



# Sustainable Finance

Report 2021



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## About:



## Swiss Learning Exchange | SLX Swiss Learning Exchange

Swiss Learning Exchange (SLX) is an E-Learning organisation based in Switzerland. Focusing on the areas of sustainability and skill development, SLX aims to drive innovation and accelerate learning.

The goal of SLX is to help the world get access to high-quality online learning that is engaging and rich. Our learning content reflects the needs of the modern learner, uses advanced storytelling techniques, state of the art video production and uses in-depth research to convey, engage and inspire.

## SDGPlus |

SDGPlus is a global blended-learning community platform that focuses on sustainability and the UN's Sustainable Development Goals (SDGs). SDGPlus aims to collaborate with like-minded partners and create a sustainable impact together.

SDGPlus wants to facilitate learning, research and knowledge sharing by working alongside the growing worldwide sustainability community. In doing so, we want to bring together the brainpower of the whole community towards finding sustainable solutions.





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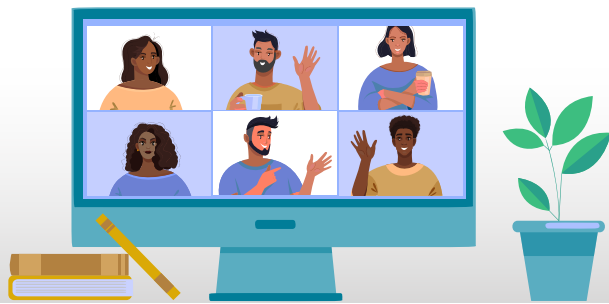
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## Speakers:

Before we get into the report, we want to thank all our speakers who attended our sustainable finance webinar event. Their support and contributions are what made the webinar series and this report possible.

### 1.1 Sustainable Finance and the Great Reset

#### Thierry Malleret

Thierry Malleret is the founder and managing partner of Monthly Barometer. Its eponymous flagship monthly newsletter is Thierry's brainchild and the product of his innovative and exacting approach to research and analysis.

At the World Economic Forum in Switzerland, Thierry founded and headed the Global Risk Network and led the programme team for the annual meeting at Davos.

In 2015 Thierry also founded the Summit of Minds. A series of high-level meetings that combine hard thinking on major macro issues, the importance of personal wellbeing, and the power of nature.



#### James Strittholt

James Strittholt has over 26 years of experience in applying computer mapping technologies (including GIS and remote sensing) to conduct various ecological assessments and conservation planning projects in the U.S. and internationally.

Over the last 22 years, he has been the principal investigator on numerous projects including, nature reserve designs, conservation gap analyses, forest and watershed assessments, ecological modelling, and remote sensing applications in conservation.

He has also authored numerous reports, peer-reviewed articles, and white papers. Finally, he has taught numerous workshops on conservation planning. Areas of expertise include conservation planning, landscape ecology, geographic information systems, and remote sensing.



## 1.2 Sustainable Finance and the 4th Industrial Revolution

### Nicholas Davis

Nicholas Davis is an innovation and strategy professional who has 15 years of experience in economic analysis, strategy, foresight, technology policy and public-private partnerships.

He has worked over a decade with the World Economic Forum, where he famously co-authored the book "Shaping the Fourth Industrial Revolution" with Klaus Schwab.

He is currently wearing multiple hats, from working as the Special Advisor for Innovation for GAVI, the Vaccine Alliance, to working as a Professor at Thunderbird School of Global Management at Arizona State University teaching the ethics and governance of emerging technologies.



### Neelam Chhiber

Neelam Chhiber is Co-founder and Managing Trustee at Industree Crafts Foundation, Co-founder and Managing Director of Industree Skills Transform Private Ltd. and Co-founder, Director at Mother Earth.

An Industrial Design graduate from the National Institute of Design in Ahmedabad, Neelam has for the past three decades been working with artisans in rural areas, by providing design, technical, marketing and management solutions, in order to bridge the urban-rural divide.

Over the years, Neelam and her team have built a holistic ecosystem that works with rural women in India that equips them with the necessary skills and tools to set up self-owned enterprises close to their homes.



### Florian Kohler

Florian is passionate about building bridges of trust to help facilitate greater capital flows into developing countries, by supporting entrepreneurs to build impactful companies using technology, knowledge transfer and creativity.

He believes that innovation not only evolves out of necessity but out of a desire to make the world a better place. Development capital can play a key role in catalysing these resource flows.

Florian has been working in the Impact investment market since 2005. He holds an MBA and an LL.M and is a member of Obviam's Executive Committee.



## 1.3 Sustainable Finance and Education



### Mahesh Krishnamurti

Mr. Krishnamurti has been appointed to the Board of YES Bank Limited as Non-Executive Director by a Government of India Notification in March of 2020. He is also an LP and Advisor to the founders of Arka Venture Labs, a cross-border, B2B deep-tech seed fund focused on supporting early-stage technology ventures in India and transitioning them to the Silicon Valley ecosystem.



