

Steering Private Wealth towards the UN's Sustainable Development Goals



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Executive Summary

In 2015, the UN announced new targets for achieving a sustainable world by 2030. These seventeen Sustainable Development Goals (SDGs) aimed to broaden the scope of the Millennium Development Goals (MDGs) and provide a metric-based framework for engendering a sustainable international future. Historically, the MDGs primarily focused on ending extreme poverty. In contrast, the SDGs encompass a greater range of issues. The SDGs incorporate sustainable development as the unifying theme, bringing together economic, social and environmental global concerns.

The seventeen SDGs put forth a set of universal criterion that quantify sustainability performance on an international level. The SDGs provide targets for each goal and metrics to gauge performance across specific geographic conditions. Success can be benchmarked and tracked to determine if a given target has been achieved. In addition, the SDGs are applicable to every country, not only developing nations. The SDGs represent a move away from negative screens in sustainable investing and towards a focus on positive and measurable outcomes. Investments that support the underlying metrics of a given SDG or set of SDGs can thus be seen as supporting the development of a more sustainable future.

Since their introduction, the SDGs have galvanized investors and private companies while providing a shared language to track sustainability performance. Institutional investors such as the Dutch pension managers PGGM and APG have reevaluated their impact investing initiatives through the SDG lens.¹ Large public companies are also using the SDGs to communicate the effectiveness of their ESG campaigns.² In the case of the water and sanitation goal, countries are starting to use the SDG targets to evaluate their governmental spending plans.³ Ultimately the SDGs provide a quantifiable framework adoptable by all stakeholders for gauging sustainability performance.

Despite this engagement with the SDGs, there remains a large investment gap between current spending towards the SDG goals and what is needed to achieve success by 2030. The United Nations Conference on Trade and Development has estimated that \$5-7 trillion dollars will need to be spent annually to achieve the SDGs: "estimates for investment needs in developing countries alone range

¹ PGGM and APG (May 2017).

² Nestle (2017).

³ UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water (2017).

from \$3.3 trillion to \$4.5 trillion per year, mainly for basic infrastructure (roads, rail and ports, power stations; water and sanitation), food security (agriculture and rural development), climate change mitigation and adaptation, health and education.”⁴

Government spending cannot meet this need alone. While more public dollars need to be directed towards the SDGs, public spending will be insufficient.⁵ The gap in spending indicates the need for private capital. High-net-worth individuals and family offices can be an important source of impact investing capital. The UN Conference on Trade and Development estimates that the pool of private capital is \$46 trillion dollars. Of this \$46 trillion, “the private wealth management of family offices stands at \$1.2 trillion and foundations/endowment funds at \$1.3 trillion in 2011.”⁶

Wealth managers, financial advisors, and investment consultants have an important role to play in directing money towards SDG investments. In search of more SDG-directed investments, Dutch banks and pension funds called for making “SDG investment the ‘new normal’” by opening impact investing up to retail investors.⁷ Private investor portfolios should contain SDG investments. Likewise, the UN Conference on Trade and Development points to increased involvement of the fund management industry to mobilize these funds towards SDG investments.⁸

As calls for increased private capital have developed, client demand for impact investing has also grown. The Institute for Sustainable Investing has found that sustainable investing has “entered the mainstream” driven largely by millennial investors. Women of all ages also gravitate towards sustainable investments at a higher rate than men, although this gap is narrowing as the popularity of sustainable investing grows. 86% of millennials surveyed were either somewhat or very interested in sustainable investments.⁹

Investors want portfolios to reflect their values and are looking to sustainable investments to provide this. They expect their money to have a positive impact on issues of importance to them. In their survey, the Institute for Sustainable Investing found that 80% of individual investors surveyed want their portfolio “customized to meet their interests and goals.”¹⁰ They expect their investments to make a difference in the world and define their personal success in terms of their impact. An analysis on trends amongst billionaire investors found that they expect that their business objectives “must

⁴ UNCTAD (2014).

⁵ Kharas and McArthur (September 2016).

⁶ UNCTAD, (2014).

⁷ “Building Highways to SDG Investing” (December 2016).

⁸ UNCTAD, (2014).

⁹ Morgan Stanley, Institute for Sustainable Investing (2017).

¹⁰ Morgan Stanley, Institute for Sustainable Investing (2017).

deliver not only returns to the family, but also tangible benefits to a wide group of stakeholders -- including employees, customers, and society at large." Family offices starting to respond to this shift: In a 2016 survey of family offices conducted by UBS and Campden Wealth, "32% of 267 surveyed family offices were either somewhat or highly active in impact investing, and that an additional 30% are likely to become active in this field."¹¹

At the same time, the wealth management industry faces challenges. Key hurdles include profit margin compression from investors favoring low-cost solutions and retaining clients across generations. Low-cost investment solutions such as passive investment strategies like ETF funds, robo-advisors and do-it-yourself trading platforms has increased pressure for wealth managers to reduce fees. The desire for individualized portfolios with social impact is happening within the context of a massive shift in wealth across generations: "Approximately 460 billionaires will hand down USD 2.1trn to their heirs over a period of just 20 years."¹² Solidifying relationships across generations during this transition will be important.

Managers demonstrating a well-capitalized and differentiated process to uncover investment opportunities will likely see more success attracting and retaining clients. Providing SDG-oriented investments will allow the wealth management industry to shape portfolios that reflect the values of their clients and as a result strengthen the relationship between advisors and clients. The complexity of SDG investments carves out a role for wealth managers to monitor the impact of investments. The need for regular oversight of SDG investments is a potential solution for the problem created by the shift away from management fees and towards passive investing.

The SDGs offer a powerful framework for communicating and encouraging sustainable investing, one which brings mutually beneficial outcomes. Clients relationships are strengthened while portfolios become expression of the investors values. Being able to provide clients SDG-oriented investment products could drive the flow of private capital into currently under-funded projects.

What might these portfolio's look like? Six of the seventeen total SDGs have been analyzed: Goal 3, Good Health and Well-being; Goal 4, Quality Education; Goal 5, Gender Equality; Goal 6, Clean Water and Sanitation; Goal 7, Affordable and Clean Energy; and Goal 13, Climate Action. The funding gap for each goal has been identified along with the major interventions necessary to achieve the goal.

¹¹ UBS. (January 2017).

¹² UBS. (January 2017).

Sample investment strategies that address the specific SDG indicators within the context of the specific goal are provided through case studies.

In the event when there are not investable options for a particular target, philanthropic organizations are identified that can address this need. By combining investments and philanthropic giving, philanthropy can work in tandem with impact investing allowing a private investor to have maximum impact on achieving their desired SDG goal. This taps into a larger trend in philanthropic giving: tying donated funds to results, something UBS terms the “impact-philanthropy approach.”¹³

These sample portfolios demonstrate how impact investments could help achieve progress towards a sustainable future. They offer examples of portfolios that could be used to attract clients and provide a role for the wealth management industry in driving private capital towards the SDGs.

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¹³ UBS. (January 2018).

<https://www.ubs.com/global/en/wealth-management/chief-investment-office/key-topics/2018/five-lessons-on-sustainability-un-sdg-wef.html>

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Good Health and Well-Being

“Ensure healthy lives and promote well-being for all at all ages.”

