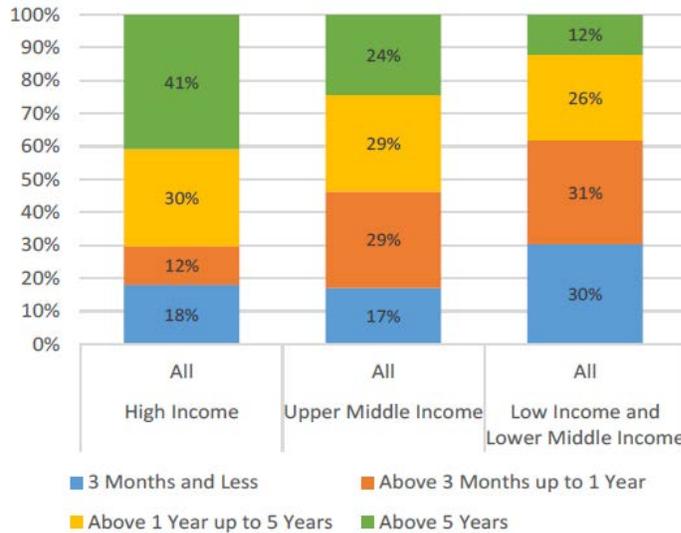
Infrastructure is critical for promoting economic growth, social inclusion, and environmental sustainability. Key infrastructure services include energy (power generation, power transmission and access, access to cooking fuels), drinking water and sanitation, transport and freight (roads, railways, mass transit, ports), and communication (fixed and mobile). Infrastructure investments to decarbonize the energy system are vital to stay within the internationally agreed limit of 2°C.

We cover infrastructure investments for basic needs, including access to core infrastructure services, in previous sections: universal access to electricity and modern cooking solutions (section 5.6) as well as universal access to safe water and adequate sanitation (section 5.5). Here we address residual infrastructure needs in energy, water, and sanitation, as well as the financing needs for transport infrastructure and telecommunications.

Infrastructure finance differs in several important ways from other investment requirements reviewed in this report. First, private investors play a much larger role than in any other area. Yet varying degrees of public guarantees and co-financing are required in all infrastructure areas, particularly in poorer countries, with the notable exception of mobile phone infrastructure that is being financed entirely through private means in rich and poor countries alike. Second, infrastructure investments can have a lifetime exceeding 30 to 70 years and payback periods on capital investments are often in the order of 20-25 years. Such long-term investment tenors impose substantial risks on private investors that must be mitigated on a country-by-country basis. Comprehensive global studies of infrastructure projects have proven significant, and enduring, cost-over runs in transport infrastructure: 44.7 percent for rail, 33.8 percent for bridges and 20.4 percent for roads, making it even more challenging for private financing of infrastructure (Flyvbjerg 2009). Third, a growing share of infrastructure investments is made by local governments and municipalities requiring municipal bonds and other sub-sovereign financial instruments. Finally, infrastructure investment is project based and much less amenable to the sector programs that can deliver social service investments. Since infrastructure projects generate revenues in local currencies, but international investors tend to prefer dollar or euro-denominated debt or equity, currency mismatches need to be managed over the duration of an investment.

The required investments are high, but they are small in comparison with global saving of \$17 trillion per year and liquidity at a historical high (World Bank 2013b). There is ample capital and liquidity, yet the world is facing a growing mismatch between financing needs – particularly for long-term infrastructure – and available financing. The mismatch between long-term investment needs and short-term finance is particularly acute in lower-income countries as illustrated in Figure 5 for the case of bank loans.

Figure 5: Proportion of bank loan maturities by country income level



Source: Global Financial Development Report 2015 cited in World Bank (2014c)

Current flows of infrastructure finance are vastly insufficient to meet investment needs – particularly if one factors in incremental investment needs to curb greenhouse gas emissions. And the situation might get worse as national and local governments’ balance sheets deteriorate, particularly in developed countries, and some private investors reduce their exposure to long-term infrastructure investments in response to adverse global rules and regulation (see below). Raising the required finance for infrastructure investments will therefore be one of the biggest post-2015 challenges.

### 5.8.1 Infrastructure investment modalities

Much infrastructure is financed off balance sheets by governments (national and local) and large corporations through sovereign, municipal, or corporate bonds, respectively. Most of this financing is mediated through capital markets or direct bond issuance to institutional investors. Challenges arise when the balance sheets of sovereign and corporate investors cannot support adequate bond issuance (as is the case in many low-income and lower-middle-income countries) or when the needed equity investment must be raised from third parties.

In such cases project finance modalities are used, whereby investors take direct non-recourse positions in an infrastructure project. This sub-component of the global infrastructure market is dominated by banks, which provide some two-thirds of global project, followed by institutional investors (18 percent) and governments (10 percent) (Inderst 2013). According to Inderst and Stewart (2014) institutional investors in OECD member countries have over \$79 trillion in assets under management, but have only around 1 percent of their portfolio directly invested in infrastructure assets. And only some 8 percent of assets under management by OECD institutional investors are truly long-term (World Economic Forum 2011). Principal impediments towards greater participation of institutional investors in infrastructure project finance are (i) the long delays in structuring project finance deals and the highly specialized expertise required for structuring and appraisal, and (ii) the low liquidity of project finance investments.

The project finance market for infrastructure needs to grow rapidly, particularly to meet investment needs developing countries and their municipalities that have only limited access to international bond markets. Since institutional investors, such as pension funds, insurance companies, endowments, and

sovereign wealth funds manage a large share of global saving and have relatively long investment horizons their low share of direct infrastructure investments points to a major mismatch that must be addressed by FSD.

### **5.8.2 A global partnership for infrastructure development and finance**

A global partnership for infrastructure development and finance in support of the post-2015 development agenda should focus on five priorities to unlock private capital to meet the infrastructure investment needs and complementing the public investments in energy, climate mitigation, and water and sanitation, described above.

#### **1. National Public Investment Systems and Infrastructure Project Preparation Facilities**

It is often said that the principal challenge in infrastructure finance lies in mobilizing private capital, but in many countries the biggest bottleneck is the lack of bankable or ‘shovel-ready’ projects supported by experienced and well-funded promoters. It takes several years for a project to reach a stage when banks and other investors can consider direct investments. During this time the project suffers the greatest risks of failure, and aborted projects do not generate a financial return for investors. As a result the appetite and ability of the private sector to fund early-stage infrastructure development activities and to take on the development risk is very low.

There are two complementary ways in which the shortfall of bankable projects can be addressed. First, countries need competent and effective teams of public sector officials who can design infrastructure projects, craft effective public tendering documents and processes, and evaluate and supervise complex engineering projects. Many countries have cut back on such public ‘planning’ and rely entirely on private intermediaries who do not fill this critical need. The problem is even greater at municipal levels, since cities have growing responsibilities for managing infrastructure investments, but tend to lack the skills. For example, none of Latin America’s big cities has a metropolitan transport authority that can design and supervise the construction of an integrated transport system.<sup>40</sup> Many African governments do not have the capacity to support and accompany the preparation of more than 1-2 privately-financed greenfield infrastructure projects at any one time. As a result, many needed and worthwhile projects are not developed to a point where they can become bankable.

Countries therefore need to invest in their public capacities for investment promotion and infrastructure planning. This will require dedicated Infrastructure Project Preparation Facilities (IPPF) and management teams, which must have the authority to standardize and streamline procurement and project approval processes across a number of ministries and other authorities. Chile has dramatically improved the efficiency of its capital spending after setting up a National Public Investment System. In other countries, public officials tend to lack the skills or the political independence to make sound investment decisions on infrastructure (see also World Economic Forum 2014).

Each IPPF should have access to substantial resources to co-finance the project preparation. Such ‘readiness funding’ will help generate bankable projects, which in turn can attract private financing. ODA could and should finance effective IPPFs in low-income countries and for transboundary projects that present higher political risks. Given the small size of many African countries and their corresponding reliance on regional infrastructure, such infrastructure teams could be housed at the sub-regional level,

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<sup>40</sup> See The Economist, May 17, 2014.

perhaps in the Regional Economic Commissions. Financing for such teams could come from the World Bank, IDA, Regional Development Banks, the GCF, or bilateral partners.

A second, complementary approach is to promote a greater level of private participation in the early-stage preparation of infrastructure projects to help alleviate capacity constraints. To this end private developers could be granted access to the IPPF funding at the same terms as public counterparties.

The need for effective IPPFs has been recognized by multi- and bilateral development partners who have set up a multitude of project preparation facilities. However, most of these facilities suffer from important limitations. They tend to focus on fairly mature projects where the risk is lowest, but the value added provided by the project preparation facility is also lower. Most facilities have low funding limits that can only support task-based bankability of project. Finally, most facilities resist investing in the ‘upstream’ phase of projects and continuing through the entire development process to financial close. Yet, this is exactly where the bottlenecks are that must be removed. FSD can make a major contribution towards infrastructure development by mobilizing financing for effective IPPFs that work with public infrastructure teams and/or private project developers.

## **2. Effective subsidy and investment risk-mitigation mechanisms**

Given the scale and diversity of infrastructure finance needs, as well as the need for investors to participate in the complex and often bespoke structuring of each project, it seems inadvisable to establish a global infrastructure fund. Instead, another urgent need is to strengthen and streamline international systems for credit enhancement and managing risk that is unrelated to a project’s commercial viability. Examples for credit enhancements include first-loss equity tranches, loan guarantees, or subordinated debt at concessional terms. Key risks that private investors alone find hard to manage are payment risks and political risks, such as expropriation or regulatory changes (including retro-active changes to feed-in tariffs). Of these the risk of non-payment by government or private counterparties, including retroactive changes to feed-in tariffs for power-purchase agreements, typically ranks highest.

The World Bank – largely through its Multilateral Investment Guarantee Agency (MIGA) – and Development Finance Institutions (DFIs) in many high-income and upper-middle-income countries provide credit enhancement services, but the systems are small, fragmented, and highly risk-averse. Private investors need bigger and more standardized tools for credit enhancement and guarantees (Venugopal and Srivastava 2012).

MIGA is the biggest multilateral political risk insurance provider insuring around \$1-2 billion a year in new investment. Other important public players are the US Overseas Private Investment Corporation (OPIC) and the African Trade Insurance Agency (ATI). Yet, MIGA has only paid out 8 claims since its inception in 1988, totaling \$16 million. This represents hardly a level of risk-taking commensurate with the opportunities in developing countries (Kharas and McArthur 2014). A more effective MIGA that has greater capacity for underwriting and due diligence with streamlined project approval processes would be able to support a greater number of projects. Enhanced MIGA access to the reinsurance market would enable MIGA to support more marginal projects, particularly in countries with weak counterparties, including loss-making utilities. Such a more effective MIGA should be a centerpiece of global risk mitigation mechanisms for infrastructure investments.

It is sometimes argued that political risks should be covered through private insurance alone, but this misunderstands the role that the World Bank in particular plays. Governments tend to be very careful to

honor agreements with the World Bank and larger DFIs since failure to do so can trigger hold-outs on other investment projects and programs. As a result, no private party could offer similar guarantees against non-payment at a comparable price. In fact, political risk insurance from companies, such as Lloyd's and the 'companies' markets (e.g. Zurich, AIG), does not tend to cover payment risk in low-income countries, which constitutes by far the biggest risk for international infrastructure investments.

A second priority is to increase the contribution of non-traditional development finance institutions from non-DAC countries, particularly China and other BRICS. These development partners frequently offer concessional or semi-concessional loans for physical infrastructure development, which complements the grant financing for budget support and social sectors provided by many DAC member countries. Some have also pioneered infrastructure-for-resources deals that reduce recipient countries' need for upfront finance.

Non-traditional donors already contribute 38 percent of total infrastructure financing in developing countries (\$8 billion in 2006), the same order of magnitude as private infrastructure finance, and significantly greater than traditional ODA financing (\$5 billion or 22 percent of total financing) (Foster 2009, cited in World Bank 2013a). In this regard the recently announced New Development Bank and the Asian Infrastructure Investment Bank have the potential to become important actors that are complementary to existing development finance institutions.

Third, the capacity of Multilateral Development Banks (MDBs), like the International Bank for Reconstruction and Development (IBRD), the International Finance Corporation (IFC) or the Regional Development Banks, to make debt and equity investments – including through first-loss tranches of credit – should be enhanced. At least two challenges warrant action to use available MDB resources more effectively and to target them to the countries that need them most:

- Many countries – particularly upper-middle-income countries – use MDBs as contingent funding vehicles by keeping committed MDB lending capacity at hand without using it for projects. Such undisbursed balances of committed loans can make up about a third of total loan commitments and are unavailable to finance real projects elsewhere. This inefficient practice can be curtailed by charging higher commitment fees and actually enforcing them.
- Most MDBs charge interest rates that are too low to cover administrative costs. For example, loan income as a share of net admin expense is 45 percent at the IBRD. Such highly subsidized borrowing is particularly widespread for upper-middle-income countries, and it comes at the expense of IBRD lending to lower-middle-income countries. MDBs should be required to offer differentiated pricing for loans to avoid unnecessary subsidies and increase their overall lending capacity.

Fourth, most infrastructure lending occurs in international currencies, such as the US dollar or euro, but the revenues that will pay back outstanding loans accrue in local currency. Currently, it is extremely difficult for investors and borrowers to hedge currency risks over sufficiently long periods to adequately de-risk this dimension of project finance – particularly for currencies of smaller low-income countries. The ability of the MDBs to offer currency hedges in support of infrastructure investments should be increased through the greater use of international currency swaps, including with countries' central banks.

A final priority is to harmonize MDB and DFI standards and investment promotion windows. Significant progress has been made in coordinating standards among some European DFIs, but the financial structuring of credit enhancements and risk-mitigation mechanisms still varies significantly across DFIs as well as MDBs. Similarly, social and environmental standards for project appraisal and approval tend to differ, which imposes unnecessarily high transaction costs on borrowers and syndication agents.

### **3. Sound global rules to mobilize private finance and disclosure requirements**

Some global rules undermine resource mobilization and private investments in long-term infrastructure. Important examples are global standards for the regulation of banking (Basel III) and insurance (Solvency II); sector-specific rules, such as unbundling rules in the power sector; and global standards for disclosure and transfer pricing (section 6.2). Reforming them will be a central priority for meeting the SDG investment needs in infrastructure in all countries.

New global standards for national regulation of the financial and insurance industries, which were been tightened in the wake of the 2008 financial crisis to increase the stability of the financial system, are having unintended but severe impacts on mobilizing private investment for infrastructure. Spencer and Stevenson (2013) review the impact of the Basel III and Solvency II standards for banking and the insurance industry, respectively, showing that the revised standards increase the cost of long-term obligations on the balance sheets of banks and insurance companies. This in turn will increase bank disintermediation from long-term loans, thus making it harder to finance infrastructure projects. It will also increase the re-financing risk for long-term infrastructure investments.

The complex structuring and syndication of long-term infrastructure projects has traditionally been led by banks who tend to be the only market actors that have the full range of expertise available in house. There is growing concern that the changing regulatory landscape and banks' declining readiness to invest long-term will lead to reducing the number of infrastructure structuring team. Even if other sources of private finance – notably from institutional investors – are unlocked, the lack of project structuring and syndication expertise may become a serious bottleneck towards delivering the infrastructure investments the SDGs will require.

Another regulatory challenge stems from unbundling rules in the power sector (Kaminker et al. 2013) that require separate ownership for transmission and generation infrastructure in order to prevent monopolies and increase competition. As an unintended consequence these rules increase counterparty risks and uncertainty for long-term investments in electricity infrastructure, which in turn lowers private investor's appetite for investing in such assets.

The World Bank (2013a) highlights a third regulatory challenge that affects developing and developed countries alike. Tax revenues are increasingly lost to abusive transfer pricing, opaque corporate disclosure rules in many jurisdictions, and widespread tax evasion (see also Collier et al. 2013). According to Hollingshead (2010), between 2002 and 2006 developing countries might have lost between \$98 billion and \$106 billion in tax revenue to abusive transfer pricing alone. We return to these issues in section 6.2.

It will be difficult and perhaps unadvisable to review the current global regulatory standards, but the design of upcoming Basel IV and Solvency III regimes should ensure coherence between the objectives of financial stability and the need to scale up long-term investments in infrastructure and climate mitigation. Similar coherence checks need to be conducted for other global rules standards that apply to all countries, including but not limited to trade regimes, intellectual property standards, accounting

standards, listing rules on international stock exchanges, corporate reporting, and disclosure standards. To this end the SDSN proposes that the SDGs include a target on ensuring coherence between such international rules and achieving the SDGs (SDSN 2013, Target 10a) including associate indicators (SDSN 2014).

#### **4. Harmonized infrastructure investment platforms and an effective secondary market**

The financing structures for infrastructure projects have become very complicated with great differences across projects – even when the projects are of a similar type. Today only large investment banks have all the technical expertise in-house to structure complex infrastructure transactions. The complexity of infrastructure finance combined with the sometimes long periods to take a project from feasibility structure to financial close (up to take several years) are two important reasons why institutional investors and the funds they manage find it difficult to invest in infrastructure.

There is significant scope for harmonizing investment structures, particularly for core infrastructure in developing countries, through harmonized infrastructure investment platforms.<sup>41</sup> In recent years institutional investors from China and other emerging countries have demonstrated how the structuring of infrastructure projects can be simplified to allow for rapid execution. Public and private investors from high-income countries, including the multilateral development finance institutions, can learn a great deal from these experiences.

Recognizing the importance of mobilizing additional investments for infrastructure, the Brisbane G20 summit has endorsed the Global Infrastructure Initiative, a multi-year program to support public and private investments in infrastructure. A dedicated Global Infrastructure Hub, located in Sydney, will be launched to provide leadership and coordination for initiatives to scale up public and private investments in infrastructure (G20 2014).

In recent months China and other emerging economies have made very promising announcements on funding infrastructure investments. In particular, the Asian Infrastructure Investment Bank and the New Development Bank recently announced by the BRICS countries promise to become important infrastructure investors. Along with regional infrastructure funds, such as the Silk Road and Maritime Silk Road, announced at the 2013 APEC Summit in Beijing, they will have tremendous opportunities for streamlining investment structures to overcome unnecessary fragmentation.

Further, the World Bank has recently announced the Global Infrastructure Facility (GIF) to (i) help improve the enabling environment for infrastructure investment and project definition (ii) support project preparation and investment feasibility; (iii) provide transaction support and financial structuring; and (iv) provide financial arrangement and credit enhancement. The GIF proposes to establish a broad-based partnership involving public and private investors in infrastructure projects. It is early days for the GIF, but the facility can make an important contribution to infrastructure financing in middle-income countries. It seems that more pro-active approaches would be needed to get more projects in low-income countries off the ground.

Several other initiatives exist to coordinate infrastructure investments from public and private sources. In particular, European Development Finance Institutions, such as DEG, FMO, PROPARCO, or the Danish

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<sup>41</sup> The national and regional infrastructure teams and pipelines described under priority 1 above, can further harmonize investment structures for infrastructure projects.