Mr. Krishnamurti is a Supervisory Board member at MyCFO, a well-established consultancy with a large client portfolio, that is adept at implementing practical solutions. As an Impact Advisor, he is deeply interested in Sustainability and Environmental, Social, Governance (ESG) challenges.

### Harish Mamtani

Harish Mamtani is the Co-Founder of SEED Education, an organisation established in March 2013 that invests in and provides curriculum, training, and management services to high quality, low-cost private schools (LCPS) in India.

Harish has 18 years of experience in technology, finance, investment, and wealth management. He has managed over \$1.5 billion as a Wealth Advisor at Merrill Lynch, Morgan Stanley, Bank of America, and Bluefish Capital.



He is also the founder of 'Recordent,' which is an online technology portal that helps businesses record customer dues, recover payments faster and reduce risk before offering service, credit, or loans by checking the payment history of new customers.

### Vandana Goyal

Vandana Goyal has dedicated her life to being an enabler for more children to receive an education, which empowers them to design their own futures. As Avanti Fellows' Executive Trustee, she is responsible for the scaling of their blended learning approach in STEM to ensure low-income students have access to the best colleges in India.

As Akanksha's CEO, she led its growth to become one of the largest networks of public-private partnership schools in urban India. In 2012, she was appointed by the World Economic Forum as a Young Global Leader.



### Umesh Malhotra

Umesh is the founder and CEO of Hippocampus Learning Centres. Hippocampus operates 19 schools and 160 Kindergarten centres in rural India. They deliver high quality education, as proven by studies done by JPAL and Grey Matters.

In the next few years, Hippocampus aims to transform education for India, classroom by classroom. It is the stated medium-term goal of Hippocampus to provide quality education, comparable to that of Finland, to as many children as the child population in Finland (~300,000), at 1% of the cost of Finland, which they call Mission Finland.





## 1.4 Sustainable Finance and Healthcare

### Shravan Subramanyam

Shravan Subramanyam is a physician, executive and business leader with 15 years of experience in life sciences and medical devices including complete P&L management, sales, marketing and business development in pharmaceuticals and diagnostics. He has a passion for diagnostics and is particularly keen on exploring “personalized healthcare,” with the goal of “providing the right treatment for the right group of patients.”

Proficient in leading diverse, cross-functional teams & agencies across regions; delivering robust growth by combining medical and marketing expertise and bringing an entrepreneurial mindset to large ventures.



### Siraj Dhanani

Siraj is a successful entrepreneur, healthcare professional and active angel investor in MedTech and IT. He is the founder and CEO of InnAccel, India's first medical technology innovation platform. It creates a portfolio of medical devices designed, engineered, and priced, for global emerging markets like India.

Previously, he founded and led PharmARC, a healthcare marketing analytics and consulting firm. He also has experience in pharmaceutical marketing (BMS, NJ) and healthcare investment banking (UBS, NYC).



### Gulshan Yadav

Gulshan Yadav works as the National Sales Head of Healthcare Finance for Clix Capital. He has vast experience, both with Original Equipment Manufacturer (OEM) and FIs in financing healthcare.

Clix Capital is a smart, contemporary lending firm that uses technology to make loans simpler, faster, and more accessible for their customers.



## 1.5 Sustainable Finance and Environment

### Bernd Jan Sikken

Bernd Jan Sikken is currently working as the Head of Strategy for De Volksbank. De Volksbank is a customer-centric and impact-driven financial institution from the Netherlands. Core impact themes include advancing sustainability, providing access to good housing, and advancing financial resilience.

Bernd Jan Sikken has a wealth of international experience. He has worked in the World Economic Forum as Associate Director and at PwC as Managing Consultant, Strategy & Change, Financial Services.



### Ms. Preeti Sinha

Ms. Preeti Sinha is the Executive Secretary for the United Nations Capital Development Fund (UNCDF). UNCDF makes finance work for the world's 46 Least Developed Countries (LDCs) and aims to harness the untapped growth potential of these LDCs.

Preeti is a globally experienced investment and development banker associated with cumulatively raising and managing US\$ 20 billion in institutional development capital.

She has worked across 8 world-class organizations absorbing diverse, multi-cultural leadership skills at 5 global investment banks and 2 multilateral development banks and the World Economic Forum.



### Dr. Nitin Pandit

Nitin Pandit is the Director of the Ashoka Trust for Research in Ecology and the Environment (ATREE). He is responsible for the management and development of ATREE. Reporting to the Board of Trustees, he oversees the development of the organizational strategy for applied research in areas related to conservation and restoration of ecosystems and the environment in India.