Graham B. Higgins

SDG Goal 3 is ensuring healthy lives and promoting well-being for all at all ages. While significant progress has been made since the introduction of the original Millennium Development Goals, the Sustainable Development Goal’s 2030 targets will require an acceleration in progress, particularly within regions with the highest burden of disease.¹⁴ Developing countries still suffer 90% of the global disease burden but represent only 12% of the world’s spending on healthcare.¹⁵ As detailed by UBS, investment in healthcare infrastructure, offers the opportunity to improve health at the global level. Investment can also be directed to education programs to aid in disease prevention.¹⁶

From a financial perspective, funding SDG 3’s given indicators and metrics presents a broad challenge. According to The Guardian, accomplishing the SDGs will cost roughly \$1.4 trillion annually for low and middle-income countries and could reach as much as \$11.5 trillion annually to achieve globally. Focusing on the \$1.4 trillion annual total for low and middle-income countries, the required

14 UN. Sustainable Development Goal 3. Retrieved from <https://sustainabledevelopment.un.org/sdg3>

15 Wagstaff, A. and Pradhan, M. (2005). Health insurance impacts on health and nonmedical consumption in a developing country. World Bank Policy Research Working Paper 3563, cited in:

https://repository.upenn.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1064&context=wharton_research_scholars

16 UBS white paper, pg. 19. Retrieved from <https://www.ubs.com/global/en/wealth-management/chief-investment-office/key-topics/which-sdgs-should-private-wealth-focus-on-fulfilling.html>

capital is anticipated to be raised from roughly \$654 billion in private financing and \$836 billion in public funds. Of this \$1.4 trillion total, health and wellness will require roughly \$89 billion annually to achieve, 15% of the total annual requirement throughout low and middle-income countries.¹⁷ This is a significant figure, but, taking the World Health Organization's analysis of non-communicable diseases (NCDs) in relation to the SDGs as an example, an \$11 billion annual investment to combat NCDs diseases far undercuts the cost of inaction which could reach \$7 trillion by the year 2030.¹⁸

According to Jeffrey Sachs, Director of the Center for Sustainable Development at Columbia University's Earth Institute¹⁹, roughly \$40 billion per year is enough to begin addressing many of the readily preventable health issues that disproportionately affect developing nations. Issues such as HIV/AIDS, malaria, typhoid, measles, infant malnutrition can begin to be addressed more effectively by a restructuring of primary health care systems in many developing countries. Effective financing is crucial to addressing these issues and assisting countries in need in a sustainable and scalable manner, particularly if associated funds are carefully monitored, assessed and evaluated each step of the way.²⁰ The remaining funds required to meet SDG goal 3's approximate \$89 billion annual cost will build upon the prevention of these target health issues and expand access to and quality of healthcare on a global level. As Sachs argues, universal health coverage is necessary as access to health care is a basic human right.²¹

Ultimately the current research concerning the financial requirements to achieve SDG goal 3 needs to be more adequately defined at the global scale and refined according to each country's health and wellness needs. What is increasingly clear is that the mounting costs of inactivity pose a significant threat to our future world, and private capital has a crucial role to play in achieving our globalized health and wellness goals.

SDG Goal 3 is originally defined by the 14 metrics listed below which primarily focus on the reduction and elimination of various diseases, access to health care for all members of society and reduced mortality rates for all ages²². These indicators focus on improvements in healthcare globally

17 The Guardian - \$1.4T. Retrieved from <https://www.theguardian.com/global-development/2015/nov/18/14tn-dollars-a-year-needed-to-reach-global-goals-for-world-poorest>

18 WHO. Retrieved from <http://www.who.int/life-course/news/commentaries/financing-health-sustainable-goal/en/>

19 Center for Sustainable Development - The Earth Institute Columbia University, "Our Team", Accessed May 14th, 2018: <http://csd.columbia.edu/who-we-are/our-team/>

20 Jeffrey D. Sachs. (2015) "The Age of Sustainable Development." pg. 300

21 Jeffrey D. Sachs. (2015) "The Age of Sustainable Development." pg. 305

22 <https://sustainabledevelopment.un.org/content/documents/2013150612-FINAL-SDSN-Indicator-Report1.pdf>

with a concentration on the developing world.

Indicator No.	Goal 3: Ensure Healthy Lives and Promote Well-Being for All at All Ages
17	Material mortality ratio
18	Neonatal infant and under 5 mortality rates
19	Percent of children receiving full immunization
20	HIV incidence, treatment, and mortality rates
21	Incidence, prevalence, and death rates associated with all forms of tuberculosis
22	Incidence and death rates associated with malaria
23	Probability of dying between exact ages 30 and 70 from any of cardiovascular disease, diabetes, chronic respiratory disease or suicide
24	Percent of population overweight and obese, including children under 5
25	Road traffic deaths per 100,000 population
26	Consultations with a licensed provider in a health facility or the community per person, per year
27	Percent of population without effective financial protection for healthcare
28	Proportion of persons with a severe mental disorder who are using services
29	Contraceptive prevalence rate
30	Current use of tobacco product

For the Wealth Manager specifically, these indicators have been distilled into a Sustainable Development Investment (SDI) taxonomy by PGGM and APG²³. In this taxonomy SDG goal 3 and its relevant indicators are broken into seven readily investible sub-goals described below.

No.	Goal 3: Investable Sub-Goals
3.1	Reduce the global maternal mortality ratio
3.2	End preventable deaths of newborns and children under 5 years of age
3.3	End the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases, combat hepatitis, water-borne and other communicable diseases
3.4	Reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being
3.7	Ensure universal access to sexual and reproductive health-care services, including for family planning, information and education
3.8	Achieve universal health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all
3.9	Substantially reduce the number of deaths and illnesses from hazardous chemical and air, water and soil pollution and contamination
3.b	Research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines

²³ https://www.pggm.nl/english/what-we-do/Documents/SDI-taxonomies-APG-PGGM-mei_2017.pdf

This analysis has further refined these investable sub-goals into three distinct categories as described below. In addition, two case studies are presented as examples of investable opportunities that furthers these sub goals across a variety of relevant asset classes. Each case study provides a concise summary of an investment or strategy that furthers SDG Goal 3's 2030 targets through addressing its underlying metrics while also providing a return to a relevant lender.

1. **Decreased Mortality Rates (3.1, 3.2, 3.4)** : does the given investment, directly or indirectly, aid in the reduction of mortality rates.
2. **Decreased Disease (3.3, 3.9a)**: does the given investment, directly or indirectly, aid in the reduction of disease, particularly those that are readily preventable.
3. **Increased Access to Healthcare (3.7, 3.9b)**: does the given investment, directly or indirectly, help increase access to healthcare and quality of healthcare for all members of society.