Climate Investment Fund, have been at the forefront of increasing donor harmonization and coordination. All these efforts go into the right direction, but they remain sub-scale.

Closely related is the need for a more effective secondary market for infrastructure projects to draw institutional investors into this space. Investment banks and multilateral finance institutions can do more to slice executed infrastructure investments according to the needs of institutional investors. By off-loading these positions from their books, banks can reduce the impact of Basel III capital adequacy standards for long-term investment positions.

### **5. Deeper local saving pools for local infrastructure investments**

Most infrastructure finance is mobilized through bonds (sovereign, municipal, or corporate). Because of the high costs of managing long-term currency risks in most developing countries, infrastructure bonds tend to be required in the local currency of the project and must therefore originate from countries' local saving pools.

Developing countries, particularly in Africa, must therefore develop and deepen their local savings pools so that they can be used to finance infrastructure investments without resorting to Eurodollar financing. Fortunately, with the rising middle class in most developing countries the potential for saving pools denominated in local currencies increases rapidly. Where adequate national savings exist, governments can expand the domestic investor base by supporting the growth of domestic insurance and pension funds. They can also reduce market information asymmetries by promoting transparent market benchmarks and data.

International organizations, including MDBs, can support this process through (i) advice on institutions and regulations, (ii) credit enhancement to increase attractiveness of local-currency bond offerings, (ii) regional bond funds to increase scale, and (iv) their own issuing of local-currency bonds (World Bank 2014c).

### **5.9 The vital role of the World Bank's International Development Association (IDA)**

The international Development Association (IDA), the World Bank's fund for the poorest provides grants and concessional loans to IDA-eligible countries (Annex 2). IDA offers probably the highest quality of development assistance (next to other pooled financing mechanisms like the GFATM) since it is heavily focused on the poorest countries, provides large volumes of grants with high predictability over several years or highly concessional loans with long tenors and grace periods, offers flexibility to address recipients' priorities, and can disburse fairly rapidly (World Bank 2014d). IDA is consistently ranked as one of the most transparent aid mechanisms (Publish What You Fund 2014). As a result, IDA plays a central role in financing countries' social services and economic development priorities.

IDA has played a vital role in supporting the MDGs and should be strengthened further in support of the SDGs. FSD needs to underline IDA's role in support of sustainable development financing. IDA itself should reflect on how it might deliver the most strategic value as part of the overall financing landscape for the SDGs.

One of the greatest benefits to developing countries is IDA's ability to provide macro-economically significant resources against country-led programs without any earmarking. This flexibility makes IDA the instrument of choice to co-finance government priorities that cannot be co-financed through other bilateral or multilateral mechanisms. It might therefore seem contradictory to propose thematically

focused financing mechanisms when IDA has been so successful as an un-earmarked pooled financing mechanism. However, a careful analysis shows that this is not the case.

Thematically focused pooled financing mechanisms (like the GFATM or the proposed Global Fund for Education) and IDA each play specific and complementary roles. Thematic mechanisms can help mobilize epistemic communities and partnerships around the challenges of scaling up public-private investments to achieve specific SDGs. Successful partnerships depend on sustained advocacy, metrics, back-castings, technology development, M&E, and so forth (section 4.3.1), which in turn requires a high degree of focus. Only thematic pooled financing mechanisms can provide such focus and promote sustained learning in specific areas.<sup>42</sup>

IDA, on the other hand, provides the flexibility that countries need in order to mobilize resources for (i) investment needs that are too country-specific for global funds, such as infrastructure or industrial development; and (ii) other SDG priorities that are underfunded. Through its flexibility IDA complements thematic pooled financing mechanisms. A successful SDG financing architecture will require a strong IDA and effective thematic funds in key areas.

### **5.10 Public-Private Technology Partnerships for the SDGs**

As emphasized throughout this report, achieving the SDGs will require the rapid deployment of new sustainable technologies such as low-carbon energy and climate-resilient high-yield crops. In many cases, these technologies already exist but are under-utilized because of poverty or under-investment in public goods. In many other cases, however, the relevant technologies are still pre-commercial or not even yet developed at an experimental stage. In such areas, the global community needs to adopt strategies for ‘directed technological change’ through public-private partnerships to accomplish targeted technology breakthroughs.

#### **5.10.1 The complex art of promoting new technologies**

Technology is sometimes naively described as emerging from ‘blue-sky’ thinking, in a curiosity-driven research process. While this has been true for some technologies in the past, it is just as true that key classes of technology have been consciously developed and promoted through public policies, often driven by military considerations but very often by civilian needs as well, such as the 19<sup>th</sup> century imperative to increase food production in the face of rapid population growth. The list of modern technologies that have developed as a result of targeted policy efforts and bespoke public-private partnerships is too vast to enumerate, but would include the following:

- Aviation and avionics
- Nuclear technologies (power, medicine, research, weaponry)
- Space sciences
- Radar
- Semiconductor technologies
- Integrated circuits
- Computer design and architecture
- The Internet

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<sup>42</sup> Of course, such thematic mechanisms do need to strike the right balance between breadth and depth. For example, the health sector clearly needs more broad-based funding for health systems to complement the highly successful vertical programs supported by GAVI and the GFATM.

- Nanotechnology
- Molecular biology
- Genomics
- Green-revolution high-yield seeds
- Vaccines (various)
- HIV/AIDS medicines and diagnostics
- Malaria medicines and diagnostics
- Self-driving vehicles

This is just a sampling of a much larger list, but it makes the point that today's technological capacities did not emerge through the tinkering of individual inventors nor the work of heroic entrepreneurs and private companies alone, though they indeed played a role. Government stood resolutely behind many of the breakthrough technologies in their early stages. In modern times, the US Government has played the most important role in this process across a range of innovation systems. The largest foundations, including the Rockefeller Foundation in the 20<sup>th</sup> century and the Gates Foundation in the 21<sup>st</sup> Century, have also played important roles, most importantly in the health and agricultural sciences.

The Breakthrough Institute (Jenkins et al. 2010) has compiled a vivid and non-technical description of how key technologies were developed, showing inter alia that even the iPhone could not have been developed by Apple without long-term public-private partnerships on technology development (see also Mazzucato 2013). Even the 'shale gas revolution' in the United States, which is widely attributed to private sector ingenuity, has its roots in public-private technology partnerships that started in the 1970s and without which hydraulic fracturing of shale would not have reached commercial viability in the early 21<sup>st</sup> century (Trembath et al. 2012).

The need for public-private technology development partnerships is a direct consequence of the 'non-rival' nature of knowledge goods (section 3.1). For-profit markets underprovide knowledge goods: Either these goods are made freely available (such as with basic scientific knowledge) and therefore do not generate a return for private inventors, or they are held by temporary monopolists protected by patents, which in turn restricts their adoption and diffusion. Either way, the development and diffusion of technology is less than optimal, and the poor may be hurt the most. In particular, complex new technologies will be under-provided by markets. As a result, public (co-)financing is needed to help generate and diffuse new technologies. This will be especially important for sustainable development, since deep and rapid technological change will be the hallmark of success in achieving a sustainable-development trajectory. Global public financing will be needed to promote research and development, pilot new technologies, and promote their rapid diffusion to low-income countries.

#### **5.10.2 Priority technology challenges for the SDGs**

Achieving sustainable development will require many new technologies in key areas. Prominent examples highlighted in this report include:

- Improved crop varieties for climate resilience and resource efficiency
- Improved practices to increase resource efficiency in agriculture, livestock, and fisheries
- Low-carbon energy sources and systems, including energy storage
- Major advances in energy efficiency
- New vaccines, medicines, and diagnostics
- Information technologies for massive education and training at all levels

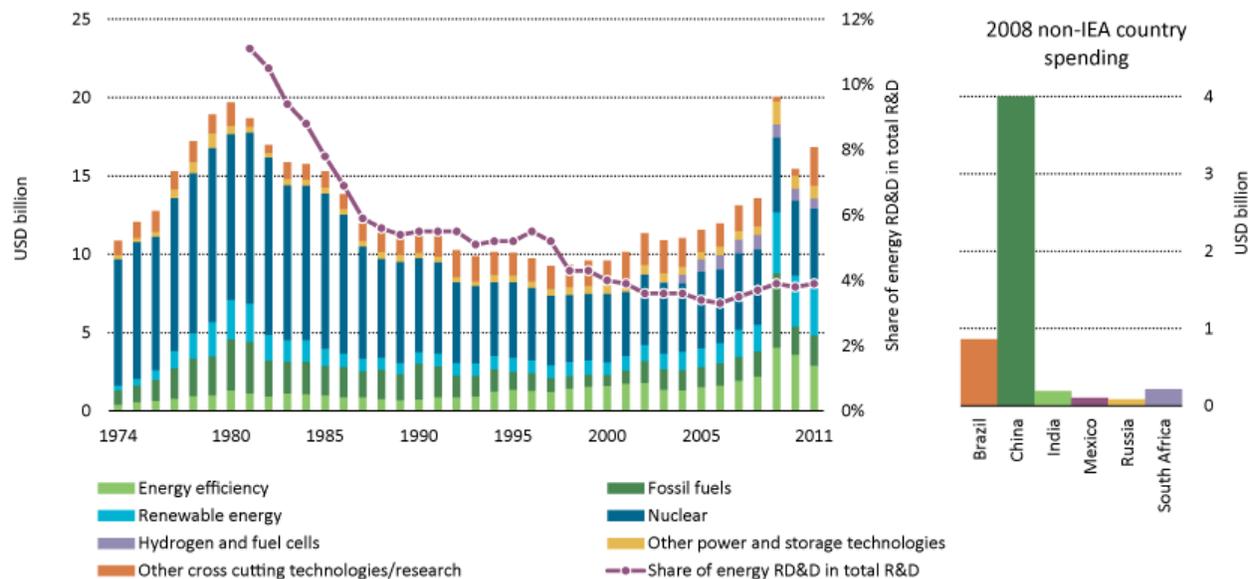
- Advanced monitoring and sensing systems for ecosystem management
- E-governance to support participation, transparency, and efficiency in governance

These technologies for the SDGs require targeted public-private partnerships. They complement other kinds of market-driven innovation and technological upgrading. Both the targeted and market-driven technological changes contribute to long-term economic development. FSD should focus in particular on the sustainable development technologies that require targeted investments and public-private partnerships.

### 5.10.3 The inadequacy of today’s investments in new technologies

Before turning to how such public-private partnerships might be organized and financed, it is important to underscore the inadequacy of today’s technology financing, which is sub-scale and does not prioritize its resources towards the technologies needed for sustainable development. Figure 6 shows public expenditure on energy R&D in member countries of the International Energy Agency (IEA). Energy R&D expenditure as a share of total R&D expenditure has fallen steadily since the 1980 and now accounts for a mere 4 percent of total spending. Trends for the United States – the single biggest investor in science and technology – are similar. Such paltry spending on energy R&D is incompatible with the depth of the transformation and the need for new technologies that staying within the 2°C limit requires (IDDRI and SDSN 2014). Moreover it is dwarfed by the estimate \$88 billion in public subsidies and incentives given each year to new fossil fuel exploration (Bast et al. 2014). Based on a careful review of clean energy R&D needs, the IEA (2010) estimates that current energy R&D expenditures of roughly \$10 billion will need to be increased by \$40-90 billion and that at least half of this investment gap would need to come from public sources.

Figure 6: Energy R&D expenditure in IEA and key non-IEA countries



Source: IEA (2013)

Similar mismatches between opportunities and the need for new technologies on the one hand and actual investments in technology development exist in other SDG priority areas as well. For example, Section 5.2 highlights the importance of mobilizing ICT for education, which has so far largely been missed in international cooperation.

The global gap in R&D expenditure hides tremendous variation in R&D spending between countries. On a per-capita basis the difference in R&D investments between poorer countries and high-income countries can be as much as 2-3 orders of magnitude (NSF 2012).

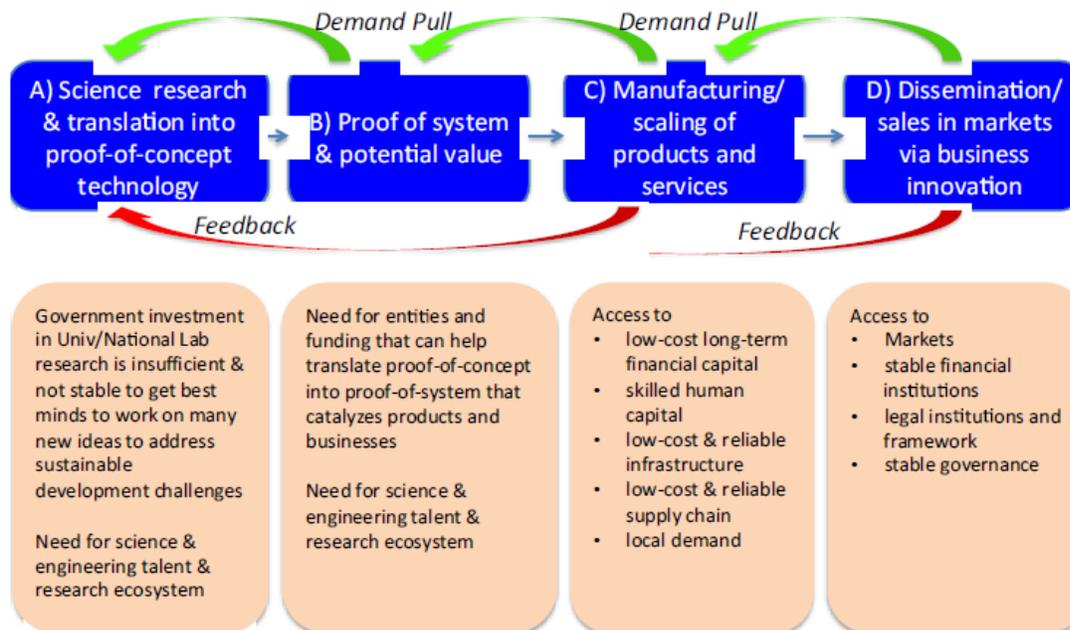
Several international collaborative programs have been established to promote technology diffusion, but they suffer two important weaknesses. First existing programs tend to be sub-scale and underfunded. Second, they tend to focus mostly on the downstream side of the technology cycle, namely on exploration and creation of markets (Sagar and Majumdar 2014). In summary, the international architecture for technology development and diffusion is misaligned with the requirements of sustainable development.

Unfortunately, the vital importance and complexity of technology development has received barely a mention in the report by the Intergovernmental Panel on Climate Change (IPCC 2014b, Revkin 2014).

#### 5.10.4 Public-Private Technology Partnerships for technology development and diffusion

Innovation systems and the respective roles of private and public actors differ markedly across technology challenges and the maturity of each system (Mowery et al. 2010). Sagar and Majumdar (2014) describe the process of technology development from basic science to proof of system, manufacturing, and diffusion (Figure 7). Multiple feed-backs exist between the different stages, and each stage requires different types and volumes of funding. The funding transition from one stage to the next can create ‘valleys of death’ where promising technologies founder.

Figure 7: Stages of the technology cycle



Source: Sagar and Majumdar (2014)

Each investment partnership for the SDGs, but most notably the transition to low-carbon energy, sustainable agriculture, universal secondary education, and universal health coverage, will need dedicated Public-Private Partnerships for Technology (PPPTs) to achieve targeted breakthroughs in

technological performance. Contrary to the generally open-ended discovery process of science, such partnerships must be designed to address specific technology challenges and solve clearly defined problems. The difficulty in designing effective PPPTs lies in striking the right balance between goal-orientation and ensuring bottom-up innovation and creativity.

Such PPPTs can be organized around four key steps:

1. **Set bold goals for technologies and their adoption including interim milestones** to achieve the SDGs. Such goals should pay particular importance to the under-served needs of the poor, the natural environment, and other global public goods. Examples for such goals might include low-cost drought resistant maize by 2025 or zero tailpipe emission for light-duty vehicles by 2030.
2. **Identify the best modalities for public-private cooperation and cost sharing** of the RDD&D for the new technologies across all stakeholders: public, private, philanthropic, and other sectors. Sagar and Majumdar identify three mechanisms: (i) project development partnerships, such as the GAVI-sponsored Meningitis Vaccine Project, which are akin to virtual R&D organizations, (ii) Advanced Research Project Agencies (ARPAs) modeled after the US Defense Advanced Research Project Agency (DARPA), which provide through leadership, funding and stewardship of breakthrough technologies; and (iii) innovation prizes. Each public-private cooperation modality needs to determine how demonstration projects can be designed and funded.
3. **Organize and finance intellectual property** to give incentives for technological breakthroughs while respecting the urgency of access for all countries to the resulting technologies, including the poorest. Public finance will play an important role in making technologies more widely available, including through financing research that then stays in the public domain, as well as co-financing for licensing privately held technologies, particularly for developing countries. As described elsewhere in this section, the financing arrangements and modalities for technology diffusion need to be managed as an integral part of the public-private investment partnership for the SDGs.
4. **Ensure global monitoring and oversight of the PPPTs** that is ethical, transparent, and prudent.

As one example, the SDSN's Deep Decarbonization Pathways Project (SDSN and IDDRI 2014) is working with the World Business Council for Sustainable Development (WBCSD), the International Energy Agency (IEA), and the World Economic Forum to develop the prototypes for future PPPs for Low-Carbon Technology. These partnerships aim to define the priority technologies and performance targets that should be pursued by government and industry, with relevant timetables and milestones. Similar efforts should be organized in the other areas of concern, such as agriculture, health, and education.

## **6 Mobilizing resources for the SDGs: Public finance and private investments**

All available analyses of financing needs converge on the finding that substantially more public and private finance is required across all dimensions of sustainable development (Table 2, Annex 1). Since public finance acts as a lever for private resources, particularly for long-term investments in infrastructure and public goods, the 2015 Conference on FSD must explain where new and additional sources of public finance will come from.

Domestic resource mobilization will take precedence over international public finance, but ODA and public climate finance will need to play an important role for the reasons explained in this report. We fully recognize the difficulty of raising additional tax resources, particularly given the fiscal constraints experienced by most developed countries, so creative answers will need to be developed and no stone can be left unturned in the quest for additional international public finance.

### **6.1 Domestic resource mobilization and efficient resource use**

Under a post-2015 framework, there can be no ‘right’ to ODA or concessional climate finance unless a country is also mobilizing domestic resources within its means. Rapid economic growth in most developing countries has substantially increased domestic resource mobilization. Most of the absolute increase reflects growth in middle-income countries, though domestic public finance has also doubled in low-income countries (UN 2014). This trend should continue further, and it should be underpinned by clear standards and expectations for ODA and climate finance. For example, the SDSN (2013) has proposed that developing countries might be expected to raise at least 20 percent of GNI in domestic resources. This benchmark is consistent with an analysis by UNDP (2010) that has also been cited by the IMF, OECD, UN, and World Bank (2011). For low-income countries this benchmark should probably be in the range of [17-18] percent of GNI.