Focusing on biodiversity, water and climate change, Nitin guides the work of about 250 staff, including 20 faculty, about 125 researchers, and an Academy of 50 doctoral students. Nitin has a bachelors and a couple of masters' degrees in engineering, and a doctorate in public policy.



## 1.6 Sustainable Finance and Energy

### Stefanie Held

Stefanie Held is the Chief of the Sustainable Energy Section at the United Nations Economic Commission for Europe (UNECE). UNECE's major aim is to promote pan-European economic integration.

UNECE contributes to the enhancement of the effectiveness of the United Nations, through the regional implementation of outcomes of global United Nations Conferences and Summits. It gives focus to the United Nations global mandates in the economic field in cooperation with other global players and key stakeholders, notably the business community.



### Jay Kumar Waghela

Jay Kumar Waghela is the Head of Business Development for Fourth Partner Energy Private Limited. Fourth Partner Energy Private Limited is India's leading Solar Energy company. They are committed to enabling India and Southeast Asia to emerge as global leaders in the transition to a low-Carbon economy.

Fourth Partner Energy aims to be every business' one-stop destination to meet all their renewable energy requirements. They understand the customer's energy requirements and offer solutions that are better for the client's bottom-line and much better for the environment.





## 2. Key Findings

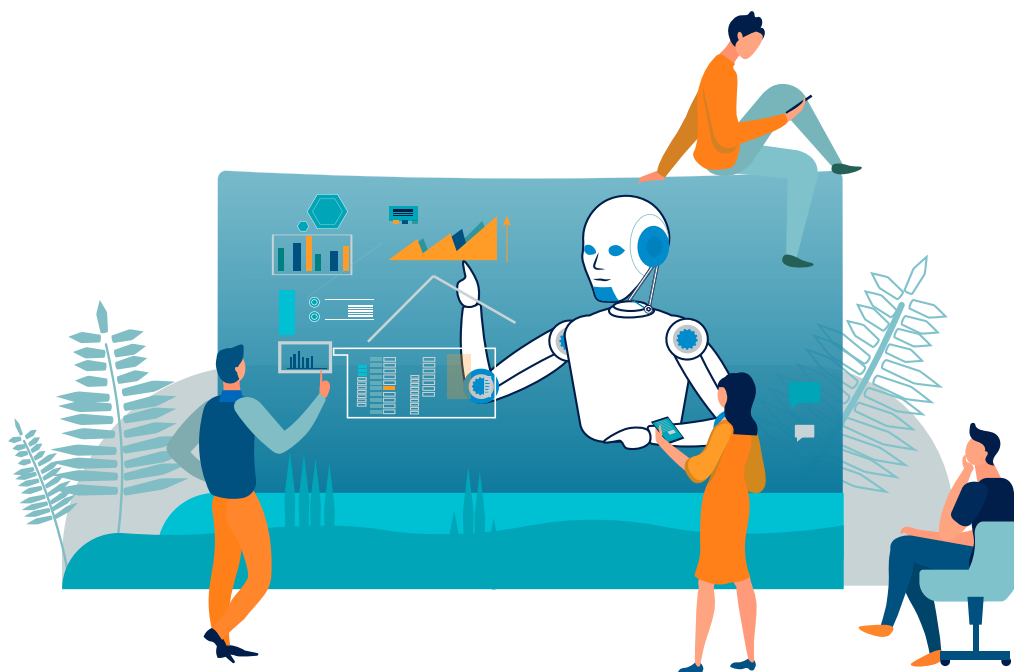


### 2.1 Sustainable Finance and the Great Reset



- 40 to 60 million people will be pushed into extreme poverty in 2020, due to the COVID-19 pandemic.
- COVID-19 is seen as a catalyst for driving changes in society, economy, and environment. Young people around the world are already making more environmentally and socially conscious decisions.
- The Great Reset is possible today because we have the tools and technology to bring people from across the globe together. However, it is important to note that the power of this technology can be misused.
- To make serious headway towards the Great Reset, policies (e.g., fewer subsidies for fossil fuel and an increase in carbon taxes) and governance mechanisms (e.g., better financing systems for sustainable projects) need to be developed.
- To reset the world and make it more sustainable, education and knowledge will play a huge role in empowering individuals to make informed decisions.

## 2.2 Sustainable Finance and the 4th Industrial Revolution



- Experts predict that in the US, where the 4th revolution has already begun, 47% of jobs are at risk of automation.
- Though there is still a huge technological and digital divide in the world today, it does not take away from the fact that technology has helped provide a platform and identity to many individuals and communities.
- Technology can have a significant impact on how we shape our society. For a better society, we must use the power of finance to invest in ethical technologies.
- The finance sector needs to be able to fund technological innovations, both in urban and rural areas.
- With the rise of surveillance, exploitation, and non-consensual tracking, the conversation around individual privacy becomes exceedingly important.