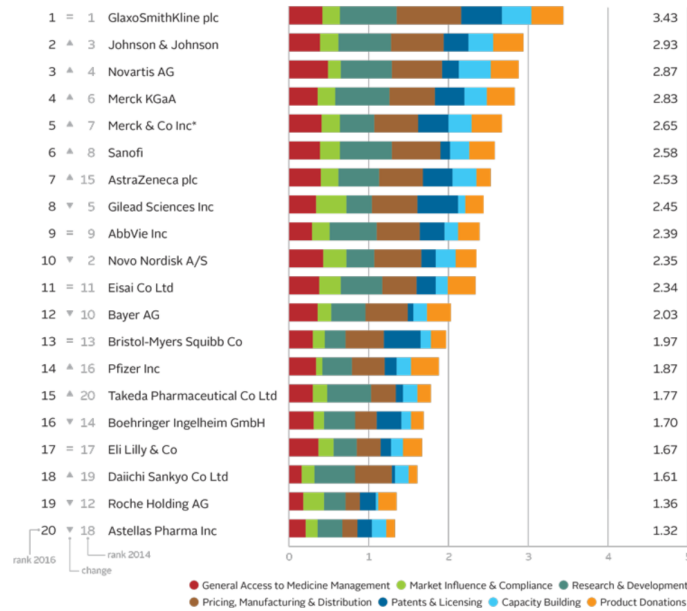
Case Study 1: Public Equities (1. Decreased Mortality Rates and 3. Increased Access to Healthcare)

The Access to Medicine Index is a Netherlands based non-profit organization that ranks the efforts of the world's largest 20 pharmaceutical companies in making their products affordable and available throughout a range of 107 low to middle income companies.²⁴ The Index highlights publicly traded equities that display a vested interest in maximizing the positive health impacts of their products. These companies, ranked below, invest in R&D for urgently needed products even where contemporary commercial incentives may be lacking.²⁵ These companies demonstrate good practice in aligning product affordability and availability with current need on the global level. From the perspective of the private wealth manager, the index can be deployed as a tool to highlight companies that have the greatest potential to positively impact SDG 3's underlying metrics.

²⁴ The U.K. Government, "Access to Medicine Index", Accessed: May 17th, 2018:

<https://www.gov.uk/government/news/access-to-medicine-index>

²⁵ Access to Medicine Index, "Overall Ranking", Accessed May 8th, 2018: <https://accesstomedicineindex.org/overall-ranking/>



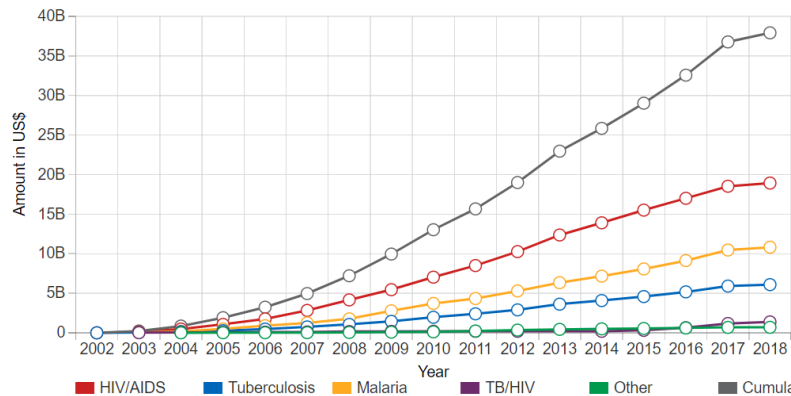
Case Study 2: The Global Fund - A Healthcare Focused Public Private Partnership (2. Decreased Disease and 3. Increased Access to Healthcare)

The Global Fund, created in 2002, is an effective example of a partnership between the public and private sectors to combat the epidemics of AIDS, tuberculosis and malaria. The fund, which raises and invests roughly \$4 billion annually, targets these diseases through financing prevention, treatment and care services throughout the developing world with a focus on strengthening local health systems and associated economies.²⁶ The Global Fund focuses on deploying a mix of public and private capital to develop prevention programs customized to address each country's unique political, cultural and epidemiological contexts. The fund relies on Local Fund Agents and monitoring programs to ensure effective performance and ultimately focuses on country ownership of implementation programs.²⁷

26 The Global Fund, "Fund Financials", Accessed May 10th, 2018: <https://www.theglobalfund.org/en/overview/>

27 The Global Fund, "Fund Overview", Accessed May 10th, 2018: <https://www.theglobalfund.org/en/overview/>

Disbursements 2002-2017



Target	Needed Intervention	Sample Investment	Asset Class
Decreased Disease and Increased Access to Healthcare	Increased Investments in Healthcare Particularly in High Need Areas	The Global Fund - PPP	Mix of Public and Private Capital and Partnerships with Multilateral Development Banks
Decreased Mortality and Increased Access to Healthcare	Increased Investments in Healthcare Particularly in High Need Areas	Equities Listed in the Access to Medicines Index	Global Equities, Corporate Bonds, Private Market Investments

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Quality Education

“Ensure inclusive and equitable education and promote lifelong learning opportunities for all.”

Robert Barbe

The number four Sustainable Development Goal is to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. Despite the world failing at meeting the Millennium Development Goal of achieving universal primary education by 2015, there has been considerable progress of improving net enrollment rates for primary education, lower secondary education and upper secondary education. However, according to the International Commission on Financing Global Education Opportunity, current investment levels in education are critically low as only 1 in 12 young people in low income countries will be on track to gain basic secondary level skills while hundreds of millions will remain out of school by 2030. In 2017, about 263 million children and youth were out of school, including 61 million children of primary school age.²⁸ For least developing countries, further increasing

²⁸ UN “Progress towards the Sustainable Development Goals”

education enrollment is critical as it leads to an empowered citizenry and a more productive labor force.

More and better financing is needed to achieve the SDG 4 goals by 2030. According to a 2015 UNESCO study, for lower income countries (LIC) and lower-middle income countries (LMIC), the annual investment amounts to \$340 billion between 2015 to 2030, not accounting for tertiary education, skills for work, adult literacy and scholarships. The annual funding needed to meet SDG 4 goals even after accounting for the expanded education public funding coming from low and lower middle-income countries, the annual funding gap will be at least \$39 billion in 2015-2030.²⁹ Traditionally, financing for education comes domestic government budgets, foreign aid in the form of foundation grants and Official Development Aid (ODA) from developed countries and multilateral financial institutions. Entities such as the Global Partnership for Education, Education Cannot Wait and the International Financing Facility for Education continue to develop methodologies to secure and leverage private grant and public aid funding. Though even with these initiatives, there is a call for private investment to close the funding gap. Currently, the private investment has not been able to close the SDG4 funding gap due to a lack of investible projects. According to Stephen Groff, Vice President of the Asian Development Bank, this is primarily due to the long-term investment horizon connected with most education projects and the low quantity of investable feasible projects. Regardless, in order to achieve the SDG of Quality Education by 2030, private capital mechanisms need to be developed and deployed to attract private finance and close the funding gap.

In order for funding to be deployed effectively to achieve SDG 4, financing institutions use goal’s prescribed indicators as described below³⁰:

Indicator No.	Goal 4: Ensure inclusive and equitable quality education and promote life-long learning opportunities for all
31	Percentage of children (36-59 months) receiving at least one year of a quality pre-primary education program
32	Early Child Development Index (ECDI)
33	Primary completion rates for girls and boys
34	Percentage of girls and boys who master a broad range of foundational skills, including in literacy and mathematics by the end of the primary school cycle
35	Secondary completion rates for girls and boys
36	Percentage of girls and boys who achieve proficiency across a broad range of learning outcomes (literacy & mathematics)
37	Tertiary enrollment rates for women and men

²⁹ UNESCO “Pricing the Right to education”

³⁰ <https://sustainabledevelopment.un.org/content/documents/2013150612-FINAL-SDSN-Indicator-Report1.pdf>

As previously mentioned for the other SDGs these indicators have been distilled into a Sustainable Development Investment (SDI) taxonomy by PGGM and APG³¹. In this taxonomy SDG goal 3 and its relevant indicators are broken into seven readily investible sub-goals described below.