In many sectors international minimum standards exist for domestic resource mobilization. Examples are the Abuja Targets in health and the Maputo targets for agriculture. These spending targets are important and can mobilize substantial additional resources if met. This is particularly so if these spending targets are embedded in a broader framework for shared responsibility, as embodied in the African Union Roadmap on Shared Responsibility and Global Solidarity for AIDS, TB and Malaria Response in Africa (AU 2012). However, the sum of existing sector targets for domestic resource mobilization may exceed total resources that can reasonably be mobilized in some poor countries (Hagen-Zanker and McCord 2011), so a comprehensive approach to domestic resource mobilization is needed across all SDGs, as explained further below.

The World Bank (2013a) and the Intergovernmental Committee of Experts on Sustainable Development Financing (UN 2014) provide a comprehensive summary of the steps countries can take to strengthen their domestic resource mobilization. The key priorities are:

**Improve taxation capacity and tax compliance:** Many countries must invest in strengthening systems to assess taxes, collect payments, and enforce compliance. This is an area where more and better international technical and financial support is needed, particularly in low-income and fragile countries. The OECD (2014a) points out that only 0.07 percent of ODA to fragile states is directed towards building accountable tax systems even though these countries collect only 14 percent of their GNI in taxes.

**Improve expenditure efficiency and address inefficient subsidy schemes:** Governments around the world (not just in developing countries) need to strengthen expenditure and investment management, reform subsidy programs, and improve public procurement. UN (2014) highlights that in 2011 pre-tax energy subsidies amounted to \$480 billion, mainly in developing countries. While some of these subsidies provide important social safety nets for low-income households, there is scope for significant revenue generation through the phasing out of poorly targeted subsidy schemes.

**Open government data:** Publicly accessible information on budgeting processes, expenditure management, and other government functions allows citizens and other stakeholders to follow money from resources to results, which can in turn increase the efficiency of public expenditure and reduce corruption. Famously, Uganda was able to increase the share of budgeted public expenditure reaching schools from 13 percent to over 90 percent by making information on budgets, disbursements, and results publicly accessible (Hubbard 2007). Many countries – developed and developing countries alike – should do more to open their government data, but the challenge is particularly acute in sub-Saharan Africa and the Middle East (IGB 2012).

**Use natural resources effectively:** Developing countries that are rich in natural resources need to harness sustainable streams of natural resource revenues and direct them towards poverty-reducing and growth-enhancing investments. Greater transparency in the allocation of natural resource concessions and the terms of contracts, as well as transparent accounting of all payments received by governments should be important priorities. Disclosing contracts, particularly biddable contracts, can increase domestic resource mobilization. For example, since Peru adopted a transparent, public bidding system requiring disclosure of winning hydrocarbon contracts, there has been a consistent increase in royalty rates bid by the companies (Rosenblum and Maples 2009, Collier et al. 2013). Yet most natural resource companies operating in low-income countries are resident elsewhere, so international rules including on beneficial ownership, tax secrecy, abusive transfer pricing, and ‘publish what you pay’ must be reformed as an urgent priority for FSD (section 6.2).

**Curb illicit financial flows:** Weak national regulation and poor enforcement can encourage illicit financial flows including through organized international crime that are particularly detrimental to poor countries’ abilities to raise domestic resources. Just as in the case of natural resource use, international rules governing tax secrecy, simplified exchange of tax information, money laundering, and beneficial ownership must be part of FSD in order to curb illicit financial flows (section 6.2).

**National Development Banks:** Finally, the Experts Committee on Sustainable Development Financing (UN 2014) also recommends that countries explore the contribution that national development banks could make towards mobilizing public and private resources and directing them towards investments in sustainable development. Such institutions can play a substantial role, particularly in larger middle-income countries that have significant domestic saving.

As important as domestic resource mobilization is, countries’ ability to raise additional tax resources changes with income levels. OECD analysis (Atisophon et al. 2011) suggests that the greatest absolute potential for increased domestic resource mobilization is in upper-middle-income countries. The absolute volumes of additional domestic resource mobilization are limited in low and lower-middle-income countries.

## **6.2 International regulation and transparency to support domestic resource mobilization**

International tax and secrecy havens, massive tax evasion, abusive transfer pricing, harmful tax competition, and corrupt natural resource deals significantly depress countries' ability to mobilize domestic resources (APP 2013, Collier et al. 2013, ONE 2014, Oxfam 2013b, UN 2014, World Bank 2013a). ONE estimates that developing countries lose some \$1 trillion per year through illicit financial flows. Losses of similar magnitude are estimated by other sources cited in World Bank (2013a). Developing countries typically suffer the biggest impact on domestic resource mobilization, as documented by the IMF in the case of corporate tax competition (IMF 2014) or trade misinvoicing (Baker et al. 2014). There can be no doubt that an FSD framework for achieving the SDGs and meeting the international climate objectives must address international rules on taxation, transfer pricing, and transparency.

Of particular importance for the poorest countries are widespread malpractices in the natural resource sector. Anonymous shell companies in offshore locations often hide beneficial owners, which opens the door to corruption and defrauding the public purse. Opaque contract terms invite corruption and allow natural resource companies to abuse the better information (and legal advice) they tend to have access to compared with host governments in poor countries.

Reforming the underlying rules is complex, and many international processes are already underway, such as the OECD's Action Plan on Base Erosion and Profit Shifting (BEPS) mandated by the G20 (OECD 2014f, 2014g). Yet as described below, these processes are not sufficient to address the full set of reforms that developed and developing countries need in order to stop the race to the bottom on tax revenues from multinational corporations and wealthy individuals. In particular, the BEPS process does not involve developing countries as equal negotiation partners and does not address many of the issues most pertinent to poor countries.

While FSD will not substitute for any of these processes, it can and should adopt some core global norms. The literature highlights the following reforms that need to be addressed (APP 2013, OECD 2013b, ONE 2014, Oxfam 2014):

**Transparent beneficial company ownership in all countries:** There is no serious, legitimate reason for hiding the true ownership of companies, trusts, or similar legal structures from the tax authorities, provided that essential safeguards on accessing confidential information are in place. Yet the practice is widespread, not only in offshore tax and secrecy havens but also in some developed countries. Corporate structures and trusts whose ownership is unclear are often at the heart of murky natural resource deals and corruption in developed and developing countries. As part of an FSD framework, countries must resolve that all countries, including their sovereign territories, should require that the beneficial ownership of all companies be transparent and publicly available in open data format. Failure by individual countries to comply with this basic standard should no longer be tolerated.

**Reform of international tax governance:** Key reforms include improving tax cooperation, addressing abusive transfer pricing, and streamlining the taxation of multinational companies. Two thirds of all cross-border business transactions take place between companies belonging to the same group. By artificially overpricing imports and underpricing exports, multinational companies can shift profits to countries with low or zero corporate taxes even if the source of the profits lies elsewhere. As a result, multinational companies pay as little as 5 percent in corporate tax, while smaller local companies pay as much as 30 percent (OECD 2013c). These practices may be legal, but they undermine public resource

mobilization in rich and poor countries alike and tilt the playing field against smaller companies.<sup>43</sup> FSD should recognize this problem as critical for mobilizing public revenues and call on all countries to implement specific measures (APP 2013, Oxfam 2014), such as:

- **Full participation of developing countries in the OECD/G20 BEPS process** or the establishment of new multilateral processes in which developing countries can participate adequately;<sup>44</sup>
- **Greater tax transparency through mandatory country-by-country reports by multinational companies** that detail the number of their employees, physical assets, sales, profits, and taxes (due and paid);
- **Provisions allowing developing countries to withhold corporate taxes from companies operating in their jurisdiction** – just like governments withhold individuals' income taxes.
- **Increased technical support on international taxation and tax audits to developing countries**, including through the Tax Inspectors Without Borders launched by the OECD.

**Automatic exchange of information among tax authorities and taxation of offshore assets:** Developed countries have been increasingly successful in requiring tax havens to share information on assets and taxes paid by non-resident or multi-national companies as well as non-resident individuals. On 29 October 2014 over 50 countries signed an agreement to automatically exchange information among tax authorities on bank accounts. This agreement will make a critical contribution towards combating tax evasion and fraud. Also, tax havens increasingly levy taxes on assets held in their jurisdiction and transfer parts to the governments where the respective individuals and companies reside.

Yet, there is an important snag: Developing countries often lack the infrastructure and technical expertise to share tax information with richer countries and are therefore excluded from agreements to exchange tax information, which all require reciprocity. While the principle of reciprocity makes a lot of sense between two high-income countries, it must not deny poorer countries access to the information they need to sustain domestic resource mobilization for the SDGs. Of course reasonable safeguards have to be in place to ensure that tax information cannot be misused.

Recognizing the importance of exchanges of tax information and poor countries' inability to participate in reciprocal arrangements, FSD should therefore require that low-income countries can receive tax information from high-income and middle-income countries without full reciprocity. Such a requirement would be equivalent to widely-accepted differential pricing arrangements in the pharmaceutical sector, where expensive drugs to treat HIV/AIDS and other major diseases are sold at vastly discounted prices in poor countries.

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<sup>43</sup> An estimated 80 percent of illicit financial flows from developing countries are due to 'trade mispricing' (World Bank 2013a).

<sup>44</sup> The OECD's BEPS involves only 34 countries and excludes some 150 developing countries. Unsurprisingly, it therefore focuses on the priorities of rich countries with hardly any attention paid to the extractives industries. Participation in this process would need to be broadened significantly or be complemented by a strengthened multilateral process, such as the UN Committee of Experts on International Cooperation in Tax Matters (known as the UN Tax Committee) (Oxfam 2014).

**Publish what you pay:** All large companies operating in developing countries – particularly in the extractives and natural resource sectors – should be required to publish contracts as well as all payments to government officials in every country they operate in. Several such standards are available, including for natural resource companies, and have been adopted by Canada, the EU, Norway, and the US. Other countries, including China, have indicated that they may be willing to comply (ONE 2014).

**Open government data:** Transparent and open government data on budgets, procurement, public expenditure, and results is the flipside of ‘publish what you pay’ for corporations. FSD should anchor open government data as a critical component of a resource mobilization strategy and the ‘data revolution’ called for by the High-Level Panel on the Post-2015 Development Agenda (HLP 2013). See also sections 6.1 and 5.6 above.

**Periodic review of key international rules and standards for consistency with achieving the SDGs:** International rules on taxation, business accounting, banking and insurance regulation, the exchange of information between governments, etc. are complex and will evolve in coming years. Moreover, some are governed by private entities that may not respond directly to governments. It will be neither possible nor desirable for FSD to monitor each process or to provide detailed technical guidance on how rules need to evolve to support financing for sustainable development. For this reason we propose that FSD request the standard-setting bodies to report periodically on whether their rules are consistent with achieving the SDGs and staying within 2°C. These reports should be made public and submitted for review and approval to each body’s board or equivalent governance body. If issues are found the organization should recommend measures to be taken by its governing bodies to address the issues. Such ‘consistency checks’ could for example, be requested from the IMF on financial standards, the Bank for International Settlement on global standards for banking and insurance regulation, the International Accounting Standards Board on accounting practices – particularly in relation to transfer pricing, etc. (SDSN 2013, 2014).

**Better enforcement:** Some of these changes may be resisted by a small number countries and companies that currently benefit from opaque rules at the expense of others. As early as 1998 the OECD proposed that member countries terminate their tax conventions with uncooperative tax havens (OECD 1998), but this proposal has since been dropped from official OECD reports. Given the detrimental impact of tax havens on financing for sustainable development, the FSD process might reconsider the original OECD recommendation as a standard that should apply in the 21<sup>st</sup> century. Without credible enforcement of minimal global standards, countries – rich and poor alike – will find it increasingly hard to mobilize the public resources they need to pursue sustainable development.

### **6.3 Reforming the aid system and mobilizing public and other concessional resources**

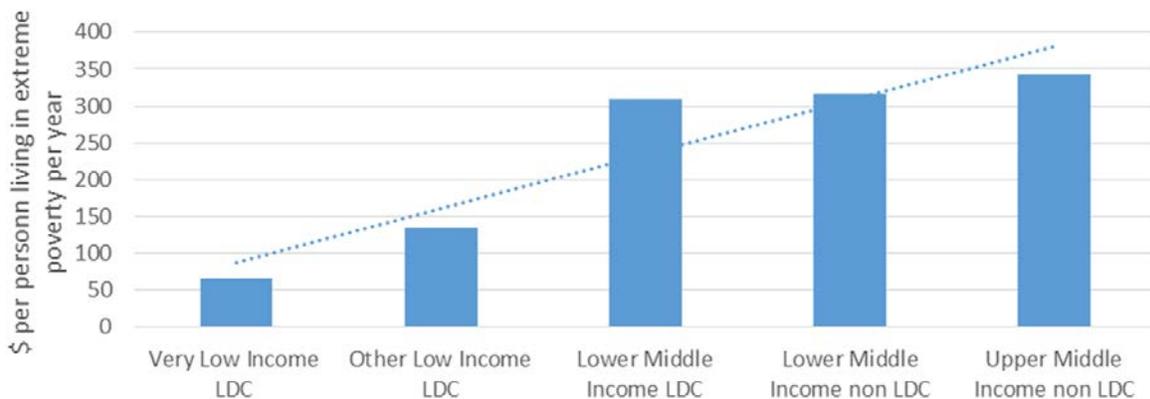
Significant public international development and climate finance will be needed to achieve the SDGs. There’s no getting away from the simple truth that currently available resources are insufficient and must be increased. Clearly, the current macroeconomic and fiscal outlook in many developed countries is unfavorable towards significant increases in ODA. While these developed countries must meet their commitments over time, FSD should also broaden the donor base by including high-income countries that are not members of the DAC and by preparing upper-middle-income countries for their role as donors towards global public goods and the development priorities of poor countries. FSD also needs to set clear standards to improve the targeting of aid and to ensure that scarce public and concessional funds are used effectively. Moreover, every effort should be made to use innovative financing

mechanisms and to mobilize philanthropy for the SDGs. We review practical steps towards mobilizing and targeting ODA in this section. The next section focuses on mobilizing public climate finance.

### 6.3.1 Eligibility for and targeting of aid

Today’s aid does not target the poorest countries that are most in need even if one takes into account that two thirds of the world’s extreme poor now live in middle-income countries. Figure 8 charts country programmable aid per person living in extreme poverty.<sup>45</sup> It shows that upper-middle-income countries receive 4-5 times as much ODA per person living in extreme poverty than the poorest countries whose GDP per capita is below \$500. Other metrics are available to track aid allocation to countries – they all come to the same conclusion that poorer countries receive less aid in per-capita terms (OECD 2014d, ONE 2014, Development Initiatives *forthcoming*).

Figure 8: Country programmable ODA per person living in extreme poverty by country income group



Source: Manuel (2014) based on OECD DAC data.

The share of ODA going to the LDCs has been declining since 2010, while aid to upper-middle-income countries has been rising (OECD 2014e). Available aid projections suggest that concessional loans to middle-income countries will rise while aid to LDCs is expected to decrease further (ONE 2014). Since poorer countries have fewer domestic resources to invest in measures to end poverty a rational allocation of aid should favor them. Such a rational allocation is needed if the world is to end extreme poverty by 2030.

ODA and concessional public climate finance are the most precious forms of international finance since they can finance all manners of public goods. Unfortunately, ODA will continue to be scarce relative to demand for concessional finance, so FSD needs to consider clear standards for *eligibility* and *targeting* of ODA and concessional climate finance. Eligibility criteria determine which countries and which types of projects can qualify for ODA while targeting refers to how ODA should be prioritized among eligible countries and projects.

### ODA eligibility criteria

The Monterrey Consensus rightly follows the subsidiarity principle, whereby the primacy in financing development belongs to domestic resources. In addition to financing global public goods (below), ODA

<sup>45</sup> Country programmable aid excludes volatile aid, such as debt relief and humanitarian assistance. The chart also excludes very small countries and countries with less than 1 percent of extreme poor.

should only be mobilized if a country's resources are insufficient to meet agreed spending needs. For this reason eligibility for ODA and concessional climate finance should be determined at the country level and as a function of a country's ability to self-finance the necessary public investments. Since both domestic resource mobilization and countries' ability to raise funding from private sources are a function of per capita incomes, the latter should form the principal basis for determining eligibility and graduation criteria.

The World Bank country groupings by income group could plausibly form the basis for eligibility and graduation criteria. A shorthand form of grouping countries by their ability to mobilized domestic resources is the World Bank classification of GDP per capita, expressed in 2014 income scale in purchasing-power parity (Annex 2):

- High-income country (>\$12,746)
- Upper-middle-income country (\$4,126-\$12,745)
- Lower-middle-income country (\$1,046-\$4,125)
- Low-income country (<\$1,045)

Yet, income per capita is a crude measure that does not take into account other factors, which might reduce a country's ability to raise domestic resources or creditworthiness. Examples include small-island status (small-island economies have lower credit ratings owing to their small market size), countries located in a region of political instability, and many other factors.

We therefore propose that eligibility for ODA grants – excluding technical assistance – be restricted to countries that are eligible for concessional lending from the International Development Association (IDA) at the World Bank. In 2014 all low-income countries as well as lower-middle-income countries with a GDP per capita of less than \$1,215 (expressed in purchasing power parity) qualify for IDA. In addition the IDA category includes some countries with a higher per capita GDP that cannot borrow from on non-concessional terms from the International Bank for Reconstruction and Development (IBRD), such as small-island economies and countries facing other challenges. Some IDA countries also qualify for IBRD lending. We proposed to include these 'blend' countries among the countries eligible for ODA and concessional climate finance without any caveats, but note that a careful review of 'blend' countries is needed to ascertain which should retain general eligibility for ODA since some have a GNI per capita in excess of \$2500 per capita.

ODA funding for global public goods located in ODA-eligible countries fulfills a special need under the SDG agenda and should be independent of country eligibility criteria. Examples include climate change mitigation (section 5.6), technology development and diffusion (section 5.10), ecosystems and biodiversity (section 5.4), or pandemics like Ebola in West Africa. An important focus on the FSD discussions must be to overcome the artificial distinction between country-focused ODA and the financing of global public goods. Both may require concessional international (co-)financing, so ODA should fill those financing gaps that cannot be closed through domestic or private resources. However, it is important to retain ODA as a financing tool for developing countries: the public concessional financing for global public goods located in non-ODA eligible high-income countries (e.g. technology development) should be financed through Other Official Flows instead of scarce ODA. See section 3.6 for a complementary discussion of financing needs for global public goods.

### ***ODA targeting within eligibility criteria***

Within the broad IDA band a clear focus must be placed on the low-income Least Developed Countries (LDCs – see Annex 2 for a grouping of countries). It is sometimes argued that current capacity constraints in the poorest recipient countries make it impossible to deliver adequate aid effectively, but this strikes us as an excuse for inaction. Properly programmed aid can help build systems that over time can absorb rapidly growing volumes of external finance.