No.	Goal 4: Investable Sub-Goals
4.1	Ensure That all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes
4.2	Ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education
4.3	Ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university
4.4	Substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship
4.5	Eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations
4.6	Ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy
4.a	Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all

Based on the above investable sub-goals, private capital investment in Quality Education can be focused into three vertices as described below. In addition, three case studies are presented as examples of investable opportunities that furthers these sub goals across a variety of relevant asset classes. Each case study provides a concise summary of an investment or strategy that furthers SDG Goal 4’s 2030 targets through addressing its underlying metrics while also providing a return to a relevant lender.

1. **Increase free access to primary and secondary education (4.1):** does the given investment, directly or indirectly aid in providing a free primary and/or secondary education for all
2. **Increase equal access to all education levels (4.2, 4.3, 4.5):** does the given investment, directly or indirectly aid in providing equal access to all education levels

31 https://www.pggm.nl/english/what-we-do/Documents/SDI-taxonomies-APG-PGGM-mei_2017.pdf

3. Improve educational outcomes, such as attaining numeracy and vocational skills, especially among the poorest countries of the world (4.4, 4.6, 4.a):

does the given investment, directly or indirectly, help improve the educational outcomes of all.

Case Study 1: Public Private Partnership (1. Increase free access to primary and secondary education)

Initiated by the KfW Development Bank, the Regional Education Finance Fund for Africa (REFFA) facilitates the demand-driven and sustainable provision of education finance services in African countries. The Fund was set up primarily to support students and their families by giving them access to customized education finance products that can help them reduce the financial burden of education.³² REFFA is a unique public private partnership structured fund with equity capital of \$27 million and a target fund size of \$100 million. The primary investor in the Fund is German Ministry for Economic Cooperation and Development (BMZ) represented by the German Development Bank (KfW). As of early 2017 new private investors will be onboarded in the mezzanine and senior tranches completing the structure of the fund across all tranches. Qualified private investors have the opportunity to invest in shares and notes depending on the duration of their investment. The Fund seeks to attract socially responsible investors that want to contribute to the objectives of the Fund: access to education, quality of education and affordability of education in Africa. These impact objectives are combined with adequate financial returns over the life of the Fund.

Case Study 2: Private Equity (1. Improve educational outcomes, such as attaining numeracy and vocational skills)

Investisseurs et Partenaires (I&P), a French impact investment group dedicated to SMEs in sub-Saharan Africa and South East Asia has invested in TRAINIS, a Malian-based company that offers general high-level management training. TRAINIS responds to a strong need for

³² <https://www.avca-africa.org/media/1680/investing-in-development-in-africa.pdf>

training among African executives who want to get in line with international standards. By financing SMEs through minority shareholder equity investments and participative loans, they can deliver impact to the SDG by substantially increasing the number of youth and adults who have relevant skills, including technical and vocational skills for employment, decent jobs and entrepreneurship.³³ To date, their funds have invested over \$80 million since 2002.³⁴

Case Study 3: Public Equities (1. Increase free access to primary and secondary education)

Investing in Pearson plc, the British multinational publishing and education company, supports the Pearson Affordable Learning Fund (PALF), which makes significant minority equity investments in for-profit education companies. Since its launch in 2012, the fund has committed \$65 million of capital to work within emerging markets. PALF's mandate is to invest in companies that can build quality, scalable education solutions to meet a growing demand for affordable educational services. Since 2012, PALF has invested in and managed ten companies, serving over 125,000 children in South Africa, Ghana, Kenya, Tanzania, Nigeria, India and the Philippines. The PALF has also invested in Omega Schools, a chain of schools in Ghana delivering quality affordable education to 20,000 students. An important innovation pioneered by Omega Schools has been the introduction of the daily fee which caters to the many parents who cannot afford to pay monthly or term fees.³⁵

³³ <http://www.ietp.com/en/node/2119/#ipdev2-section>

³⁴ <https://www.avca-africa.org/media/1680/investing-in-development-in-africa.pdf>

³⁵ <https://www.pearson.com/corporate/about-pearson/innovation/pearson-affordable-learning-fund-palf.html>

Target	Needed Intervention	Sample Investment	Asset Class
Increase free access to primary and secondary education (4.1)	Domestic public funding, Official Development Assistance (ODA), Technical Assistance (TA), Capacity building, Partnership with private capital	Regional Education Finance Fund for Africa	Public-Private Partnership (PPP) / Private Equity
Increase equal access to all education levels (4.2, 4.3, 4.5)	Domestic public funding, Official Development Assistance (ODA), Technical Assistance (TA), Capacity building, Partnership with private capital	Education Cannot Wait (ECW) Fund	Philanthropy Grants
Improve educational outcomes, such as attaining numeracy and vocational skills, especially among the poorest countries of the world (4.4, 4.6, 4.a)	Domestic public funding, Official Development Assistance (ODA), Technical Assistance (TA), Capacity building, Partnership with private capital	Investisseurs et Partenaires Impact Fund	PPP / Private Equity

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Gender Equality

“Achieve gender equality and empower all women and girls.”

Rene Blank

SDG Goal 5 aims to end discrimination and violence against women and girls, increase female leadership, improve women’s economic participation and ensure women’s access to reproductive healthcare.

Goal 5 was designed to address inadequacies of the Millennium Goals to properly deal with gender inequality. Under the Millennium Goals, gender was secondary to the larger project. The SDGs represent an attempt to put gender at the intersection of all of the SDGs, recognizing gender equality as central to societal transformation. Many of the SDGs mention gender or the impact of the goal on women and girls. The International Institute for Sustainable Development notes that “more than 50 of the 231 SDG indicators reference women, girls, gender or sex.” Calling this approach “gender-responsive implementation,” the UN sees empowering women as central to the broader goals of ending poverty, protecting the environment and growing peaceful cooperation between nations.³⁶

Placing gender at the center of other interventions increases the positive outcomes for all seventeen SDGs. The power of this multiplier effect can be seen in how women’s access to land

³⁶ UN. (2017).

ownership can help end hunger: “Rural women are significant contributors to global food production. Gains associated with eliminating the gender gap in agriculture can potentially increase national production by 2.5 to 4 per cent, as suggested from countries where data is available, and can potentially lead to associated declines in rates of undernourishment of 12 to 17 percent.”³⁷ Similarly, target 5B--access to cell phone ownership--is key to providing women access to education and economic participation. Providing internet access facilitates women’s economic participation by allowing female involvement in business development.

Because the gender equality goal overlaps with other SDG goals, it is difficult to estimate a yearly cost to achieving this goal. In their 2018 report, UN Women noted that “national planning for gender equality and sustainable development will require more detailed cost estimates.”³⁸ However, if the SDGs are successful in incorporating gender throughout all of the goals, then money devoted to other targets will have a positive effect on gender equality targets.

Because gender intersects with most of the other SDGs, many institutional investors do not have a dedicated gender equality portfolio. Instead investing has taken the form of “remembering gender” when evaluating impact of other goals such as good health, education, and clean energy. Calvert Impact Capital, for example, does not use gender equality as a separate investible area of focus. Instead, they use a “dedicated gender lens” to understand their investment in the areas of affordable housing, community development, education, environmental sustainability, health, microfinance, renewable energy, small business and sustainable agriculture. African Development Bank Group takes a similar approach by looking for gender indicators across their investments broadly.