The long-standing commitment to provide between 0.15 and 0.20 percent of GNI in ODA to the LDCs remains unfulfilled for most donors today. As a more operational metric, the DAC Secretariat has proposed that every donor should allocate at least 50 percent of total aid to LDCs against 32 percent of all ODA from DAC members in 2012 (OECD 2014e). The ICESDF is broadly supporting this target in its report (UN 2014). The 50 percent target should be considered as part of an overall framework for aid eligibility and graduation.

A second dimension of targeting regards the types of investments ODA should support. We propose that as a general principle ODA be targeted towards poverty eradication and public goods (section 3.1) that directly support the achievement of the SDGs. We support the idea of explicit poverty markers in ODA reporting that make it possible to trace the ‘poverty focus’ of ODA spending.

#### *How might ODA eligibility and targeting work?*

The eligibility and graduation criteria might function as follows (important caveats are described below):

- **IDA-eligible countries** are eligible for ODA and concessional climate finance. This group covers a highly diverse set of countries ranging from extremely poor countries in conflict, such as Somalia and the Central African Republic, to stable lower-middle-income countries with substantial domestic resources, such as Ghana and Mongolia. So care should be given to ensure that – contrary to the prevailing practice – the poorest countries that are most in need of concessional public finance receive the largest per capita allocations. **At least 50 percent of every donor’s ODA should go towards LDCs.**<sup>46</sup>
- **Non-IDA eligible lower-middle-income countries** should not receive ODA in the form of grants except under special circumstances, such as post-conflict settings, following natural disasters, or in the case of other special needs such as high disease burdens. These countries should, however, remain eligible for technical assistance, as requested, as well as loans from the MDBs with interest rates that correspond to the borrowing rates of the high-income members of these institutions plus the cost of the additional administrative burden. In effect, the non-IDA lower-middle-income members receive a partial subsidy, not in the form of grant financing, but in the form of borrowing at a near risk-free market interest rate. Moreover, such financing can be accompanied by export and investment guarantees by national and international entities, which make it much easier for private companies to invest abroad.
- **Upper-middle-income countries** have the means to finance the public investments needed for poverty alleviation and do not require ODA. If requested these countries should receive modest technical assistance to support them in achieving the SDGs. They should not benefit from subsidized MDB loans or subsidized contingency lending capacity (section 5.8). At the same time these countries should prepare themselves to become donors to poorer countries (see section

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<sup>46</sup> OECD (2014d, p. 42) proposes another sub-grouping of ODA eligible countries.

6.3.3). As described in the caveats below, there may be exceptional circumstances under which these countries receive ODA, such as when a high infectious disease burden poses a risk to other countries.

- **High-income countries** should all provide ODA and climate finance subject to the standards described in the next section. They are able to pay commercial rates for any technical assistance they may require.
- **Global public goods** should be financed according to their priority and using ODA provided the funding goes to a developing country – regardless of that country’s income category. Global public goods in non-ODA eligible countries require financing through Other Official Flows.

A few important caveats and limitations are in order: First, while we believe that clear and transparent eligibility and graduation criteria are important to use scarce public finance effectively, we recognize the need for flexibility to respond to exceptional circumstances. In particular one needs to avoid the abrupt discontinuation of ODA, which might have adverse consequences on public finances in some middle-income countries, particularly fragile lower-middle-income countries (a point made in particular by Kharas 2014).

Second, in some cases modest grant funding should be made available to non-IDA middle-income countries to help address special needs of vulnerable populations or challenges that might pose a risk to neighboring countries, such as a high infectious disease burden. For example, the GFATM has been very successful in addressing infectious diseases in several high-income countries. It currently allocates some 17 percent of total resources (including ‘incentive funding’) from the latest replenishment round to countries with incomes in excess of \$2000 PPP per capita (calculated from GFATM 2014d). One reason for this relatively high allocation to non-IDA countries is that pooled multilateral finance mechanisms like the GFATM have a greater ability to work in middle-income countries. Correspondingly, the bilateral ODA share to non-IDA countries (excluding technical assistance) should trend towards zero. However, grant funding to upper-middle-income countries that have the domestic resources to finance the SDGs should be used sparingly and as a last resort to avoid problems of ‘moral hazard’ whereby domestic responsibilities are offloaded to the international community.

Third and as mentioned above, the proposed eligibility and graduation formula does not cover technical assistance, which should continue with middle-income countries that request such assistance. Well-designed technical assistance can make important contributions in middle-income countries.

Finally, these graduation criteria do not imply an automatic provision of ODA and public development finance. Where private finance can replace public funding (e.g. for an infrastructure project), the former should usually take precedence. Likewise, recipient countries need to mobilize domestic resources and demonstrate that they can use incremental ODA and climate finance effectively (section 6.1).

### **6.3.2 Honoring existing ODA commitments**

High-income countries that are part of the DAC need to honor their existing commitments to provide 0.7 percent of GNI as ODA. Currently, DAC members provide 0.3 percent of GNI on average with only Denmark, Luxemburg, Norway, Sweden, and the UK reaching or exceeding the 0.7 percent threshold. Notably, the highest share of ODA is provided by the United Arab Emirates, a non-DAC member who provided 1.25 percent of GNI in 2013 (OECD 2014d).

If all DAC members had reached the agreed 0.7 percent threshold in 2013 an additional \$184 billion would have been mobilized. At current GNI, each increase by 0.1 percentage points yields an additional \$45 billion per year. In the short term, the fiscal crisis in many high-income countries will make it difficult for this group of countries to achieve this target. Therefore we propose that FSD adopt a medium-term target that each country should cut by half the gap to 0.7 percent by [2018]. If countries that have already reached the ODA target stay at the same level such a medium-term, halve-the-gap target would increase ODA by \$94 billion to some \$229 billion.

### **6.3.3 Expanding the donor base to include non-DAC countries**

Opportunities for broadening the donor base, particularly for pooled financing mechanisms, are illustrated in Table 3. While most DAC members have contributed to one of the three pooled financing mechanisms reviewed in the table (GFATM, GAVI, and GEF-5), participation rates from non-DAC high-income countries are low. Given that many of these countries are relatively small, their modest volumes of aid come with relatively high transaction costs, which make pooled financing mechanisms a particularly important and attractive disbursement channel for non-DAC high-income countries. A number of MICs have participated in pooled financing mechanisms, which underscores their commitment to effective aid – even though the volumes of disbursements to pooled financing mechanisms have been modest in relation to most contributing MICs' GNI. Finally, the table also underscores the important and growing contributions from private philanthropy for the health mechanisms.

Other high-income countries that are not currently part of the DAC (see Annex 2) should contribute at the same level (expressed in percent of GNI) and with similar transparency as the members of the DAC. There is simply no reason why high-income countries whose per capita GNI is much higher than that of some DAC members do not contribute their fair share. If all non-DAC high-income countries honored the same commitments as DAC members, they would contribute between \$22 billion (at 0.35 percent of 2013 GNI, i.e. half way to 0.7 percent) and \$37 billion ODA disbursements for 2013 by the OECD DAC (OECD 2014c).

**Table 3: Donors who have contributed to key pooled financing mechanisms**

<b>Mechanism</b>	<b>GFATM (2011-2013)</b>	<b>GAVI (2011-2013)</b>	<b>GEF-5</b>
Donors who are members of the DAC	Australia, Belgium, Canada, Denmark, European Commission, Finland, France, Germany, Japan, Korea (Republic of), Luxembourg, Netherlands, Norway, Sweden, Switzerland, United Kingdom, United States	Australia, Canada, Denmark, European Commission (EC), France, Germany, Ireland, Italy, Japan, Luxembourg, Netherlands, Norway, Republic of Korea, Spain, Sweden, United Kingdom, United States of America	Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Korea, Republic of, Luxemburg, Netherlands, New Zealand, Norway, Portugal, Slovenia, Spain, Sweden, Switzerland, United Kingdom, United States
Non-DAC government	Brunei Darussalam, China, Georgia, India, Kuwait, Liechtenstein, Malaysia, Namibia, Romania, Russia, Rwanda, Saudi Arabia, South Africa, Thailand, Tunisia	Brazil, India, OPEC Fund for International Development (OFID), Russia, South Africa, United Arab Emirates	Brazil, China, Czech Republic, India, Mexico, Nigeria, Pakistan, Russian Federation, South Africa
Private philanthropy	Bill & Melinda Gates Foundation, Communitas Foundation, UNITAID, Anglo American plc., Bank of America (RED), BHP Billiton, Chevron Corporation, Comic Relief, Ecobank, Idol Gives Back, Gift From Africa, M·A·C AIDS Fund, (PRODUCT) RED™ and Partners, Tahir Foundation, Takeda Pharmaceutical, Vale, The United Nations Foundation, Hottokenai Campaign (G-CAP Coalition Japan), LMI (Lutheran Malaria Initiative), United Methodist Church	Absolute Return for Kids (ARK), The A&A Foundation, Anglo American plc, Bill & Melinda Gates Foundation, Children’s Investment Fund Foundation , Comic Relief, Dutch Postcode Lottery , ELMA Vaccines and Immunization Foundation, JP Morgan, La Caixa Foundation, LDS Charities, Lions Club International (LCIF), Prudential, Statoil	none

Sources: GFATM lists donors who have contributed during 2011-2013 (GFATM 2014b); GAVI lists donors who have contributed during 2011-2013 (GAVI 2014b); GEF-5 lists donors who have contributed to the fifth replenishment round of the GEF (GEF 2014b)

Most upper-middle-income countries (see Annex 2) are also providing rapidly growing volumes of public development finance (South-South Cooperation). As the World Bank (2013a) underscores, Brazil, China, and other upper-middle-income countries play an important role, particularly in Africa and in sectors that do not receive adequate funding from traditional DAC donors. Emerging donors support investments in transport and power infrastructure that have made important contributions to the recent growth spurts in many African countries. We are very hopeful that the Asian Infrastructure Investment Bank and the New Development Bank recently announced by the BRICS countries will provide much needed financing at scale to infrastructure and other project types across low-income and lower-middle-income countries.

FSD should establish as a principle that every upper-middle-income country contribute a fair share in international public financing towards the shared SDGs in preparation for these countries becoming

high-income countries themselves. We propose that a minimum threshold of 0.1 percent of GNI be established, which corresponds to \$20 billion in development finance using 2013 GNI. Note that only a share of this financing would be incremental – since Brazil, China, India, and Thailand provided an estimated \$3.6 billion in net ODA during 2011, which is equivalent to some 0.03 percent of their GNI (OECD 2013a). Such a standard would be particularly important for China, which may become a high-income country in 2020 – some ten years before the target date for the achievement of the SDGs.

Yet increasing and common aid commitments from non-DAC countries and philanthropies must go hand in hand with more transparent reporting. Today, there is little verifiable reporting available on aid from non-DAC countries, which contributes to a sense among some analysts that this aid may be of insufficient quality and transparency. Similarly, private philanthropists should follow the example of Gates Foundation, which reports its giving using DAC standards (see also section 6.3.7).

We recognize that for many reasons many non-OECD donor countries will not automatically sign up to the DAC, which they regard as an OECD-governed institution. There is an important case for a new Multilateral Donor Reporting Mechanism that shares governance among all donor countries, both OECD and non-OECD donors, as well as recipient-country governments and other stakeholders. Such a new mechanism should be a major outcome of FSD (section 6.3.7).

#### **6.3.4 Mobilizing private philanthropy: a Giving Pledge for the SDGs**

Another important source of grant funding comes from private giving, which on some accounts (Hudson Institute, 2013) has been estimated to be \$60-70 billion per year or nearly half of official ODA disbursed by all DAC members. While this high number is somewhat doubtful, and probably inflated, the actual sums are no doubt significant. According to these estimates, the US dominates philanthropic giving to developing countries with \$39 billion transferred in 2010 (Hudson Institute 2013, World Bank 2013a). Efforts must be increased to include these private flows in reporting on international aid.

Warren Buffet and Bill and Melinda Gates announced the Giving Pledge in 2012 aiming to convince billionaires to donate at least half their net wealth for charitable causes including development aid. The Giving Pledge has since secured some 127 pledges from 12 countries. It does not disclose the volume of funding raised, but it has been estimated at over \$250 billion.

According to Wealth-X (2014) there were 2,325 billionaires worldwide in early 2014 owning some \$7.3 trillion in assets. If a random half the world's billionaires signed the Giving Pledge and donated half their wealth, this would yield around \$1.8 trillion in assets. Assuming further that only 20 percent of these billionaires commit their wealth to achieving the SDGs this would yield an annual flow of \$18 billion in perpetuity at a 5 percent annual payout. These numbers could be significantly higher if other ultra-high net worth individuals owning less than \$1 billion in assets are included.

The key point is that private wealth can make a very substantial contribution towards financing the SDGs, particularly if funders consider creative ways of investing for greatest impact. Just like Bill and Melinda Gates have used flexible and results-based funding to support a vibrant ecosystem of advocacy and research institutions in health, other major philanthropists could do the same in education, water and sanitation, biodiversity, or other public-private investment challenges (section 7.2).

A central principle of giving for the SDGs might be to support existing institutions where possible. Signatories of the Giving Pledge could be encouraged to channel their resources through the major multilateral pooled financing mechanisms that will be at the center of successful goal-based public-

private investment partnerships for the SDGs. Alternatively, they can scale up efforts of other successful philanthropies – just like Warren Buffet decided to channel his giving through the Gates Foundation.

As one inspiring example, Dr. Tahir of Indonesia has donated \$65 million to the GFATM and is now mobilizing Indonesian philanthropists to contribute to the Indonesia Health Fund, which aims to raise \$100 million for health programs in the country. Similarly, Patrice Motsepe of South Africa has announced a significant contribution to (RED), and GFATM is launching campaigns for high-net-worth individuals in Viet Nam, India, the Philippines, and the Arab world (personal communication GFATM).

### **6.3.5 Innovative financing mechanisms**

Several new innovative financing mechanisms have been explored by the Landau commission (Landau 2004), the High-level Advisory Group on Climate Change Financing (UN 2010), and many others (UN 2014). Many different mechanisms have been proposed, including taxes on key sectors (e.g. aviation, maritime shipping), taxing tobacco use (Gates 2011), lotteries, financial transaction taxes, taxing assets held in offshore tax havens, voluntary contributions, or various forms of leveraging public balance sheets, such as the creation of additional IMF Special Drawing Rights. Yet, today the potential of innovative financing mechanisms remains largely untapped: They mobilize \$2 billion per year – a significant amount but one that pales in comparison with total ODA of \$127 billion in 2012 (OECD 2014d).

Two headline categories of innovative financing mechanisms stand out as having the greatest potential for resource mobilization: (i) direct or indirect taxes on greenhouse gas emissions and key emitting sectors; and (ii) financial transaction taxes. We discuss the former in section 6.3.6 and focus here on financial transaction taxes. Other innovative financing mechanisms can make important contributions towards raising resources for specific uses, but they will play a marginal role in the overall picture of development finance.

The discussion of financial transaction taxes has a long history. Following the 2008 financial crisis a growing number of economists believe that such taxes may be feasible on a regional or national basis, and that they could contribute to the stability of the financial system while mobilizing substantial resources. Naturally, other economists disagree with these assertions. This report is not the place to discuss whether financial transaction taxes can increase the stability of the financial system, so we focus on their revenue-generating potential.

The EU is currently discussing the introduction of a small levy on financial transactions among 11 of its members (including France, Germany, Italy and Spain), and has set a deadline of December 2014 for reaching an agreement. The first phase of this tax would see a levy of 0.1 percent (some suggest higher - up to 0.5 percent) applied to transactions in shares, and a much lower rate (less than 0.01 percent) applied to certain categories of derivatives (with the rate potentially adjusted by type of asset and maturity). Further phases of the tax would extend the levy to bonds and other derivatives. The EU Commission estimates that a broad-based tax may generate some €34 billion per year for national governments, and the French Government has suggested that a portion of this should be devoted to providing climate finance and ODA. Based on this example it seems reasonable to assume that a financial transaction tax introduced in key markets might generate some \$50 billion annually in ODA or concessional climate finance flows. Of course, the actual sums could be much higher if all countries adopted such a tax, but this seems unlikely at present.

### 6.3.6 Mobilizing Climate Finance

Developed countries have pledged \$100bn in additional climate finance by 2020 and cumulative fast-start finance of \$30bn from 2010 through to 2012. According to their own reporting, developed countries have exceeded the fast-start climate finance goal by some \$5bn, but much of this finance was neither new nor additional. Some 80 percent of fast-start finance were also reported as ODA (Nakhouda et al. 2013), thus undermining the notion that climate finance would be additional to development finance. As reported by CPI (2013) overall climate finance flows flat lined in 2012 at some \$358 billion – far below even the most conservative estimates of investment needs.

The FSD process – in coordination with the UNFCCC negotiations – will need to identify how additional public climate finance of some \$100 billion annually can be mobilized in coming years. Such levels of public financing are needed to leverage the required private investment flows (enabled of course by supportive policies including an adequate ‘price on carbon’ – section 5.7), pay for adaptation measures for which there is no market, finance RDD&D for clean technologies, and support developing countries’ efforts on mitigation and adaptation. Unless substantial volumes of additional climate finance are mobilized it is difficult to see how a global agreement to achieve 2°C can be reached or implemented.

Currently, climate finance negotiations in the UNFCCC have yet to converge on transparent standards for levying climate finance. We believe that an assessment-based approach for mobilizing climate finance should be considered even though this is not aligned with the bottom-up pledging rounds for climate finance and contributions to the GCF that are currently pursued under the UNFCCC. The motivation for an assessment-based approach are threefold: (i) curbing climate change is a global public good that requires fair and transparent resource mobilization in order to reduce the risk of free riding; (ii) there are large differences within the groups of developed and developing countries that need to be considered in mobilizing climate finance, and (iii) the distribution of per GDP as well as capita greenhouse gas emissions is likely to change substantially in coming decades. A dynamic assessment formula provides a clear and transparent framework for periodically updating countries’ contributions to climate finance.

An assessment-based financing model for the GCF could be based on a country’s per capita level of income (suitably adjusted for special needs) and its greenhouse gas emissions. The combination of these two criteria will help ensure that all countries contribute towards climate change mitigation and adaptation based on their ability to pay and their contributions towards global emissions. Financing would then be determined through annual ‘assessed contributions’ using the following formula:

$$\text{Assessed climate finance contribution} = \text{GDP Factor} \times \text{CO}_2 \text{ Emissions} \times \text{CO}_2 \text{ Assessment Rate}$$

As discussed in section 6.3.1, IDA eligibility provides a useful expansion of a straight GDP factor since it takes into account countries’ special needs. Using such an expanded definition, the *GDP Factor* (as of 2014) might be as follows:

- High-income country (>\$12,746): 1.0
- Upper-middle-income country (\$4,126-\$12,745): 0.5
- Non-IDA lower-middle-income country (\$1,046-\$4,125): 0.10
- Low-income country (<\$1,045) and IDA lower-middle-income countries: 0.0

The *Assessment Rate* is expressed in \$/ton of CO<sub>2</sub>. If one assumes for illustration that some \$100 billion would need to be raised every year in public financing, then the appropriate level of assessment is some \$5 per ton of CO<sub>2</sub> emission at today’s levels of greenhouse gas emissions. The assessment rate could be

fixed every five years to produce the targeted funding stream. Of course the values of these parameters are illustrative only and can be revised as necessary.