Other funds use gender as a negative screen for investing in equities: RobecoSAM uses gender diversity within a company to compare to peer companies. UBS recommends using gender inequality to evaluate corporate bonds.

In evaluating the gender equality goal, the lack of gender aggregated data is an obstacle to benchmarking impact. International Institute for Sustainable Development notes that the lack of data is an obstacle to measuring improvement. For an investing portfolio, then, managers should be careful to pick investments that operate in countries with reliable data so improvements for women and girls can be reliably tracked.

The nine targets making up goal 5 are listed in the table below.

³⁷ UN. (2017).

³⁸ UN Women. (2018).

Indicator No.	Goal 5: Achieve gender equality and empower all women and girls
5.1.1	Whether or not legal frameworks are in place to promote, enforce and monitor equity and nondiscrimination on the basis of sex
5.2.1	Proportion of ever-partnered women and girls aged 15 years and older subjected to physical, sexual or psychological violence by a current or former intimate partner in the previous 12 months, by form of violence and by age
5.2.2	Proportion of women and girls aged 15 years and older subjected to sexual violence by persons other than an intimate partner in the previous 12 months, by age and place of occurrence
5.3.1	Proportion of women aged 20-24 years who were married or in a union before age 15 and before age 18
5.3.2	Proportion of girls and women aged 15-49 years who have undergone female genital mutilation/cutting, by age
5.4.1	Proportion of time spent on unpaid domestic and care work, by sex, age and location
5.5.1	Proportion of seats held by women in national parliaments and local governments
5.5.2	Proportion of women in managerial positions
5.6.1	Proportion of women aged 15-49 years who make their own informed decisions regarding sexual relations, contraceptive use and reproductive health care
5.6.2	Number of countries with laws and regulations that guarantee women aged 15-49 years access to sexual and reproductive health care, information and education
5.A.1	Proportion of total agricultural population with ownership or secure rights over agricultural land, by sex; and share of women among owners or rights-bearers of agricultural land, by type of tenure
5.A.2	Proportion of countries where the legal framework (including customary law) guarantees women's equal rights to land ownership and/or control
5.B.1	Proportion of individuals who own a mobile telephone, by sex
5.C.1	Proportion of countries with systems to track and make public allocations for gender equality and women's empowerment

Targets are provided in the following table.

No.	Goal 5: Investable Sub-Goals
5.1	End all forms of discrimination against all women and girls everywhere
5.2	Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation
5.3	Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation
5.4	Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and societal protection policies and the promotion of shared responsibilities within the household and the family as nationally appropriate
5.5	Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life
5.6	Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences

5.A	Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws
5.B	Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women
5.C	Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels

Three case studies demonstrate the need for a combined approach including both impact investments and philanthropic giving.

Case Study 1: Microfinance (Sub target 5.5: Ensure women’s participation in political and economic life)

Women’s World Banking

Microfinance is the most mature area of gender-focused investing.³⁹ Designed to address women’s participation in economic life (5.5), microfinance provides access to capital and banking services. One example, Women’s World Bank, works in 31 countries. They partner with financial institutions to provide credit, savings and insurance for low income women. They also work to increase digital access to financial products.

Additional microfinance institutions include Ujjivan which provides loans to women in India⁴⁰ and ASN-Novib Microkredietfonds which invests to encourage entrepreneurship in less developed countries.⁴¹

Case Study 2: Public-Private Partnership (Sub target 5.B: Enhance use of enabling technology)

Iamthecode

Taking a different approach to female digital inclusion is the organization Iamthecode. The organization provides technology and digital literacy training to women and girls in marginalized communities. The work of Iamthecode contributes to both the success of the SDG goal of Gender Equality as well as SDG goal 4, Quality Education. Iamthecode works in China, England and Kenya.⁴²

³⁹ Evaluating Impact Investing.

⁴⁰ Ujjivan.

⁴¹ ASN-Novib Microkredietfonds.

⁴² Iamthecode.

Case Study 3: Philanthropy. (Sub targets 5.1, 5.2, 5.3, 5.4: End discrimination and violence against women and value unpaid care and domestic work.)

Equality Now

Seven of the nine targets included in the gender equality goal will need to be solved through improved legal frameworks. Although these targets do not have investable solutions, a complete portfolio would include philanthropic giving tied to desired target outcomes. Equality Now addresses many of these issues include ending female genital mutilation, child marriage, sex trafficking, and sexual violence. They work within the legal system to change laws preventing gender empowerment. The organization has a global reach.⁴³

A philanthropic organization addressing women’s access to sexual and reproductive health (target 5.6) is Change: Center for Health and Gender Equity.

Target	Needed Intervention	Sample Investment	Asset Class
End discrimination and violence against women (5.1, 5.2, 5.3)	Changes in legal framework: divorce laws, inheritance and ownership laws, early marriage laws	Equality Now	Philanthropy
Value unpaid care and domestic work (5.4)	Change in legal framework: social protection policies, promotion of shared responsibility within the household	Equality Now	Philanthropy
Ensure women’s participation in political and economic life (5.5)	Access to financial services	Women’s World Banking Ujjivan ASN-Novib Microkredietfonds	Microfinance
Ensure access to sexual and reproductive health (5.6)	Promote reproductive access and rights to health care	Change: Center for Health and Gender Equity	Philanthropy
Equal rights to economic resources (5.A, 5.C)	Change in legal framework: ownership of assets, land tenure, and inheritance laws	Equality Now	Philanthropy
Enhance use of enabling technology (5.B)	Close gender digital divide through access to digital literacy and technology	Iamthecode Women’s World Banking	Public-Private Partnership

⁴³ Equality Now.

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Clean Water and Sanitation

“Ensure availability and sustainable management of water and sanitation for all.”

Rene Blank

Sustainable Development Goal 6 targets clean water and sanitation. The water goal can be broken into three main areas of focus. The first three targets fall under the rubric of “WASH” or water, sanitation and hygiene targets. These targets aims to ensure universal access to clean drinking water, safe sanitation and handwashing facilities. Goal 6 also includes water efficiency and management targets including transboundary cooperation and improved infrastructure. Lastly, Goal 6 aims to protect ecosystems recognizing the importance of natural infrastructure for a sustainable water supply.

Increased access to clean water has far reaching consequences beyond the targets identified under Goal 6. Investments in clean water and sanitations are also investments in improved health outcomes and aid in gender quality goals. Better sanitation and hygiene has been shown to lessen diarrheal diseases, improve nutrition, reduce maternal mortality and increased girls’ school attendance.⁴⁴

⁴⁴ UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water. (2017).

The World Health Organization has estimated that 660 million people worldwide lack access clean-drinking water; 2.4 billion people lack access to adequate sanitation.⁴⁵ The need is greatest in lower and middle income countries.⁴⁶

Cost estimates largely focus on the WASH targets. In their frequently-cited report, Guy Hutton and Mili Varughese estimate necessary WASH annual spending to be 114 billion a year: "Meeting SDG Targets 6.1 and 6.2 will require a tripling of capital investments to US\$ 114 billion per year, not to mention operations and maintenance (O&M) costs, which are key for sustainable services."⁴⁷ In another cost analysis, the World Bank has estimated that the total cost of achieving targets 6.1, 6.2 and 6.3 would be 150 billion dollars a year. This would include a safe water supply for every household, an effective method for dealing with fecal waste, and access to handwashing facilities. Interventions included in this cost analysis include initial capital investments as well as cost of maintaining installed infrastructure. Types of interventions included in the cost estimate were introduction of community wells, latrines, and handwashing stations as a first stage of improvements. The estimation also includes "higher level" of services through installation of piped water and sewage systems.

Estimating the cost of protecting ecosystems has to be extrapolated from more comprehensive biodiversity investment needs. The estimated annual investment needs for various biodiversity targets involving water ecosystems are as follows⁴⁸: coral reefs 30-50 million/year; ecosystems services 15-45 million/year; ecosystem resilience 3015-9025 million/year; fisheries 2506-7516 million/year; sustainable agriculture, aquaculture and forestry 2500-7498 million/year. Taken together, ecosystem preservation adds an additional 8 to 24 billion/year to the cost of achieving Goal 6.

The World Health Organization has found that 80% of countries lack adequate funding for meeting Goal 6.⁴⁹ In 2015, 7.4 billion came from repayable finance options such as loans to governments and utilities to fund long-term infrastructure projects.⁵⁰ Additional financing will need to come from alternative sources. The UN suggests blended finance: "the strategic use of public taxes, development grants and concessional loans to mobilize private capital flows to emerging and frontier

⁴⁵ UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water. (2017).

⁴⁶ Water.org. (April 19, 2017)

⁴⁷ Hutton, Guy and Mili Varughese. (January 2016).

⁴⁸ Schmidt-Traub, Guido. (November 2015).

⁴⁹ UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water. (2017).

⁵⁰ UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water. (2017).

markets." Pointing to grants, concessional loans, and credit enhancements, such additional investments should "help crowd in" private investment.⁵¹

Even though the focus on funding and data tracking is still largely limited to the WASH targets, an ideal water investment would not ignore these complementary targets. Paying attention to sustainability of ecosystems and water withdrawal rates will make water investments more impactful for reaching targets while also proving more enticing for private investors.

Goal 6 comes with the following indicators:

Indicator No.	Goal 6: Ensure availability and sustainable management of water and sanitation for all
6.1.1.	Proportion of population using safely managed drinking water services
6.2.1	Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water
6.3.1	Proportion of wastewater safely treated
6.3.2	Proportion of bodies of water with good ambient water quality
6.4.1	Change in water-use efficiency over time
6.4.2	Level of water stress; freshwater withdrawal as a proportion of available freshwater resources
6.5.1	Degree of integrated water resources management implementation
6.5.2	Proportion of transboundary basin area with an operational arrangement for water cooperation
6.6.1	Change in the extent of water-related ecosystems over time
6.A.1	Amount of water-and sanitation-related official development assistance that is part of a government-coordinated spending plan

Targets are provided in the following table:

No.	Goal 6: Investable Sub-Goals
6.1	Achieve universal and equitable access to safe and affordable drinking water for all
6.2	Achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations
6.3	Improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.
6.4	Substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of fresh water to address water scarcity and substantially reduce the number of people suffering from water scarcity
6.5	Implement integrated water resources management at all levels, including through transboundary cooperation as appropriate
6.6	Protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes
6.A	Expand international cooperation and capacity-building support to developing countries in water-and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse of technologies
6.B	Support and strengthen the participation of local communities in improving water and sanitation management

⁵¹ UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water. (2017).

Three case studies demonstrate the variety of investment vehicles. They are not limited to WASH examples, but also include efficiency improvements and methods for ecosystem preservation.

Case Study 1: Public-Private Partnership (Sub target 6.6: Protect Ecosystems)

Sustainable Water Fund (FDW)

The Netherlands Enterprise Agency (Rijksdienst voor Ondernemend Nederland) operates the Sustainable Water Fund, a public-private partnership that aims to connect governments, NGOs, and private industry. The FDB grants funds towards WASH goals including increased access to drinking water and improved sanitation. Notably, they also include among their goals efficient use of water supply for agricultural demands, cooperative management and sustainable ecosystems. Their work is primarily centered in Africa and Asia.

Two example projects funded by the FDW include a small dam-building project in Indonesia. In order to protect the coastline and encourage regrowth of mangrove forests, small dams were constructed with government and community involvement. Coast line protection supports sustainable aquaculture. Another project ensured a five-year water supply to 80,000 people in the Philippines. The project involved local women in the community ensuring a sustainable business model and long-term employment for the women. Because of the breath of their work, the FDW would make an ideal investment for a private investor interested in sustainable water use.

Similar water funds include CIRAD and Encourage Capital. CIRAD connects public and private sectors through impact investing to conserve biodiversity. Working in Mexico, CIRAD matches public investment to scale current subsidies.⁵² Encourage Capital's public-private funding aims to repair riparian borders to the Colorado River in the western United States.⁵³

Case Study 2: Private Equity (Sub target 6.4: Increase water efficiency and reduce water scarcity)

eWaterPay

Providing pre-payment smart taps, eWaterPay works to ensure that revenue can be collected at the collection point for drinking water. Trackable revenue can then be applied to maintaining infrastructure. By providing smart taps at the water source, eWaterPay increases access to water and

⁵² CIRAD. (2017).

⁵³ Encourage Capital.

encourages less waste. The smart tap is a high tech solution to the problem of non-revenue water.⁵⁴ eWaterPay works primarily to reduce non-revenue water which helps “to increase utility efficiency and allow more funds to be made available for maintenance and further investment, as well as reduce the strain on scarce water resources.”⁵⁵ eWaterPay works primarily in Gambia and Tanzania.

A similar investment is the Japanese International Cooperation Agency. Working across fifteen countries, the agency implements projects focused on staff training aimed at non-revenue water management.⁵⁶

Case Study 3: Philanthropy (Sub target 6.5, 6.A, 6.B: Improve transboundary water management, international cooperation and participation of local communities)

Centre of Excellence for Change

The Centre of Excellence for Change works to increase collaboration between government employees in the water sector with the community they serve. They believe public sector governance needs reform to provide sustainable services during uneven economic growth. Their goal is to achieve sustainable water services by involving local stakeholders. Their programs work to connect the communities using the water to the water utilities’ employees. Their work also involves education efforts recognizing that efficient water use involves social and psychological dimensions. The organization operates primarily in India with additional global partnerships. The Centre of Excellence for Change believes effective service for underserved communities will come about if the local officials and the community are brought together.⁵⁷

⁵⁴ eWaterPay. (December 2017).

⁵⁵ UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water. (2017).

⁵⁶ UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water. (2017).

⁵⁷ Centre of Excellence for Change.

Target	Needed Intervention	Sample Investment	Asset Class
WASH targets (6.1, 6.2, and 6.3)	Build efficient infrastructure	Sustainable Water Fund	Public-Private Partnership
Increase water efficiency and reduce water scarcity (6.4)	Reduce non-revenue water	eWaterPay	Private Equity
Protect ecosystems (6.6)	Preserve natural habitat	Sustainable Water Fund	Public-Private Partnership
Improve transboundary water management, international cooperation and participation of local communities (6.5, 6.A, 6.B)	Involve local communities in water management decisions	Centre of Excellence for Change	Philanthropy

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Affordable and Clean Energy

“Ensure access to affordable, reliable, sustainable and modern energy for all.”