We propose that resource mobilization be based on consumption-based estimates of greenhouse gas emissions, which assign greenhouse gas emissions related to the export and import of products to the country where the goods are consumed. Such consumption-based estimates probably provide a truer picture of a countries' carbon footprint, by shifting a larger share of the financing to countries that import commodities and energy-intensive products. See Sachs and Schmidt-Traub (2013) for an illustration of how such an assessment might work.

Practically, such an assessed contribution could be collected in the form of a carbon levy from the fossil fuel industry (akin to levies on cigarettes imposed on the tobacco sector). Alternatively, they could be financed out of a country's general tax revenues.

### **6.3.7 Improved reporting and monitoring of aid and climate finance**

Transparency and effective monitoring are central to ensure that commitments to mobilize resources are honored and to build the trust that is needed for the international partnership to achieve the SDGs and the climate objectives. While there have been significant improvements in the way aid and climate finance are monitored – notably thanks to the work of the OECD DAC, the IMF/World Bank, the Aid Transparency Initiative (IATI), and numerous NGOs including the Climate Policy Initiative for climate finance and DATA for ODA – today's monitoring and reporting systems for public international finance are deficient in four ways described below. Reporting on international private flows is even more difficult and spotty (e.g. CPI 2013, UNCTAD 2014).

#### **1. Insufficient transparency and major gaps in the monitoring aid from donors**

Efforts by the OECD DAC combined with the launch of IATI in 2008 have led to a step-change in the availability of timely, forward-looking and comprehensive data on aid. Since 2011, nearly 300 organizations have published information in IATI's common, open, data format including bilateral donors, multilateral institutions, national and international NGOs, philanthropic foundations and development finance institutions.<sup>47</sup> Yet, transparency is not improving fast enough, and to date only a minority of donors is on track to fully meet their IATA commitments agreed at the 2011 Busan High-Level Forum on Aid Effectiveness. The 2014 Aid Transparency Index shows that many donors – particularly bilateral ones – still have poor or very poor aid transparency (Publish What You Fund 2014). Under FSD all donors should fully implement IATI. The IATI principles should also be extended to the monitoring of climate finance, where monitoring systems tend to be much less effective and transparent than for ODA (see below).

While South-South Cooperation, including aid from non-DAC high-income and upper-middle-income countries, is expanding, data from emerging donors is at best patchy. The need for South-South Cooperation providers to “continue to improve the availability of information on the scope, results and impacts of their cooperation actions” was noted in the consensus communiqué from the High-Level Meeting of the Global Partnership for Effective Development Co-operation in Mexico (GPEDC 2014). Although some non-DAC donors provide data to the DAC, others voice concerns about joining DAC

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<sup>47</sup> Available at <http://www.iatiregistry.org/>. A major challenge for IATI remains to make its data available in easily accessible forms – currently it takes deep expertise and significant effort to translate the IATI data in policy messages.

mechanisms that are dominated by ‘traditional donors’. The DAC is working with non-DAC donors to improve reporting – any provider of aid is invited to participate in the DAC Working Party on Development Finance Statistics, but better systems are needed. One option is to expand the work of the DAC to cover non-DAC donors, another is to further develop the IATI standard to fully capture South-South Cooperation, and a third would be to create a new Multilateral Donor Reporting Initiative that builds on the DAC and IATI, but has a broader governance model, which addresses the needs of non-traditional donors (see below).

### **2. Unclear and potentially self-serving standards on what to count as aid**

Since today’s definition and reporting on public international finance are donor-led it is not surprising that despite valiant efforts by the DAC secretariat, today’s aid reporting comprises categories that should perhaps not be included under ‘aid.’ Examples include some flows that are essentially commercial in nature; some military and security-related expenditure; spending on refugees in developed countries; imputed costs for students from developing countries studying in donor countries when there is no expectation that these students will return to their countries of origin; the accounting of debt relief at face value; or the non-consideration of debt repayments from countries that have graduated from ODA. Moreover, significant shares of ODA are double counted as ‘climate finance’, which undermines the spirit of the Cancun agreement. On the flipside, current definitions of ODA are seen as discouraging the use of risk-mitigation instruments described in section 5.8.2.

These issues of definition and additionality of ODA, as well as the counting of other official non-ODA flows, have been raised repeatedly by the DAC Secretariat, which is proposing ways to address them (OECD 2014d, 2014f, and Solheim 2014).<sup>48</sup> These and other suggestions should be implemented as a matter of priority in the run-up to FSD – drawing also on the emerging IATI standards for official flows.

### **3. Unclear standards on what to count as climate finance**

Data on climate finance from developed countries is collected through the same system as ODA using the DAC’s ‘Rio Markers’ to identify climate finance.<sup>49</sup> Unfortunately, transparent and common definitions of the ‘additionality’ of climate finance largely do not exist.<sup>50</sup> As a result, few recipient countries trust donors’ assertions that they are on track towards meeting their climate finance commitments.

Care must be taken in defining additionality since many climate projects offer significant socio-economic benefits beyond reducing greenhouse gas emissions or adapting to climate change. In other words, climate finance is broader than just financing climate change mitigation or adaptation. It is therefore important that definitions of additionality for climate finance agreed under the UNFCCC do not adopt a

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<sup>48</sup> Erik Solheim (2014), the chair of the OECD DAC has identified four main necessary shifts in ODA reporting: (i) score only the grant element of loans and other financial instruments as ODA, as opposed to their full face value; (ii) use a more appropriate discount rate for calculating the grant element (as opposed to the current 10 percent rate); (iii) standardize the reporting of ‘in-donor’ components of ODA to improve their legitimacy, transparency and comparability, thereby addressing criticisms of ‘phantom ODA’; and (iv) channel an increased share of ODA to the countries most in need and counter the trend of declining ODA levels to LDCs.

<sup>49</sup> The DAC’s ENVIRONET and the Working Party on Development Finance Statistics (WP-STAT) are working to improve the coverage and quality of DAC statistics as an input into the UNFCCC. Updated data is scheduled to become available in December 2015 at <http://oe.cd/RM>.

<sup>50</sup> ODI (Nakhoda et al. 2013) note that among the five largest contributors to fast-start climate finance only Germany has proposed a definition of additionality for its contribution.

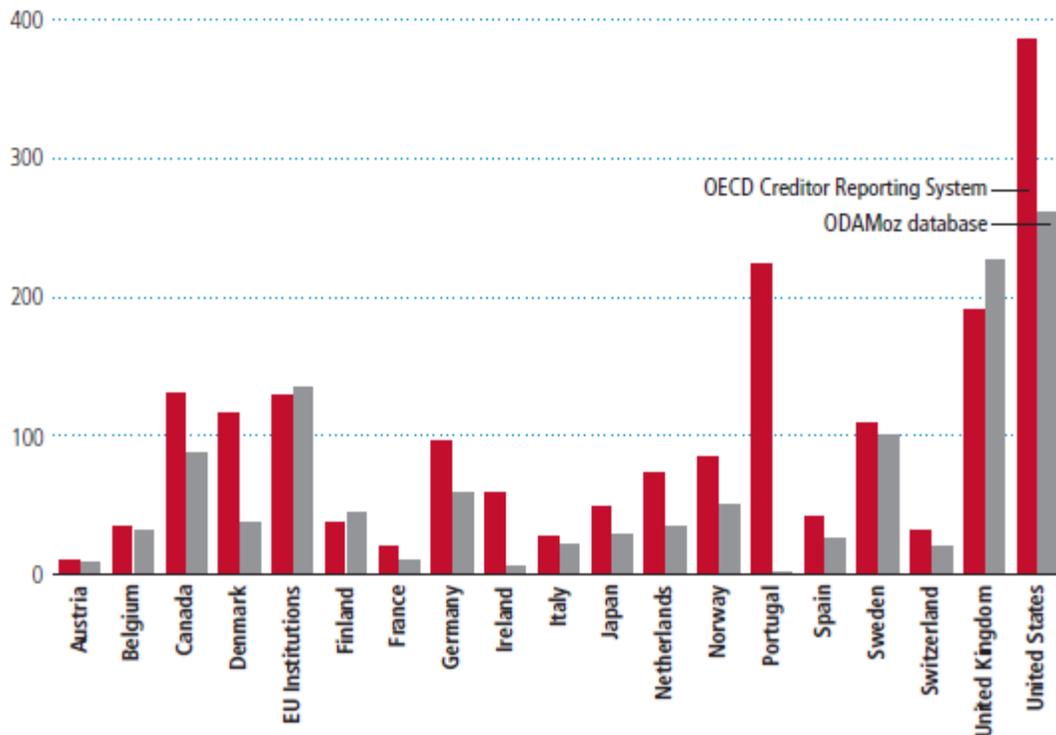
narrow view on how the resources can be spent since this might divert funding from highly meritorious initiatives that have non-climate co-benefits.

It therefore seems most practical and prudent to define additionality of climate finance at the source. Climate finance should be deemed additional if it is incremental to a reasonable baseline of concessional financing mobilized by the donor country. While climate finance operates under the responsibility of the UNFCCC it is important to coordinate standards for reporting and additionality with ODA standards in order to increase coherence and avoid double counting.

#### 4. Insufficient recipient reporting

Today’s monitoring of aid and climate finance flows depends on reporting from aid donors and should be complemented by systematic recipient reporting. Since aid can be provided to many different actors (governments, NGOs, consulting companies, etc.) and in different forms, most developing countries cannot quantify aid flows, and we do not really know exactly how much aid is transferred to developing countries (Development Initiatives 2013). Where recipient countries have conducted detailed assessments of ODA, their numbers often do not match the donor reporting provided through the DAC (Figure 9).

**Figure 9: Aid reported by donors for Mozambique exceeds aid recorded as received in Mozambique (both on and off budget) by 50 percent on average (in \$ million, 2011)**



Source: Development Initiatives (2013)

Genuine ‘double entry’ bookkeeping by donors and recipients alike will help identify such discrepancies in reporting; help address issues of aid fragmentation, donor coordination, and predictability of aid commitments; promote a dialogue on what to count as aid; and improve the public financial

management in recipient countries. The same question of recipient reporting will also need to be addressed for climate finance under the UNFCCC.

To the extent possible, such recipient reporting should be based on existing systems to minimize transaction costs. Promising candidates are national Aid Management Systems (AIMS) that capture incoming flows in most recipient countries.<sup>51</sup> Yet, AIMS currently rely on the manual input of data provided in-country by donors. This data is often not supplied in a timely manner and tends to be insufficiently forward-looking to support recipient budget and planning processes. IATI has successfully piloted automated data exchange with AIMS. Such automatic import of IATI data into national systems should eliminate the current discrepancies between donor and recipient systems.

#### ***5. No effective monitoring of financing commitments made by donor countries***

With the exception of the important contributions made by leading NGOs, there is no systematic follow-through on commitments made to raise ODA or climate finance. For example, developed countries have made significant pledges to raise ODA and climate finance, including at the Monterrey Conference on Financing for Development (UN 2002), the Gleneagles, L’Aguila and many other G8 summits, the 2009 UNFCCC Conference of the Parties in Copenhagen, and numerous other fora. The discrepancy between such financing commitments and actual disbursements is high, and no formal system exists to raise alarm when commitments are not honored.

#### ***An important FSD deliverable: Improved multilateral aid reporting and accountability mechanism***

As part of the ‘data revolution’ for the SDGs, FSD should commit to a major effort on the reporting of ODA, official flows for development, and climate finance to address the five shortcomings identified above. Building on the work of the UNFCCC, the DAC, and IATI, a Multilateral Donor Reporting Mechanism should be considered. Such a mechanism should build on existing data collection mechanisms and share governance among all donor countries, both OECD and non-OECD. In particular, it should (i) establish clear criteria for what constitutes aid and concessional climate finance, and how their additionality can be tracked; (ii) gather data on public international finance flows from all major official and non-official donors, as well as recipient countries; and (iii) track and monitor financing commitments made at international conferences, towards pooled financing mechanisms, emergency appeals, etc. Such a Multilateral Donor Reporting Mechanism should be a major outcome of FSD.

We underscore the importance of addressing reporting of ODA and climate finance under the UNFCCC, but we do not have a position on which institutional approach is better suited. Continuity and a general preference for not creating new mechanisms speak in favor of working through the DAC, IATI and UNFCCC. On the other hand, concerns about the governance of the DAC in particular, which is dominated by OECD donors, are valid and might speak in favor of a complementary mechanism – perhaps an aggregator of data from UNFCCC, IATI, DAC, and recipient countries – that has a more inclusive governance. These are important questions that require careful consideration and further work drawing on lessons in other areas.<sup>52</sup>

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<sup>51</sup> Another potential platform is d-portal ([www.d-portal.org](http://www.d-portal.org)) that was recently established by Development Initiatives to aggregate data from IATI and the DAC Creditor Reporting System.

<sup>52</sup> For example, with financial support from the Gates Foundation, the Institute for Health Metrics and Evaluation (IHME) at the University of Washington has become a leading and internationally trusted repository of key public health data. It provides a compelling example of how academic institutions can collect internationally recognized health data in a rigorous and transparent manner.

#### **6.4 Mobilizing private finance for sustainable development**

While the MDG focused primarily on public investment needs for ending extreme poverty, the SDGs pursue a broader agenda that includes investments in sustainable agriculture, infrastructure, urban development, climate change mitigation, and other areas that can be substantially and in some cases overwhelmingly financed through private means. Overall, the bulk of financing for sustainable development can and therefore should originate from private sources (Table 2 and Annex 1).

The world has ample saving – estimated at \$22 trillion per year with a stock of financial assets of some \$218 trillion (UN 2014) – and liquidity to finance the private investments in the SDGs, but private financing remains vastly insufficient. A central question for FSD is therefore how global saving can be translated into the long-term private investments that the world needs in the pursuit of sustainable development. In essence this will require that sufficient sustainable investment opportunities become available with a risk-return profile that is more attractive than the return for other ‘unsustainable’ investments.

So far this report has made a few overarching points regarding private financing that should frame an FSD framework:

1. **Public and private financing are complements:** As described in section 3.1, there is limited substitutability between private and public finance for core SDG investment needs in most market economies. This point is sometimes overlooked when discussions on development and climate finance juxtapose the very large private flows with relatively modest public investments. In line with the IECS (UN 2014) we emphasize that where private investments can achieve the same or better outcomes than public investments at a lower cost they should have primacy over public finance. In this sense the estimates of financing needs summarized in section 3.5 and Table 2 represent the maximum shares of private investment that appear compatible with achieving the SDG objectives.
2. **Public/private financing mixes must be considered separately for each sector and bespoke investment partnerships:** As illustrated in section 5 each major SDG investment area requires careful organization through bespoke public-private investment partnerships. Lessons from large-scale infrastructure finance cannot be applied directly to education or even access to basic infrastructure services, such as water supply, sanitation, or modern cooking fuels. Each public-private investment partnership also requires a supporting ‘ecosystem’ for advocacy, monitoring and evaluation, technology benchmarking, and so forth (section 4.3). The share of private finance varies substantially from one investment area to the next, depending on the nature of the goods and services that must be provided (see also section 3).
3. **Public finance is often a prerequisite for mobilizing private finance:** Many factors are important in mobilizing private finance, as discussed further in this section, but one salient feature of SDG investments is that they often require some public financing in order to raise (or ‘leverage’) private investments. For example, international infrastructure investments require a range of financial guarantees, upfront investments, and first-loss tranches to become viable for private investors (section 5.8). Agriculture and the transformation of energy systems require public investments in improved technologies (sections 5.3, 5.5, and 5.9). GAVI has successfully used concessional financing to create new and commercially viable vaccine markets (sections 4.2 and

5.1). A successful FSD framework therefore needs to explain where such public co-funding will come from and how it can be organized. Otherwise, business will not be able to do its job.

4. **Poorer countries can mobilize less private financing:** The poorer a country the more difficult it is to mobilize private (co-)financing for SDG investment needs. Poorer countries have more poor people who cannot pay for essential services (e.g. toll roads). They also have smaller balance sheets and therefore less private and public capacity to take on debt. Poor countries also lack many of the essential public goods that are indispensable for a functioning and competitive industry, so private investors tend to stay away. And some poor countries face additional challenges due to an unfavorable climate, adverse geography, a politically unstable neighborhood, or other factors that require targeted public investments and policies to be overcome.

At least three additional changes are required to better translate global saving into private investments in sustainable development. The limited scope of this report makes it impossible to cover these important issues in detail, so we refer below to more detailed frameworks and policy recommendations developed by others. The recently launched UNEP Inquiry into the Design of a Sustainable Financial System (UNEP 2014a) will also provide detailed recommendations on how private finance can be mobilized for and better aligned with the long-term objectives of sustainable development.

#### **6.4.1 The importance of sound national policy frameworks and international rules**

Private investors cannot invest in countries and sectors where national policy and regulatory frameworks are inadequate to generate sufficient returns with a commensurate level of risk. For example, investments in energy generation infrastructure require clear and credible long-term policy frameworks for power purchase agreements and the management of the power grid. Similarly, high levels of corruption, poor contract enforcement, an unreliable judiciary, and other policy or regulatory failures will undermine the potential for mobilizing private financing.

Shifting private investments towards energy efficiency or low-carbon power generation will require policies that correct market failures by imposing the social cost of greenhouse gas emissions on projects and users of fossil fuel (section 5.7). When such price signals are either too low, too volatile, or too short-term – as occurred for example under the EU Emissions Trading Scheme – then the weighted average cost of capital for sustainable energy investments will be too high relative to more polluting alternatives. The results will be higher investments in polluting project and industries.

In addition to domestic institutions and policy frameworks, international rules and standards, including for trade, intellectual property rights, banking and insurance regulation, accounting standards, etc. must be made consistent with the objective of achieving the SDGs. As one example, today's global standards for banking and insurance regulation (Basel III and Solvency II) were designed with the single overarching objective to increase the stability of the financial system. Financial stability is unquestionably critical, but the resulting rules framework is widely seen as penalizing direct investments in the long-term infrastructure and other projects that the world so urgently needs (Spencer and Stevenson 2013).

As highlighted section 5.8, the FSD agenda therefore needs to propose 'coherence checks' to ensure that global rules for banking and insurance regulation are coherent with mobilizing the private finance needed to achieve the SDGs. Where inconsistencies exist they need to be flagged in publicly available reports so that the rule-setting bodies can consider how to strike a better balance between the different

and sometimes competing needs. Similar coherence checks need to be conducted for other global rules, including but not limited to trade regimes, intellectual property standards, accounting standards, or corporate reporting and disclosure standards.