Dazzle R. Bhujwala

SDG 7 calls for universal access to affordable, reliable, sustainable and modern energy, including access to electricity and clean cooking - by 2030, a mere 13 years from now. The importance of these goals cannot be overstated. Lacking access to electricity means food cannot be refrigerated and school children cannot do homework at night. Indoor air pollution from burning charcoal and other fuels for cooking kills several million people every year. Countries that fail to provide modern energy services stifle opportunities for inclusive economic development and overall security.

Sustainable Energy for All (SEforALL)⁵⁸ has identified 20 high impact countries mainly in Sub-Saharan Africa and Asia, that lack access to electricity and clean cooking. These countries

⁵⁸ Sustainable Energy for All, (2017 September), Energizing Finance – Scaling and refining finance in countries with large energy access gaps. Retrieved from: https://www.seforall.org/sites/default/files/2017_SEforALL_FR4P.pdf

account for 80 percent of the 1.06 billion people lacking electricity and 84 percent of the 3.04 billion living without clean cooking.

Several research findings confirm that finance for energy access is not on track to meet universal energy access objectives by 2030. For 2013-14, public and private, international and domestic finance commitments for electricity in the 20 high-impact countries averaged \$19.4 billion⁵⁹ a year. This falls well below the estimated \$45 billion needed annually to meet the 2030 objective of universal electrification (SEforALL, 2015). Of these commitments, nearly two-thirds were made to only a handful of countries in Asia—specifically, India, the Philippines and Bangladesh. One-third of commitments - just over \$6 billion a year - went to 13 Sub-Saharan Africa countries, which account for over half of the global population living without electricity access.

International finance of \$11.7 billion a year, almost entirely from public sector institutions, represented just over half of the finance commitments tracked for electricity in high-impact countries in 2013-14. Further, an analysis of development finance flows showed that over 2011-15, just under 28 percent of development finance commitments for electricity went to these countries and less than 10 percent of that was committed to Sub-Saharan Africa on average (SEforALL and AfDB, 2017). Additional evidence of the challenge in achieving energy access, is that 69 percent of the commitments to high-impact countries saw disbursement delays.⁶⁰ This was more prevalent for large-scale infrastructure such as power plants, and transmission and distribution. Such delays risk achievement of SDG 7.

Research also confirms that finance commitments for decentralized energy solutions are miniscule, accounting for roughly \$200 million per year, or only 1% of total trackable finance for electricity committed in 2013- 14 across the high-impact countries. This fact is alarming, given that decentralized solutions - alongside centralized energy services - offer enormous

⁵⁹ Sustainable Energy for All, (2017 September), Energizing Finance – Scaling and refining finance in countries with large energy access gaps. Retrieved from: https://www.seforall.org/sites/default/files/2017_SEforALL_FR4P.pdf

⁶⁰ Sustainable Energy for All, (2017 September), Missing the Mark – Gaps and lags in disbursement of development finance for energy access. Retrieved from: https://www.seforall.org/sites/default/files/2017_SEforALL_FR1_0.pdf

promise to provide basic electricity services quickly and at significantly lower costs to rural communities that face the biggest energy access gaps.

Financial commitments for clean cooking in these high-impact countries are shockingly low. Annual residential clean cooking investment needs are by one estimate at least \$4.4 billion per year (IEA, 2015); however, trackable residential clean cooking investment in the 20 high-impact countries averaged just \$32 million a year in 2013-14. Research indicates that with targeted strategies from national governments and the international finance community, and partnerships with the private sector can help gain energy access, especially in rural areas with the biggest gaps at a much faster pace. One positive trend since the early 2000s is the steady increase in international development finance commitments and disbursements for electricity, although much of this target non-high-impact countries (SEforALL).

Investable sub-goals

7.1: Ensure universal access to affordable, reliable and modern energy services

7.2: Increase substantially the share of renewable energy in the global energy mix

7.3: Double the global rate of improvement in energy efficiency

Indicator (50): Share of the population using modern cooking solutions

Limitation: Some limitations of this indicator are that it does not take into consideration the type of cooking stove, cooking practices, individual behaviors and housing characteristics, all of which affect the actual performance of a household's cooking practices. Measuring access to modern cooking solutions while taking care of these limitations, presents the possibility to improve the health of poor households, while keeping a track on indoor air pollution.

Indicator (51): Share of the population using reliable electricity

Limitation: Current available global databases only support a binary tracking of access to electricity, such as access to electricity at home for lighting purpose. This metric does not capture important dimensions of access to electricity, including: i) Off-grid and isolated mini-grids solutions which are required in many countries as transitional alternatives to grid-based electricity, and could potentially serve as long-term solutions in geographically

remote areas; ii) supply problems, where grid electricity suffers from irregular supply and frequent breakdowns; iii) problems of low or fluctuating voltage; and iv) the difference between electricity supply and electricity services, which implies the ownership of the appropriate electrical appliance and the actual use of electricity.

Indicator (52): Incentives for low-carbon energy in the energy sector, (\$/tCO_{2e})

Limitation: This indicator is used to measure reduction in GHG emissions to the socially optimal level and application of social cost of GHG emissions, which requires government policies related to carbon regulation, taxes, or carbon markets. This indicator is underscored as it is agnostic to the type of policies pursued by governments. Governments retain their full flexibility for identifying and pursuing the instruments that are best adapted to their context.

Indicator (53): Rate of primary energy intensity improvement - proxy for energy efficiency

Limitation: Energy intensity is an imperfect proxy indicator because it is affected by external factors such as fluctuations in the volume and sectoral structure of GDP. Statisticians will need to specify whether the indicator is expressed as a moving average over multiple years or whether growth is reported year-on-year.

Complementary National Indicators for Goal 7:

- 7.1. Primary energy by type. IEA reports annual data on the primary energy sources used by each country, such as coal, oil, gas, renewables, or biomass.
- 7.2. Fossil fuel subsidies (\$ or %GNI). This indicator measures subsidies to fossil fuels that are consumed directly by end-users or consumed as inputs to electricity generation.
- 7.3. Share of energy from renewables. This indicator measures energy produced from renewable sources as a percent of total energy production.

Financing and Partnerships Examples:

Case Study One: A PPP between Grameen Shakti, ME SOLshare, and the World Bank deploys capital for a 70,000 solar home system (SHS) program every month in Bangladesh, making it

the fastest growing program of its kind in the world⁶¹. Three million systems have already been installed, providing electricity to 18 million people in the country.

Case Study Two: Copenhagen Infrastructure Partners (CIP) have raised \$4.3B in Energy Infrastructure Fund that primarily invests in onshore and offshore wind as well as solar PV projects located in Northern & Western Europe and in North America. CIP will execute the fund’s investments in attractive energy infrastructure projects sourced and developed across these markets.⁶²

Target	Needed Intervention	Sample Investment	Asset Class
Access to affordable, reliable & modern energy services	Provide reliable and alternative (off-grid) energy infrastructure	PPP with Grameen Shakti, ME SOLshare and World Bank. UBS launches Green Bond Indices	Private Investments, High Grade Corporate Bonds and Government Bonds. Partnerships with multilateral development banks
Increase share of renewable energy	Increase investments in renewable energy and alternative fuels	Copenhagen Infrastructure Partners, an infrastructure fund invests in onshore and off-shore wind and solar projects	Private and Public Equities
Double the global rate of improvement in energy efficiency	Regulations and standards for energy efficient transportation and industrial production	TESLA	Global Equities, Corporate Bonds, Private Market Investments - Thematic Debt/ Infrastructure

⁶¹ World Bank, (2016 October), Solar program brings electricity to off-grid rural areas in Bangladesh. Retrieved from: <http://www.worldbank.org/en/news/feature/2016/10/10/solar-program-brings-electricity-off-grid-rural-areas>

⁶² Institutional Investment in Infrastructure, (2018, April), CIP holds \$4.3B final close for infrastructure fund. Retrieved from: <https://irei.com/news/cip-holds-e3-5b-final-close-infrastructure-fund/>



Climate Action

“Take urgent action to combat climate change and its impacts.”

Andre Shepley

Climate action, the UN’s thirteenth Sustainable Development Goal (SDG), can broadly be defined as proactively reversing the current path of climate change and preventing or mitigating its anticipated adverse effects on humans and ecosystems. The challenge in defining this goal stems from its breadth. It can be helpful to divide this goal along two verticals: 1) transitioning to a global clean energy economy; and 2) proactively mitigating and preparing for the changes in ecosystems resulting from a more volatile climate. The UN has further outlined sub-goals to help provide a framework for interpretation and implementation. Each of the five sub-goals has a corresponding indicator⁶³, and

⁶³ The list of sub-targets & indicators are as follows: **1) sub-goal #1:** Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries; **indicator #1:** Number of countries with national and local disaster risk reduction strategies, number of deaths/missing persons from disaster per/100k people; **2) sub-goal #2:** Integrate climate change measures into national policies, strategies and planning; **indicator #2:** Number of countries that have communicated the establishment of an integrated plan to address adverse impacts of climate change; **3) sub-goal #3:** Improve education, awareness-raising and human/institutional capacity on climate change mitigation/adaptation/reduction; **indicator #3:** Number of countries that have integrated mitigation/adaption/reduction into education curriculums; **4) sub-goal #4:** Implement the commitment undertaken by developed-country parties to the UN framework convention on climate change to jointly mobilize \$100B by 2020 to address the needs of developing countries through capitalizing *The Green Climate Fund*; **indicator #4:** Mobilized funds (in USD) per/yr starting in 2020; **5) sub-goal #5:** Promote mechanisms for raising capacity for effective climate-change related planning/management in the least developed countries and small island States, with a focus on women, youth, and local/marginalized communities; **indicator #5:** Number of least developed countries/small island States receiving specialized support (& the magnitude of that support)

provides a useful structure to map specific investments and track real progress. Certain sub-goals aren't investible (e.g. integrating climate change measures into national policies) while others are simply a call to action for fundraising (*the Green Climate Fund*). The organization of sub-goals helps further catalyze efforts amongst various institutions, however, currently no single or collective group of actors are held accountable to the indicators.

To dimension the actual magnitude of investment needed to properly address this goal, it is helpful to think about the two separate verticals mentioned earlier. In terms of transitioning to a clean energy economy, the required investment has been pegged at roughly ~\$1T of annual funding.⁶⁴ This may come in the form of renewable energy investments, energy efficiency, carbon sequestration, and other projects or efforts that generally lower greenhouse gas emissions. In addition, future losses in oil & gas revenue, asset valuations, and stranded assets will destroy value that currently exists in the ~\$1-1.5T global market for fossil fuels. For example, if that revenue pool was cut in half the corresponding relevant shareholders / bondholders would lose out on ~\$500B+ of revenue and ~\$50-100B in profit. These costs will need to be absorbed within the overall costs of transitioning to a clean energy economy.

On the other side of the coin, natural disasters and ongoing changes in the ecosystem resulting from climate change have resulted in an annual run-rate of ~\$250B in economic losses over the last decade in the US alone.⁶⁵ While the latter figure does not represent required investment, it underscores magnitude of implied economic savings and benefits from the preparation and mitigation of the effects of disasters through certain investments. While it is tough to estimate what will be required to further strengthen resilience to future volatility in climate and weather patterns, we can use the economic damages aforementioned as a rough proxy. Taken together, roughly ~\$2T+ of annual incremental investments are likely required to achieve effective real progress on climate action (when factoring in value destruction and economic loss prevention). This represents only ~2-3% of global GDP. To highlight the investment needs gap, the run-rate of global investments in renewable energy has only been in the ~\$200-300B/yr range of late.

The underlying sub-goals of SDG #13 illustrate a focus on allocating resources towards developing countries and small island nations. The consensus view and early evidence of changes in the natural ecosystem both suggest these regions will be particularly vulnerable. Accordingly, the most

⁶⁴ <https://www.kiplinger.com/article/investing/T052-C008-S002-how-to-invest-for-climate-change.html>

⁶⁵ <https://feu-us.org/case-for-climate-action-us3/>

impact is expected to come from projects within these countries. Specifically, the ten countries who have been found to suffer the most from extreme weather events linked to climate change from 1996-2015 include Honduras, Myanmar, Haiti, Nicaragua, Philippines, Bangladesh, Pakistan, Vietnam, Guatemala, and Thailand.⁶⁶

The Green Climate Fund, a funding mechanism created under sub-goal #4, has thus far received pledges worth ~\$10B, and has mobilized nearly ~\$600M worth of projects to date. A few examples of the types of projects that fit within the portfolio include a line of credit for solar rooftops in commercial, industrial, and residential housing sectors in India, an affordable housing and resilient urban renewal project in Mongolia, and a coastal renewal project in the Republic of the Marshall Islands. With 76 projects ongoing, and ultimate ambitions for ~\$100B of annual funding, *The Green Climate Fund* is an investment vehicle with large potential for enacting change. The largest source of capital for this fund comes in the form of grants (~43%) and loans (~43%), and there is an overall 60/40 public/private split.

Some large corporations have made serious efforts to reduce their individual contributions to climate change in the form of reducing their carbon footprint or investing in projects to offset their own emissions. For example, Alphabet Inc. has claimed it purchases enough renewable energy to match its carbon footprint, driving ~\$3B of new capital investment in renewables globally. While it is important that public companies play the role in a proactive manner, it is generally more difficult to use ownership in public stock as a mechanism to catalyze climate action with real results. Further, companies tend to overstate their efforts in order to improve their image—a well-known phenomenon called ‘greenwashing’.

The landscape for investing into SDG #13 is broad, encompassing all direct investments in clean energy, infrastructure and related projects that promote the mitigation, adaption, and prevention of negative climate-induced effects. On balance, the most common investments in both clean energy and within *The Green Climate Fund* are either fixed-income vehicles or public grants. Going forward, however, partnerships amongst several large institutional investors could bring a new wave of private capital to the fore by sharing risk, limiting financial return expectations, and partnering with creative structures that allow for increased asset flows into SDG #13.

Delving a bit further and considering the scale and breadth of infrastructure investments required, it is helpful to also consider potential creative financing structures that will help catalyze more

⁶⁶ <https://germanwatch.org/fr/download/16411.pdf>

capital into action. A simple way to look at this would be to consider which beneficiaries 1) have the greatest demand to achieve impact; 2) require capital preservation; and 3) those who have the highest tolerance for risk. Structured in such a way, blended capital from governments or development banks (1), private wealth (2), and sophisticated institutions (3) could all play a role in maximizing the magnitude of capital that flows to fund projects that fall under SDG 13's umbrella.