We emphasize that such coherence checks must be universal and apply to every country – regardless of its level of income. Similarly, global rules should be framed universally to address all countries, building on the lessons of existing global mechanisms. Examples include the IMF whose financial surveillance applies to all countries (though concerns have been raised that the IMF applies its standards differently to different countries); UN Peacekeeping efforts that do not distinguish between the income level of a country; and the human rights agenda and its mechanisms. Other global rule-setting processes, such as BEPS or Basel III, and their coherence checks must be rethought in line with the global post-2015 development agenda.

#### **6.4.2 The role of capital markets**

Capital markets are the engine room of modern economies and therefore central to sustainable development. They mobilize, allocate, and price capital; they price risks and provide risk coverage. Capital markets issue and trade bonds for corporations and sovereigns, they raise capital for equities, and they trade in derivatives and a range of risk-management tools. Since they confirm (partial) ownership of listed companies they are also a critical mechanism to influence corporate practices. The trouble is that today's capital markets are blind to the needs and challenges of sustainable development, as explained powerfully in a recently released report by the insurance company Aviva (Waygood 2014).

Today's capital markets do not 'price in' climate change and they do not raise the volumes of long-term capital that are required for public-private investment partnerships in the SDGs. In the words of Aviva, capital markets misprice sustainability issues, so that unsustainable companies have a lower cost of capital than sustainable ones. This results in a massive misallocation of capital towards investments and activities that do not support sustainable development.

The challenges are manifold and run deep.<sup>53</sup> Two central issues stand out: First, capital markets are poorly informed when it comes to sustainable development and subject to multiple externalities or market failures. They do not internalize the environmental and social costs on companies' profit and loss statement, such as deforestation, greenhouse gas emission, depletion of fisheries, freshwater pollution or overuse, and a range of other challenges. Capital markets also lack essential information about sustainable development from companies. For example, the growth in companies reporting on basic sustainability indicators is slowing (CK Capital 2013).

As a result markets misallocate capital on a tremendous scale. There are no easy fixes for this first set of challenges. Possible solutions advanced in the Aviva report include:

- Promote integrated financial regulation that integrates sustainable development into the mandates of supervisory agencies, listing rules, and financial stability;

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<sup>53</sup> This discussion follows broadly Waygood (2014).

- Ensure that all asset owners with more than \$1 billion under management publish a report to their beneficial owners on how they have integrated sustainable development considerations into their investment management agreements;
- Require integrated reporting by companies, investment banks, stock exchanges, asset managers, investment consultants, asset owners, and proxy voting agencies on a mandatory comply or explain basis. For example, every listed oil company should explain the implications of the agreed 2°C limit in the rise of average global temperatures on its operations and balance sheet.

Second, capital markets are excessively short-termist. Companies and investment managers are evaluated on a quarterly basis – sometimes even more frequently. This focus on short-term results feeds through the entire financial industry so that investment analysts barely look at long-term trends and “investment behavior by fund managers is more akin to speculation than genuine ownership” (Waygood 2014). The excessive focus on short-term results undermines long-term investments. Possible solutions include abolishing quarterly reporting and evaluation cycles of companies and investment managers.

Another important solution to short-termism and the overall information deficit on sustainable development lies in developing national SDG capital raising plans that outline how much money can be raised via infrastructure investment, project finance, corporate debt, foreign direct investment, equity investment, as well as sovereign and MDB debt. Of course capital markets cannot and must not be ‘planned’; they should continue to facilitate vast numbers of individual transactions between providers and takers of capital. Yet, capital raising plans are necessary to (i) provide information on (desired) long-term trends to analysts, investment managers, and other actors in the capital markets; and (ii) help governments understand better how incentives can be better aligned with the investment needs of the SDGs.

FSD cannot legislate for capital markets, but it must acknowledge their importance for sustainable development – an issue that was barely mentioned in the ICESD report. We urge member states to consider the carefully crafted recommendations in the Aviva report and the work of the UNEP Inquiry into the Design of a Sustainable Financial System as important input into the outcome document for the 2015 conference in Addis.

#### **6.4.3 Financial innovation, creativity, and leadership**

Clearly, governments and regulators must ensure that incentives in the capital markets are aligned with sustainable development, but the transformation towards sustainable development cannot occur without corporate leadership and innovation. The Climate Leaders’ Summit organized by UN Secretary-General Ban Ki-moon in September 2014 showcased substantial financial innovation in green bonds, insurance products, stock market indices that are better aligned with sustainable development, and many other areas (see also UNEP 2014b). Finance for Resilience (FiRe) was launched in 2013 to identify innovative ideas that can mobilize at least \$1 billion per year in short period of time. A first round of finalists was identified in 2014 and others are in preparation.

Such results-focused creativity will be a critical driver of success, even if it cannot substitute for public leadership on aligning rules and incentives. Interestingly, many of the most promising ideas advanced by FiRe and similar initiatives are public-private partnerships in their own right. So once again, we are dealing challenges that require carefully calibrated, blended responses from the public and private sectors.

## **7 Delivering on the Financing Sustainable Development agenda**

As this report has argued, the world needs effective public-private partnerships to achieve the SDGs and stay within 2°C. Each partnership requires organization and leadership. The United Nations organizations and the Secretary-General can play critical roles in agenda setting and mobilization. They need to work with business groups, such as the UN Global Compact, World Business Council for Sustainable Development, International Chamber of Commerce, Global Reporting Initiative, and civil society.

Financing is the glue that holds the agenda together and provides the means to achieve ambitious goals. Therefore FSD is central to the success of the SDGs and the climate agenda. We need an integrated approach to development and climate finance that encompasses the public and private sectors.

Fortunately, the Monterrey Consensus (UN 2002) and subsequent agreements at the 2008 Doha Financing for Development Conference provide an excellent framework that largely remains valid to this day. Monterrey and Doha underscore the primacy of domestic and private resources in meeting the financing gaps, but also highlights the need for ODA to complement domestic resources where necessary and to finance global public goods. Essentially, FSD will need to (i) reaffirm the Monterrey and Doha commitments that have not been met, including on domestic resource mobilization in some countries and ODA by most high-income countries; and (ii) update the framework to reflect today's world. In particular, the revised framework will need to respond to the growing role of business in financing sustainable development, address the economic rise of middle-income countries, and broaden the finance agenda to include all challenges of sustainable development. It should also operationalize the common principles for ODA adopted at the Fourth High-Level Forum on Aid Effectiveness in Busan 2011: ownership, Results-based, inclusive partnerships, and transparency and responsibility.

To be successful, FSD must also be forward looking. The conference will adopt a public-private financing framework that may last through to 2030 when the SDGs are set to expire. In order to remain relevant over time, such a framework must anticipate the changes that will occur to the world economy Taken on their own some. In particular, this will require a strong focus on the growing importance of private finance as well as clear eligibility and graduation criteria for ODA and climate finance that ensure effective use of scarce public resources and commit all high-income and upper-middle-income countries to help mobilize the needed resources.

Finally, FSD must avoid an artificial distinction and separation between development and climate finance. As this report has made clear, climate change mitigation, adaptation, and sustainable development form an integrated agenda. While there are very good reasons for a separate negotiation process for climate change under the UNFCCC, climate finance must be part and parcel of FSD.

### **7.1 The political economy of aid and climate finance**

Before turning to specific recommendations that FSD might adopt, let's review briefly the global political economy of aid and climate finance. All countries and actors will need to contribute to FSD to meet the SDGs and achieve the climate objectives to be agreed under the UNFCCC. This will require compromise and concessions from all parties. Taken on their own some of the proposals in this report will prove unpopular with particular groups of countries or actors. Yet they form part of an overall financing framework for sustainable development that is balanced and will require bold commitments from everyone:

- **High-income countries (DAC members)** need to honor the financing commitments on ODA and climate finance they have made in the past and ensure that high-quality ODA goes to the neediest countries with maximum efficiency and minimal transaction costs. As this report argues, this will require more ODA over the short- to medium-term and much greater use of pooled disbursement mechanisms, such as the GFATM, that have been shown to deliver better results.
- **Non-DAC high-income countries** should have essentially the same obligations as DAC members with regards to providing adequate, high-quality, and transparent climate and development.
- **Middle-income countries** are asked to play a new role. Upper-middle-income countries will themselves become aid donors rather than recipients, albeit on a smaller scale than the high-income countries.
- **Low-income countries and other IDA-eligible countries** need to strengthen domestic resource mobilization and the policy environment. They should accept full accountability for the effective use of resources.
- **Multi- and bi-lateral donor agencies** need to focus their financing towards the low-income and other IDA-eligible countries, with a special emphasis on the poorest countries. For example, they need not provide grant support to middle-income countries still battling to end pockets of extreme poverty. The host countries can take on this challenge largely or fully themselves.
- **The private sector** has an important role to play in leveraging public resources and as the principal financier of the transformation to sustainable development. Attention is needed to ensure that the private sector's contribution does not lead to excessive transaction costs or simply offloads risks to public financing agencies.

A viable financing framework for the post-2015 agenda will require compromises from everyone. Such shared problem solving is required in an interconnected world where some challenges can only be met through international cooperation and official co-financing. In the end, an effective system for development and climate finance will make everyone better off even if some of the required compromises may be politically difficult.

## **7.2 Opportunities for leadership in the run-up to FSD 2015**

As this report argues, an effective FSD agreement is necessary to support the post-2015 development agenda and a climate agreement. Yet, success will not come alone from a successful agreement. It will also require leadership from individuals, business, civil society organizations, and of course governments. Fortunately, several opportunities exist for motivated leaders to take the initiative in the run-up to the 2015 Financing for Development Conference:

- **One or more donor governments** can take the initiative to launch a multilateral Global Fund for Education. Such a commitment will not necessarily require substantial additional resources since many larger donors can mobilize the resources by reprioritizing their aid. A well-designed Global Fund for Education will go a long way towards filling the gaps that exist in the education sector and can galvanize major progress. It would become a sign of outstanding international

leadership from high-income or upper-middle-income countries. Similar opportunities exist in water and sanitation, smallholder farming, nutrition, etc.

- **Major philanthropists** should study how Bill and Melinda Gates helped transform the health sector by financing an ecosystem of data-driven NGOs and research teams that drove advocacy and accountability in the health sector. The Gate Foundation has also provided the initial funding for GAVI, which then rose to become a major provider of access to vaccines in the developing world. Similar opportunities for investing flexible funding to great effect now exist in education, nutrition, agriculture, and other areas.
- **The United Nations** should
  - Help fill gaps in available needs assessments for the SDGs (Annex 1);
  - Support efforts to develop a Multilateral Donor Reporting Mechanism to oversee development assistance flows, building on the DAC but incorporating non-OECD members and striving for a multi-stakeholder governance;
  - Consider how to reform global institutions to support the financing of the SDGs. For example, the OECD can propose a unilateral extension of BEPS to LDCs. The World Bank could invest in large-scale Infrastructure Project Preparation Facilities. The New Development Bank can become a major player in providing long-term infrastructure finance around the world.

Many other opportunities exist for bold leadership by international organizations in driving progress and should be seized during early 2015.

- **Business** can show leadership by helping structure Public-Private Technology Partnerships to develop and deliver the technologies the world needs in order to achieve sustainable development.
- **The science community, including Future Earth**, can step forward to provide the knowledge that countries need in order to make the long-term transformations to sustainable development. This includes metrics for tracking progress towards sustainable development.
- **Universities** – including business schools offering a Masters of Business Administration – can commit themselves to the SDGs to train the next generation of sustainable development finance leaders.

Each of these steps is imminently feasible and can make a tremendous contribution towards a successful FSD conference and achieving the SDGs.

### **7.3 Preliminary recommendations for Financing Sustainable Development 2015**

Here is a preliminary list of ten commitments that could be made at FSD 2015:

1. **Adopt indicative financing needs – public and private – and estimates of international finance needs** (ODA & climate finance), as outlined tentatively in Table 2 (page 32). Commit to improving the needs assessment to guide the implementation of FSD by filling gaps and incorporating lessons from implementations. Reaffirm the importance of ODA and concessional climate finance for meeting these objectives in low-income countries and for global public goods – since such funds are hardest to raise and will leverage tremendous private resources.

2. **Adopt clear standards for domestic resource mobilization** that respond to countries' needs and ability to raise resources. All developing countries should aim to mobilize at least [20 percent] of GNI in domestic revenues towards meeting the SDGs with a lower threshold of [17-18 percent] for low-income countries.
3. **Reform international regulation and ensure transparency to support domestic resource mobilization**, by adopting the following principles and ensuring their enforcement:
  - **Transparent beneficial company ownership in all countries;**
  - **Fair transfer pricing regimes and taxation of multinational companies;**
  - **Automatic exchange of information among tax authorities and taxation of offshore assets;**
  - **Publish what you pay;**
  - **Open government data; and**
  - **Periodic review of key international rules and standards for consistency with achieving the SDGs.**
4. **Anchor the central role of pooled financing mechanisms in building goal-based public-private investment partnerships**, particularly in health, education, agriculture and nutrition, biodiversity and ecosystem services, energy access, water and sanitation, data for development, and climate finance.<sup>54</sup>
  - **For each partnership one or more priority pooled financing mechanisms should be identified or established**, and all donors (including private philanthropy) be asked to contribute to them. Other non-essential mechanisms should be scaled back to reduce aid fragmentation.
  - **The pooled financing mechanisms should coordinate and publish robust needs assessments and long-term schedules for replenishment rounds** to ensure that their donors can prepare long-term resource mobilization strategies.
5. **Promote long-term investments in infrastructure around:**
  - **National Public Investment Systems and Infrastructure Project Preparation Facilities** to support the development of early-stage projects.
  - **Effective global, regional, and national subsidy and investment risk-mitigation mechanisms**, including a strengthened and expanded MIGA.
  - **Review of financial and insurance standards (Basel III and Solvency II) to promote long-term investments**, including through annual reports on whether global rules are consistent with countries achieving the SDGs and long-term climate objectives agreed under the UNFCCC.
  - **Harmonized infrastructure investment platforms and an effective secondary market**, to facilitate direct infrastructure investments from institutional investors.
  - **Deeper local saving pools and banking systems** to mobilize domestic financing for local infrastructure investments.

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<sup>54</sup> As described in this text, an increased role for pooled financing mechanisms will complement bilateral aid programs. Not all areas require or are suitable to pooled financing mechanisms (e.g. infrastructure, governance, capacity development, technical assistance).

6. **Ensure that capital markets can provide long-term finance for infrastructure and other sustainable development finance needs.** Inter alia FSD may resolve to:
  - **Make integrated reporting from companies and asset managers a global standard.**
  - **Address excessive short-termism in capital markets.**
  
7. **Adopt clear standards and targets for additional ODA and transparent monitoring.** In this report we propose the following minimum standards:
  - **All high-income countries that are members of the OECD DAC** recommit to increasing their ODA to 0.7 percent of GNI. By [2020] each donor country should at least halve the gap to 0.7 percent of GNI and reach the target by [2025].
  - **All non-DAC high-income countries** should commit to the same quantitative objectives as the DAC members, including halving the gap by [2020] and reaching the full target no later than [2025].
  - **Upper-middle-income countries** will soon become high-income countries and should therefore commit at least [0.1] percent of GNI in development assistance.
  - **All aid from DAC and non-DAC donors should be subject to rigorous standards of transparency** and public accountability. To ensure transparency aid should be reported by donors and recipients alike, perhaps through a **new Multilateral Donor Reporting Mechanism adopted at FSD.**
  
8. **Agree to transparent eligibility criteria for ODA and other public international flows.** We tentatively propose the following standards:
  - **ODA should be focused on low-income and other IDA-eligible countries. At least 50 percent of ODA should go towards the LDCs.**
  - **Non-IDA lower-middle-income countries will be eligible to low-interest loans and technical assistance, but should not receive any grant assistance or concessional loans (i.e. ODA).** To avoid abrupt disturbances to public finances, aid to these countries should be phased out gradually once they graduate from IDA (Annex 2). The rule should be applied flexibly to support lower-middle-income countries in special situations (e.g. experiencing major natural disasters or conflict). Specific priority challenges (e.g. high infectious disease burden) should also qualify for targeted ODA.
  - **Upper-middle-income countries should gradually become donors themselves.** In the interim, they may be eligible for technical assistance.
  
9. **Adopt the principle of assessed contributions for climate finance** and specify an assessment formula, perhaps along the lines of our suggestion in section 6.3.6. The basic principle should be that polluters pay, e.g. national assessments are based on GHG emissions, graded by national income level.
  
10. **Launch Public-Private Partnerships for key sustainable development technologies to prepare technology roadmaps and promote technology development.** A focus should be on describing how technologies can be developed and deployed with particular attention to facilitating and financing diffusion to all developing countries technologies.

## **Annex 1. Detailed investment needs for the SDGs**

Several comprehensive, bottom-up assessment of financing needs have been conducted for the MDGs (e.g. UN Millennium Project 2005), but no comprehensive analysis exists for the post-2015 agenda and the Sustainable Development Goals. Available estimates for SDG investment needs are patchy and tend to cover individual sectors only. As described in section 3.5, it is important to develop a clear sense of overall public and private investment needs by SDG investment area.

This annex reviews available sectoral investment needs for meeting the SDGs. In addition to the sources identified below the section draws on Greenhill and Ali (2013), UNCTAD (2014), UN Task Team (2013), and the ICESDF (UN 2014).

### ***Important caveats and methodological notes***

We underscore the caveats that must be applied to any estimates of investment needs and their aggregation across different sectors and sources. First, as detailed below, many estimates are incomplete and may therefore understate true investment needs. Second, estimates are derived using a range of different methodologies and assumptions, and may therefore be difficult to compare. Third, there is a risk of double-counting when adding up investment needs from different sectors. Fourth, investments in different areas may have synergies and reduce future investment needs. Fifth, most estimates reviewed below predate the OWG proposal of SDGs and therefore may not align with specific quantitative objectives. Sixth, some estimates focus on incremental investments whereas others focus on total costs, making it difficult to compare the investment needs across sectors. In summary, estimating investment needs for the SDGs is highly complex and driven by assumptions. Therefore any numbers will need to be treated with caution.

To mitigate some of these concerns we describe any major gaps that we identify in available investment needs. We also adjust available numbers to minimize the risk of double-counting, and we present ranges where the literature has not settled on a consensus number. When in doubt we err on the side of lower estimates to avoid inflating the total investment needs. We also highlight areas where available estimates are incomplete or preliminary. The SDSN is scheduled to release a more detailed paper on investment needs for the SDGs in December 2014.

We also emphasize the limited scope of the analysis below. The analysis focuses on investment needs in developing countries and leaves out key government functions (law and order, public administration, etc.), as well as some expenditures for private sector development. For example, we do not include the unmet need for credit to SMEs highlighted by the ICESDF (UN 2014).

UNCTAD's 2014 World Investment Report provides the first comprehensive estimates of investment needs for the SDGs using a common framework of analysis (Table 4).

**Table 4: Current Investment, investment needs and gaps and private sector participation in key SDG sectors in developing countries**

Sector	Description	Estimated Current Investment (latest available year, \$ billion)	2015 - 2030		Average private sector participation in current	
			Total Annual Investment Required (\$ billion)	Annual Investment Gap (\$ billion)	Developing countries	Developed countries
<b>Power</b>	Investment in generation, transmission and distribution of energy	260	630-950	370-690	40-50%	80-100%
<b>Transport</b>	Investment in roads, airports, ports and rail	300	350-770	50-470	30-40%	60-80%
<b>Tele-communications</b>	Investment in infrastructure (fixed lines, mobile and internet)	160	230-400	70-240	40-80%	60-100%
<b>Water and Sanitation</b>	Provision of water and sanitation to industry and households	150	410	260	0-20%	20-80%
<b>Food Security and Agriculture</b>	Investment in agriculture, research, rural development, safety nets etc	220	480	260	75%	90%
<b>Climate Change Mitigation</b>	Investment in relevant infrastructure, renewable energy generation, research and deployment of climate-friendly technologies	170	550-850	380-680	40%	90%
<b>Climate Change Adaptation</b>	Investment to cope with impact of climate change in agriculture, infrastructure, water management, coastal zones, etc.	20	80-120	60-100	0-20%	0-20%
<b>Eco-Systems/ Biodiversity</b>	Investment in conservation and safeguarding ecosystems, marine resource management, sustainable forestry, etc		70-210			
<b>Health</b>	Infrastructural investment, e.g. new hospital	70	210	140	20%	40%
<b>Education</b>	Infrastructural investment, e.g. new schools	80	330	250	15%	0-20%

Source: UNCTAD (2014)

Below we refer extensively to the UNCTAD estimates. For that reason, it is important to highlight some overarching, methodological details of this exercise: The UNCTAD estimates highlight annual investment requirements and gaps and focus on capital expenditures as opposed to operating expenditures. They also focus on developing countries only. For social sectors – primarily health and education – UNCTAD estimates annualized investment needs to transition low-income developing countries to middle-income developing countries. Below we augment this analysis through bottom-up investments in interventions to achieve the SDGs.

The UNCTAD estimates of incremental investments are based on current expenditure and do not project a Business-as-Usual (BAU) scenario for increased outlays on key SDG priorities. Finally, the public-private split of projected investment needs was aggregated across a broad range of countries exhibiting highly different expenditure patterns.

Before turning to the sector investment needs, a brief word on costing poverty eradication: Several back-of-the-envelope estimates exist for the cost of a global safety net or direct income transfers to end extreme income poverty, measured as \$1.25 a day. For example, in a widely-cited study, Chandy and Gertz (2011) estimate that \$66 billion might be required annually to end extreme income poverty. However, such estimates are difficult to translate into investment programs that tackle the root causes of ending extreme poverty. We therefore follow the sector approach and include provisions for safety nets under food security. UN Millennium Project (2005) and UN Task Team (2013) provide an extensive discussion of methodologies for estimating global resource needs.

### Overview of investment needs for the SDGs

Table 5 presents incremental investment needs by private and public sources in developing countries, unless otherwise stated. For each area discussed in more detail below, the table identifies total spending needs and an approximate division between public and private sources. In subsequent versions of this report we will endeavor to estimate domestic resource mobilization by income category in order to approximate overall ODA needs (sections 3.4 and 6.3). Pursuant to section 4.3 we identify key pooled financing mechanisms that can help organize global goal-based, public-private investment partnerships.

**Table 5: Incremental investment needs by investment area in developing countries (in constant 2010 \$ billion)**

Investment Area	Incremental annual investment needs in developing countries through to 2030				Corresponding pooled finance mechanisms
	Total needs	Private, commercial financing	Public, non-commercial financing	Of which ODA/public climate finance	
Health	51-80	~ 0	51-80	TBD	GAVI, GFATM, GFF, UNFPA, UNICEF
Education	[38]	~ 0	[38]	[19]	Proposed Global Fund for Education
Food security	46	2	44	TBD	IFAD, GAFSP, proposed Smallholder Fund
Access to modern energy (SE4All)	34	10.5	23.5	12.8	GCF
Access to water and sanitation	27	3-5	22-24	TBD	Global Water and Sanitation Fund or regional facilities
Data for the SDGs	TBD	TBD	TBD	TBD	TBD
Ecosystems including biodiversity	[18-48]	[3-7]	[15-41]	TBD	GEF
Other agriculture	210	195	15	0	N/A
Large infrastructure (power, transport, telco, watsan)	689-1599	291-755	398-844	TBD	N/A
Climate change mitigation	[380-680]	[300-564]	[80-115]	TBD	GCF
Climate change adaptation	60-100	0	60-100	TBD	GCF
<b>Total</b>	<b>[1559 - 2873]</b>	<b>[805 - 1539]</b>	<b>[752 - 1335]</b>	<b>TBD</b>	

Sources: See text

\*As noted in the text, this figure is the lower bound of the range provided by the High-Level Panel on Global Assessment of Resources for Implementing the Strategic Plan for Biodiversity 2011-2020. This figure is not indicative of *incremental* investments in biodiversity, but global investment needs.

## **Detailed discussion of sector investment needs**

### **1. Health**

The health goal and targets proposed by the Open Working Group (OWG 2014) focus on tackling the major infectious diseases, non-communicable diseases, child and maternal mortality, sexual and reproductive health, as well as providing universal health coverage (UHC). The recently concluded Lancet Commission on Global Health 2035 (Jamison et al., 2013) projects incremental investment needs for low- and lower-middle-income countries relative to a business-as-usual spending scenario. The study covers investments in family planning, maternal and neonatal health, treatment of childhood illnesses, malaria, TB, HIV/AIDS, and health systems strengthening. The latter accounts for 60-70 percent of incremental investment needs.

The authors conclude that low-income countries will need to spend an additional \$23 billion per year by 2015 rising to \$27 billion by 2035. For lower-middle-income countries the incremental needs are \$38 billion in 2015 and \$53 billion by 2035. If low- and lower-middle-income countries meet the combined investment needs of \$51 billion by 2015 (rising to \$80 billion in 2035) at least 10 million lives can be saved annually by 2035 relative to ‘business as usual’.

Jamison et al. update an earlier analysis conducted by the Task Force on Innovative International Financing for Health Systems (WHO 2010b), which forms the basis for the \$32 billion financing gap cited by Greenhill and Ali (2014) and UN (2014). Since the WHO (2010b) estimates cover only the period through to 2015 and are based on older data we use the much higher spending needs projected by Jamison et al. We note that these figures do not include the cost of treating non-communicable diseases and may therefore underestimate actual financing needs. For comparison, UNCTAD (2014) projects an annual investment gap of \$140 billion for 2015-2030. This estimate is much higher since it includes investments in upper-middle income countries as well.

The private sector plays a major role in the delivery of health services in developed as well as developing countries, but the picture is different on the financing side for UHC. While private health insurance and out-of-pocket expenditure can make significant contributions to health financing in high-income and upper-middle-income countries, experience shows that investments in UHC in most developing countries will need to be publicly financed. The evidence on user fees in developing country shows that out-of-pocket expenditure lead to drastically lower utilization of health services and fail to generate substantial revenues. For this reason, the consensus in the international health community is that UHC-related investments and operating expenditure need to be publicly financed (Moreno-Serra and Smith 2012, Savedoff 2012, Yates 2009, Jamison et al. 2013, Agyepong et al. 2014).<sup>55</sup>

Of course substantial private investment does occur in developing countries, including for advanced medical treatment for the wealthy. In combination with unsustainable user fees such investments account for some 20 percent of all health expenditure in developing countries (UNCTAD 2014). Yet since such investments are either incompatible with achieving UHC or beyond the scope of the primary healthcare focus of the post-2015 agenda we project that the private sector will not contribute to the financing gap for the health SDG. Even if there may be some private co-financing the resulting public

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<sup>55</sup> We note UNCTAD’s projection that some \$20 billion of health spending in developing countries can be privately financed. Such private investments may well be possible outside the scope of UHC.

finance needs strike us as conservative, since the needs assessment excludes the cost of non-communicable diseases and therefore understates overall needs.

The GFATM disbursed \$3.9 billion in 2013, the highest number over the past five years (GFATM 2014a). In comparison, GAVI's disbursements have been more volatile, averaging \$813 million over the past five years with \$1.4 billion disbursed in 2013 (GAVI 2014a). UNFPA and UNICEF have disbursed \$332 million and \$1143 million in net ODA in 2012 (OECD 2013a). At this point we do not include UNICEF's contributions, since we do not have data on the breakdown between health, education, and other priorities. Combined these mechanisms spend some \$5.6 billion per year.

## **2. Education**

The Education for All Global Monitoring Report (UNESCO 2013a) estimates that some \$42 billion will be needed annually for education, of which \$29 billion for primary education and \$13 billion for lower secondary education. Subtracting historic spending by donors (some \$5.8 billion per year between 2008 and 2011), UNESCO concludes that the annual funding gap for education is \$38 billion per year of which half might need to be provided through ODA. Note that these figures are higher than earlier UNESCO (2012b) estimates that have been widely cited (e.g. Rose et al. 2013). The main difference comes from increased attention paid to lower-secondary education.

Yet this revised estimate still vastly understates true investment needs for the SDGs since it leaves out upper-secondary and tertiary education as well as adult literacy and early childhood development. UNESCO is currently revising its needs assessment for education to fill these gaps. Revised figures are expected in early 2015.

For comparison, UNCTAD (2014) estimates that the education sector will require an incremental \$140 billion per year of which \$28-56 billion might be privately financed. However, since investments in education can be specified through bottom-up investment analyses, we defer to the forthcoming UNESCO estimates for a more robust SDG needs assessment for education. Until then we place the investment needs for education in square brackets.

Just like in the health sector, private expenditure on education in developing countries accounts for a significant 15 percent of total investments (UNCTAD 2014). In part, these expenditures reflect user fees for primary and lower secondary education that are inconsistent with the objective of universal access and completion rates (UNESCO 2013a). They also cover school fees paid by wealthy households for higher quality private schooling, which are outside the scope of the SDGs.

## **3. Food security**

For the SDGs it is useful to distinguish between targeted investments in eliminating hunger and meeting the special needs of smallholder farmers or artisanal fishermen on the one hand and the much higher investment needs for commercial agriculture on the other. The former require a considerable share of public investment, while the latter will be overwhelmingly publicly financed. We will start with a review of investment to end hunger and reduce extreme poverty in rural areas before turning below to the broader investment needs in agriculture

Schmidhuber and Bruinsma (2011) have conducted a bottom-up needs assessment of investments needed to eliminate hunger by 2025 (defined as less than 3 percent malnourishment). They estimate that an additional \$50 billion per year will be needed across the following priority areas: rural infrastructure

and market access (\$18.5 billion); developing and conserving natural resources (\$9.4 billion)<sup>56</sup>; public R&D and extension (\$6.3 billion); rural institutions (\$5.6 billion); productive farm safety nets (\$2.9 billion); and food safety nets (\$7.5 billion).<sup>57</sup> Some 62 percent of incremental expenditures are required in sub-Saharan Africa and South Asia.

Under rural infrastructure the authors include \$4.1 billion for rural electrification, which have covered under the SE4All target below. We therefore reduce the overall funding needs for food security to \$46 billion.

The authors do not provide breakdown between public and private investments for food security. Several categories will need to be entirely financed through public means: safety nets, public R&D, extension systems, rural institutions, and conserving natural resources. Private investment opportunities in the remaining rural infrastructure – in particular rural roads – is extremely limited. Some opportunities might exist in water management infrastructure, though even these will be very limited. We estimate that no more than [10 percent] of these investments can be privately financed, or some [\$2 billion]. In summary, the food security objective will likely require an additional \$44 billion in public finance and some \$2 billion in private financing.

In comparison, IFAD disbursed \$449 million in 2012 (OECD 2013a). GAFSP has mobilized \$979 million in public finance since its inception (GAFSP 2014), which corresponds to an average annual spending of some \$245 million per year.

#### **4. Access to modern energy services - Sustainable Energy for All (SE4All)**

Access to modern energy services is central for promoting economic growth and achieving all other SDGs. Governments have adopted the SE4All targets, which form a useful framework for assessing resource needs. In this part we focus on the first SE4All target, to provide universal access to electricity and modern cooking solutions. In addition, countries will need to invest heavily in expanding energy systems to meet growing needs, to reduce greenhouse gas emissions, to energy efficiency, and to ensure resilience to climate change. These broader investments in the energy system are much higher than the cost of ensuring access to modern energy services for all. They also require very different financing instruments and strategies. We therefore review these investment needs separately in the sections on climate change mitigation, adaptation, and large-scale infrastructure.

The IEA (2011) estimates that meeting the target of universal access to electricity and modern cooking solutions may require some \$48 billion per year through to 2030 – \$44 billion for universal access to electricity and \$4.4 billion for modern cooking solutions (all in 2010 prices). This corresponds to roughly 3 percent of global energy investments today.

In 2009 \$9.1 billion were invested globally in extending access to energy services, so investments will need to increase five-fold. The IEA projects that these investments will average \$14 billion between 2015 and 2030 on a business-as-usual path, which would still leave 1.0 billion people without electricity and 2.7 people without access to modern cooking solutions.

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<sup>56</sup> Including investments in irrigation and water management (\$3.6 billion), conservation of plant and genetic resources (\$0.6 billion), increased animal productivity (\$0.5 billion), sustainable use of fisheries (\$2.4 billion), and sustainable forest use (\$2.4 billion).

<sup>57</sup> These costs are expressed in 2009 prices adjusting them to 2010 does not change the rounded figures.

The GEA (2012) cost estimates for energy access are significantly higher at \$55-130 billion per year by 2030. For this analysis we will use the more widely used IEA estimates for energy access.

The IEA estimates that the private sector will need to provide some \$15 billion in financing. This represents a massive increase in private sector investment in energy access (up from roughly \$3 billion in 2009!), but remains below historic private investment rates observed in the power sector average 40-50 percent in developing countries (UNCTAD 2014) since much of the investment will go into small-scale and off-grid infrastructure serving very poor households. The remainder is split between domestic governments (\$15 billion) and bilateral as well as multilateral development sources (\$18 billion) (IEA 2011).

In Table 5 we apply the same ratios of private/domestic public/international public financing to the funding gap of \$34 billion.

## **5. Access to water and sanitation**

Just as with access to energy, we propose to separate the analysis of investment needs and financing strategies for ensuring universal access to water and sanitation (i.e. the continuation of the MDG agenda) and the broader infrastructure investment needs in the sector, including for climate change mitigation and adaptation.

According to the World Health Organization (2012) some \$27 billion will be required annually to ensure universal access to safe drinking water and adequate sanitation. The study estimated a total gap of \$535 billion to be spread out over 20 years. Sanitation accounts for the bulk of these investment needs. UNCTAD (2014) project a much higher investment gap for access to water and sanitation of some \$260 billion. Yet this figure includes industry and includes upper-middle income countries. We therefore propose to use the conservative WHO figures – in line with Greenhill and Ali (2013).

As explained by Greenhill and Ali (2013) the private sector can contribute to the financing of investments in water and sanitation, albeit at a lower level than in the energy sector. UNCTAD (2014) report that private sector investment in water and sanitation can reach up to 20 percent in developing countries. Using this upper threshold suggests that some \$5.4 billion of the \$27 billion gap might be financed by the private sector. We propose a range of [\$3-5 billion] in view of the large investment needs in very poor countries where the private sector will only be able to contribute at the margin. This corresponds to a net leverage ratio of 1:4 – 1:8, which are at the upper end of rates observed in infrastructure services for very poor people (UN 2012).

These estimates do not include much broader investment needs for the maintenance and replacement of water infrastructure in developed and developing countries. The OECD (2006) projects annual investment needs of \$1.3 trillion. We will include these investment needs under large-scale infrastructure below.

## **6. Data for the SDGs**

Achieving the SDGs and promoting sustainable development will require significant investments in data and monitoring systems – a genuine ‘data revolution’ is required. Though comparatively small in volume, these investments will be critical for success and should be included in the FSD discussions.

At present, however, no robust needs assessment exist for these investment needs. Representatives from several organizations, including the Bill and Melinda Gates Foundation, Center for Global Development, PARIS21, SDSN, Simon Frazer University, UN Statistics Division, and World Bank, are now collaborating to develop a consensus estimate of investment needs for the data revolution. We will include them in a revised version of this report.

## **7. Ecosystem services , including biodiversity**

A large number of resource estimates exist for biodiversity protection and ecosystem services. These investment needs are among the hardest to specify and quantify, so results have a high degree of uncertainty, and considerable differences exist between the estimates.

Two assessment exercises are of particular note: (i) High-Level Panel on Global Assessment of Resources for Implementing the Strategic Plan for Biodiversity 2011-2020 (CBD 2012a), and (ii) the Needs Assessments for the 6<sup>th</sup> Replenishment of the Global Environment Facility (CBD 2012b). Both assessments were undertaken in parallel (Table 6).

The GEF Needs Assessment differed from the analysis conducted by the High-Level Task Force in several ways, which explains the vastly lower numbers but complicates the comparison of the two sets of results: First, the GEF estimates cover investment needs in the 155 GEF-eligible countries, whereas the High-Level Panel undertook a global assessment. Second, the GEF selected activities of ‘strategic importance’ and did not propose interventions for all the targets. Third, the GEF assessment is limited to the period of 2014-2018, not 2013-2020 as with the High-Level Panel. Fourth, the GEF took into account the absorptive capacity of recipient nations, while the High-Level Panel did not. Fifth, the GEF estimates do not include administrative, transaction and opportunity costs of the proposed actions. Sixth and most importantly, the focus of the GEF estimates is on incremental funding needs as opposed to total costs estimated to reach the Aichi Goals.

A particular challenge in extrapolating from these investments is the need to distinguish between one-off costs and recurrent expenditure. For example, many new protected areas require substantial one-off investments when they are first established, but have lower annual operating expenditure. As a result it is difficult to extrapolate the GEF and CBD assessments to the much longer time period for the SDGs.

Moreover, both assessments conduct individual needs assessments for each Aichi Biodiversity Target. This approach aligns investment needs with the targets, but it leads to overlaps across investment areas and fails to account for major synergies. Both teams of authors acknowledge these issues and underscore that coordinated action across all targets could significantly reduce the required investment needs. Since the SDGs pursue a much broader agenda with significant implications for ecosystems and biodiversity it is indeed likely that the benefits of concerted actions are substantial.

**Table 6: Preliminary results of the financial needs assessments under the Convention on Biological Diversity**

Aichi Goals and Targets	Needs Assessment for the 6th GEF Replenishment (annualized, \$ million)	High-Level Panel on Global Assessment of Resources for Implementing the Strategic Plan for Biodiversity 2011-2020 (Annual, \$ million)
<b>GOAL A: Mainstreaming Biodiversity</b>		
Target 1: Awareness raising	6 - 18	280 - 890
Target 2: Biodiversity values	2 - 9	100 – 160
Target 3: Incentives	25 - 75	170 – 270
Target 4: Sustainable production/consumption	2 - 5	12 – 23
<b>GOAL B: Reduction of Pressure on biodiversity</b>		
Target 5: Reducing habitat loss (forests and wetlands)	523 - 1,297	39,200 - 52,100
Target 6: Fisheries	2,506 - 7,519	16,900 - 40,000
Target 7: Sustainable Agriculture, Aquaculture and Forestry	2,550 - 7,650	13,200 - 13,600
Target 8: Pollution		35,400 - 139,200
Target 9: Invasive Alien Species	13 - 38	23,300 - 52,900
Target 10: Coral Reefs	30 - 50	80 - 130
<b>GOAL C: Safeguarding Ecosystems</b>		
Target 11: Protected Areas	9,750 - 22,000	9,200 - 85,000
Target 12: Species conservation	25 - 75	3,400 - 4,800
Target 13: Genetic Diversity	4 - 11	80 - 190
<b>GOAL D: Enhancing the Benefits to All</b>		
Target 14: Ecosystem Services	15 - 45	3,750 - 37,500
Target 15: Ecosystem Resilience	3,015 - 9,025	6,400
Target 16: Access and benefit sharing		7 – 39
<b>GOAL E: Enhancing Implementation</b>		
Target 17: National biodiversity strategies and action plans	6 - 19	50 - 170
Target 18: Traditional Knowledge	3 - 9	210 - 340
Target 19: Science base	1 - 2	1,600 - 2,100
Target 20: Resource Mobilization	2 - 5	4 – 30
Biosafety	43	
<b>Total</b>	<b>18,519 - 47,894</b>	<b>153,343 - 435,842</b>

Source: UN Task Team (2013)

The differences also make it difficult to decide, which set of numbers to incorporate into Table 5. Arguments in favor of the GEF estimates (CBD 2012b) include two assumptions that are consistent with the remainder of the analysis in Table 5: (i) focus on developing countries, and (ii) estimation of incremental resource needs. On the other hand, the GEF estimates focus only on a subset of the activities required to manage ecosystems and preserve biodiversity. Moreover, they significantly reduce projected resource needs to allow for capacity constraints. This assumption may be justified for the relatively short time span covered by the GEF replenishment round, but it becomes untenable over a 2030 time horizon since this would allow capacity constraints to be addressed.

In turn, the analysis of the High-Level Panel covers the full spectrum of financing needs and does not allow for capacity constraints. On the other hand, the analysis covers developed countries as well whereas Table 5 only considers investment needs in developing countries.<sup>58</sup> Another short-coming for our purpose is that the High-Level Panel estimates total investment needs, which complicates the comparison with the incremental investment needs in other areas.

On balance and in the absence of better information, the GEF assessment provides the more conservative and appropriate basis for the needs of Table 5. Some line items in the Aichi resource estimates are covered elsewhere in the SDG agenda. In particular, we propose to the following modifications to the above table:

- Remove resource estimates for Goals A and E since these would be covered under overall preparedness for implementing the SDGs.
- Remove the resource estimate for agriculture from Target 7 since these interventions are covered under the agriculture section. These estimates amount to \$200-600 million.
- Reduce the upper-end estimate for fisheries by the \$2.4 billion (covered under agriculture).

These adjustments yield the following incremental annual financing needs:

**Table 7: Adjusted investment needs for ecosystem services and biodiversity**

Aichi Targets	Annual investment needs (\$ million)
Target 5: Reducing habitat loss (forests and wetlands)	523 - 1,297
Target 6: Fisheries	2,506 - 7,516
Target 7: Sustainable Agriculture, Aquaculture and Forestry	2,500 - 7,498
Target 9: Invasive Alien Species	13 - 38
Target 10: Coral Reefs	30 - 50
Target 11: Protected Areas	9,750 - 2,2000
Target 12: Species conservation	25 - 75
Target 13: Genetic Diversity	4 - 11
Target 14: Ecosystem Services	15 - 45
Target 15: Ecosystem Resilience	3,015 - 9,025
<b>Total</b>	<b>18,381 - 47,554</b>

Source: Authors' calculations based on CBD (2012b)

We note a few observations with regards to these estimates:

- The GEF estimates for Target 5 are more than an order of magnitude lower than the broader CBD estimates (Table 6). This large difference comes from the fact that CBD (2012a) includes financial incentives to counter illegal logging as well as wetland banking.
- Though the control of pollution (Target 8) may require substantial investment needs, CBD (2012a) does not consider any interventions. In contrast, CBD (2012b) considers high investment needs, particularly to control air pollution, clean up debris, extend storm water drainage, and promote biodegradable plastic. The consideration of financing needs for Target 8 might need to be reviewed in future analyses.

<sup>58</sup> Only a small share of the biodiversity and ecosystem investment needs in high-income countries could reasonably be considered global public goods.

- The GEF assessment of ecosystem services (Target 14) includes no funding needs for wetland-based ecosystems since these would be covered under the Ramsar Convention (CBD 2012b).
- Similarly, the GEF estimates for ecosystem resilience focus only on forests and coral reefs. Other ecosystem needs might need to be considered in a revised assessment.
- Finally, the exclusive focus on developing countries will underestimate investment needs in managing ecosystems that constitute global public goods.

Based on discussions in CBD (2012a, Table 5.4) private, for-profit financing for ecosystems and biodiversity will be limited. We estimate that some 85 percent will require public funding.

Other estimates for sustainable forest management project even higher investment needs of \$70-160 billion (UNFF 2012) than estimated for the Aichi Targets. No systematic resource estimates have been conducted for ocean management. The ocean component of the Aichi Targets may amount to up to \$39 billion per year (UNTT 2013).

In spite of considerable uncertainty around the precise investment needs for biodiversity and ecosystem services, it is clear that current funding available to the GEF constitutes a relatively small share of the overall needs. Some 30 countries pledged \$4.43 billion for the period 2014-2018 (GEF 2014a), corresponding to some \$1.1 billion in annual expenditure per year.

#### **8. Other agriculture (in addition to food security covered above)**

Gross investment requirements in agriculture and other food systems extend beyond food security and are significantly higher. The FAO estimates that current investments in agriculture are \$220 billion and will need to rise to \$410 billion to meet the objectives of reducing hunger, increasing yields, and making agriculture sustainable (Schmidhuber et al. 2009). The resulting investment gap of some \$260 billion per year for all developing countries would be met predominantly by the private sector. Currently, the private sector accounts for 75 percent of agricultural investments, but this share is likely to rise to reach the developed country average of 90 percent (UNCTAD 2014, Schmidhuber et al. 2009, Mogues et al. 2012).

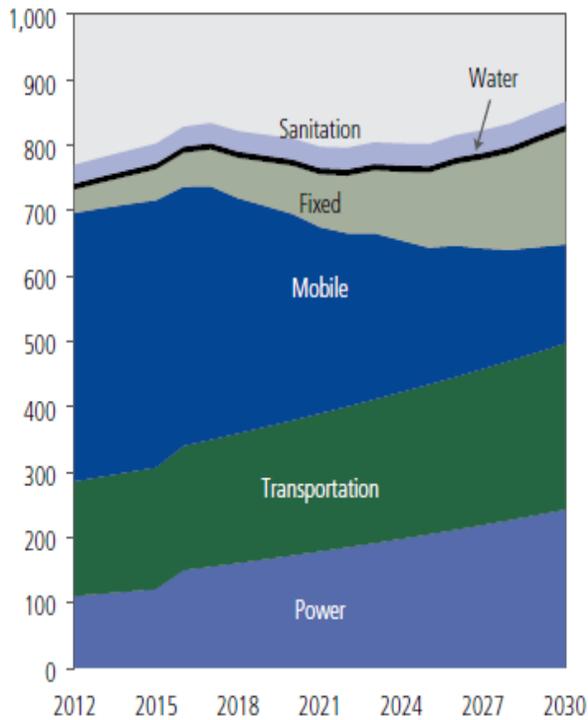
From this investment gap we subtract the \$50 billion for food security. Applying a 70 percent share of private financing to the full \$260 billion yields \$195 billion in private financing and a residual \$15 billion in public finance. We assume that these public investments are financed domestically.

#### **9. Large-scale infrastructure (transport, water, sanitation, power, telecommunications)**

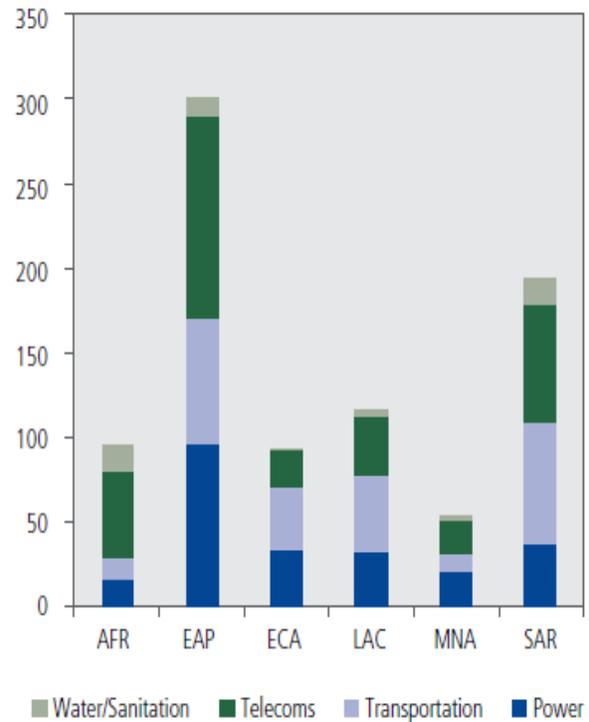
Several estimates are available for investment needs in energy, water and sanitation, transport, communication, and ports. Figure 10 summarizes incremental investment needs in developing countries that amount to approximately \$1 trillion per year (World Bank et al. 2013).

Figure 10: Annual incremental infrastructure investment needs in developing countries in \$ billion

a. Total Infrastructure Needs, 2010–30



b. Regional Infrastructure Needs, 2030



Source: World Bank 2013a

In comparison UNCTAD (2014) projects higher incremental investment needs for infrastructure in developing countries. Adjusting these estimates by subtracting the investment increments for energy, water and sanitation covered above, yields the estimates presented in Table 8. The table also estimates private sector contribution assuming the upper end of private sector shares currently experienced in developing countries.

Table 8: Adjusted incremental investment needs and private sector investments in 2010 \$ billion

	Resource needs		Private sector share	
	Low	High	Low	High
<b>Power</b>	336	656	168	328
<b>Transport</b>	50	470	20	188
<b>Telecommunications</b>	70	240	56	192
<b>Water and sanitation</b>	233	233	47	47
<b>Total</b>	689	1,599	291	755

Source: UNCTAD (2014); see text for adjustments made

Remaining public investment needs are summarized in the summary Table 5.

## **10. Climate change mitigation**

Tackling climate change requires major long-term public and private investments in mitigation. The Green Growth Alliance (2013) estimates that over the next decades an additional \$700 billion will need to be invested globally in infrastructure to stay within 2°C. Assuming common leverage ratios of 1:4 – 1:5 the report estimates that some \$116-139 billion may be required in public finance to mobilize \$553-581 billion in private financing.

These investment estimates are conservative since, not every infrastructure investment need could be quantified. Notably, more work is needed to better understand the investment needs in the agriculture, water, transport infrastructure and telecommunications sectors (Green Growth Alliance 2013). Moreover, these investment estimates exclude non-infrastructure needs, including additional investments in RDD&D for low-carbon technologies.

The World Bank estimates that an incremental \$200-300 billion will need to be invested in developing countries to ensure that infrastructure investments are low-emitting and climate resilient (World Bank et al. 2013, cited in World Bank 2013a). Assuming the same leverage ratio as applied by the Green Growth Alliance yields a public share of \$42-51 billion and private investments in the order of \$158-249 billion. Compared with Green Growth Alliance (2013), these numbers strike us as comparatively low – after all over 6 billion people live in developing countries.

In comparison the UNCTAD (2014) estimates are broadly consistent with the Green Growth Alliance (2013) estimates. The former project total financing needs for mitigation of \$550-880 billion and a financing gap of some \$380-680 billion. Other sources present even slightly higher estimates. The IEA (2014b) projects that the incremental investments needs in the energy sector will amount to \$44 trillion through to 2050, or just over \$1 trillion per year. According to the IEA 2°C pathway, these higher investments will be more than offset by fuel savings. Work conducted by McKinsey in 2009 suggests average incremental investment needs of some \$1.2 billion (Olbrisch et al. 2011). Restricting the choice of decarbonization technologies to energy efficiency and renewable energy would increase the upfront investment needs substantially (GEA 2012).

The New Climate Economy (2014) report provides estimates that bridge the needs of both building global infrastructure as well as creating a low-carbon economy. This study does not examine *incremental* investments compared to a baseline. Instead, it concludes that over the next 15 years (2015-2030), the large infrastructure investment needs total \$90 trillion, or approximately \$6 trillion per year. The net ‘cost’ of building this infrastructure with a low-carbon focus is \$4 trillion over the 15 years, or approximately \$267 billion per year. This focuses only on infrastructure for climate mitigation and not adaptation.

In summary, there is a considerable range of estimates for the cost of climate mitigation in developing countries. We propose to use the numbers cited by UNCTAD (2014), as they are broadly consistent with the recent global estimates by the Green Growth Alliance and constitute a mid-point between the range of available estimates from other studies. Using the range of leverage ratios projected by the Green Growth Alliance yields \$300-564 billion in private financing and a public finance residual of \$80-115 billion. Clearly, though, this situation remains unsatisfactory, and more work is required to understand the differences in estimates and to identify a consensus range for the post-2015 agenda.

In addition to these incremental investments some \$5 trillion in global annual infrastructure investments – including in transport, water, energy, buildings, agriculture, and telecommunications – will need to be greened (Green Growth Alliance 2013, p. 7 provides a breakdown of these estimates).

### **11. Climate change adaptation**

Adaptation to the unavoidable consequences of climate change will require significant incremental investments. The Green Growth Alliance (2013) and UNCTAD (2014) project that at least \$80-120 billion must be invested annually in adaptation to climate change. Current investments are woefully inadequate leaving a gap of some \$60-100 billion. Estimates for the cost of adaptation need to be treated with great caution since they require a lot of assumptions for which there is a little robust empirical evidence. Moreover, it becomes very difficult to separate out ‘development’ and ‘adaptation’ expenditure. Fankhauser and Schmidt-Traub (2011) discuss these issues in detail and estimate adaptation expenditure for Africa, which are significantly higher than suggested by aggregate global figures. This analysis has, however, not been extended to other regions, so we rely for now on the lower but widely used estimates cited above.

Currently, all financing for adaptation comes from public sources (CPI 2013). In future, private actors will need to bear a greater burden of these investment needs. However, the vast majority of adaptation spending will likely come from public sources since markets do not support the types of adaptation spending included in the above estimates.

## Annex 2. Countries by World Bank income category and IDA eligibility in 2014

High income		Upper-middle income		Lower-middle income		Low income
				Non-IDA eligible	IDA eligible	
Andorra	Kuwait	Angola°	Palau	Armenia	Bhutan°	Afghanistan°
Antigua and Barbuda	Latvia	Albania	Panama	Egypt, Arab Rep.	Bolivia	Bangladesh°
Aruba	Liechtenstein	Algeria	Peru	El Salvador	Cabo Verde	Benin°
Australia*	Lithuania	American Samoa	Romania	Georgia	Cameroon	Burkina Faso°
Austria*	Luxembourg**	Argentina	Serbia	Guatemala	Congo, Rep.	Burundi°
Bahamas, The	Macao SAR, China	Azerbaijan	Seychelles	India	Côte d'Ivoire	Cambodia°
Bahrain	Malta	Belarus	South Africa	Indonesia	Djibouti°	Central African Republic°
Barbados	Monaco	Belize	St. Lucia	Morocco	Ghana	Chad°
Belgium*	Netherlands*	Bosnia and Herzegovina	St. Vincent and the Grenadines	Paraguay	Guyana	Comoros°
Bermuda	New Caledonia	Botswana	Suriname	Philippines	Honduras	Congo, Dem. Rep°
Brunei Darussalam	New Zealand*	Brazil	Thailand	Swaziland	Kiribati°	Eritrea°
Canada*	Northern Mariana Islands	Bulgaria*	Tonga	Syrian Arab Republic	Kosovo	Ethiopia°
Cayman Islands	Norway**	China	Tunisia	Ukraine	Kyrgyz Republic	Gambia, The°
Channel Islands	Oman	Colombia	Turkey	West Bank and Gaza	Lao PDR°	Guinea°
Chile	Poland	Costa Rica	Turkmenistan		Lesotho°	Guinea-Bissau°
Croatia	Portugal*	Cuba	Tuvalu°		Mauritania°	Haiti°
Curaçao	Puerto Rico	Dominica	Venezuela, RB		Micronesia, Fed. Sts.	Kenya
Cyprus	Qatar	Dominican Republic			Moldova	Korea, Dem Rep.
Czech Republic	Russian Federation	Ecuador			Mongolia	Liberia°
Denmark**	San Marino	Fiji			Nicaragua	Madagascar°
Estonia	Saudi Arabia	Gabon			Nigeria	Malawi°
Equatorial Guinea	Singapore	Grenada			Pakistan	Mali°
Faeroe Islands	Sint Maarten	Hungary			Papua New Guinea	Mozambique°
Finland*	Slovak Republic	Iran, Islamic Rep.			Samoa	Myanmar°
France*	Slovenia	Iraq			São Tomé and Príncipe°	Nepal°
French Polynesia	Spain*	Jamaica			Senegal°	Niger°
Germany*	St. Kitts and Nevis	Jordan			Solomon Islands°	Rwanda°
Greece*	St. Martin	Kazakhstan			South Sudan°	Sierra Leone°
Greenland	Sweden**	Lebanon			Sri Lanka	Somalia°
Guam	Switzerland*	Libya			Sudan°	Tajikistan
Hong Kong SAR, China	Trinidad and Tobago	Macedonia, FYR			Timor-Leste°	Tanzania°
Iceland	Turks and Caicos Islands	Malaysia			Uzbekistan	Togo°
Ireland*	United Arab Emirates	Maldives			Vanuatu	Uganda°
Isle of Man	United Kingdom**	Marshall Islands			Vietnam	Zimbabwe
Israel	United States*	Mauritius			Yemen, Rep.°	
Italy*	Uruguay	Mexico			Zambia°	
Japan*	Virgin Islands (U.S.)	Montenegro				
Korea, Rep.*		Namibia				

\* Denotes OECD DAC member, \*\* Denotes OECD DAC member providing at least 0.7 percent of GNI in ODA, ° denotes Least Developed Country

Sources: OECD, World Bank, United Nations

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