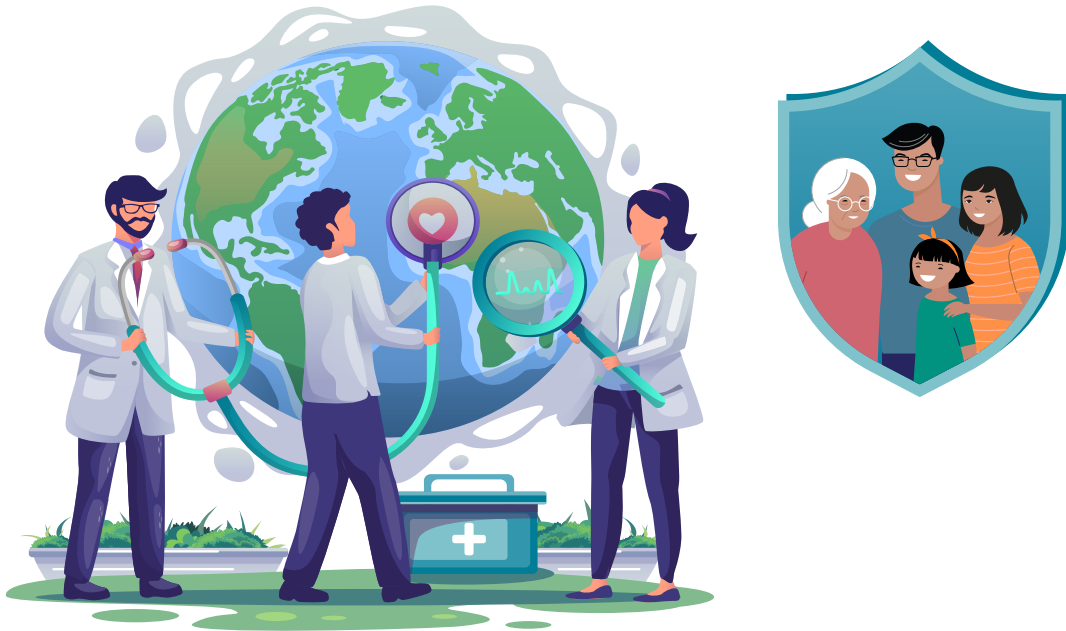
## 2.3 Sustainable Finance and Education



- In 2010, global EdTech has received \$500 million in Venture Capital investment. This number has grown 32-fold to \$16.1B in 2020.
- In India, 70-80% of schoolchildren do not have access to technology that enables them to continue with their education during the pandemic.
- Vandana's 'Ghar Pe School' program saw only 50% of the students learning 50% of the educational content.
- From Umesh's 'Hippocampus' experience only 50-60% of parents respond to or engage with their children's online education.
- The transition to a new education system requires financing mechanisms that consider the need for long-term investments. Examples include social impact bonds, microfinance, blended finance, etc.



## 2.4 Sustainable Finance and Healthcare



- 50% of the economic growth differentials between developing and developed nations are attributed to poor health and low life expectancy.
- 12% of the world's population still spends at least 10% of their household budget on healthcare. This is pushing 100 million people into extreme poverty.
- With the right tech intervention, cost per life saved in India can be as low as 10,000 rupees (USD \$137).
- The Biotechnology Ignition Grant offers up to Rs 50 lakhs (roughly USD \$70,000) to healthcare innovators and entrepreneurs.
- In a country like India, innovations can make healthcare more accessible and affordable. An example is Aravind Eye Care. Its centres provide free services to 70% of its patients. The costs are covered by charging wealthier individuals for its services.



## 2.5 Sustainable Finance and Environment



- 25% of the world's species are currently at risk of going extinct and we are losing species 1,000 times faster than at any other time in human history.
- To replenish and protect our environment and its ecosystem services, we need an estimated \$722–967 billion per year by 2030. However, we are currently lagging in investments by 85%.
- Diagnostic Assessment of Select Environmental Challenges in India revealed that the cost of environmental degradation in India amounted to about Rs. 3.75 trillion (80 billion USD). That is equivalent to 5.7% of GDP.
- GDP does not consider ecosystem services, nor the cost of environmental destruction. This means that our conventional market forces incentivise the destruction of environment to make a profit.
- A report published by the Business & Sustainable Development Commission revealed that investing in sustainability offered at least a \$12 trillion opportunity to companies.





## 2.6 Sustainable Finance and Energy



- As it stands, the energy sector (electricity, heating, cooling, and transport) is responsible for 73.2% of global greenhouse gas emissions.
- In 2019 alone, the world's 60 largest banks financed \$824 billion in fossil fuel, while only \$316 billion was invested in renewable energy. Developing and emerging economies have invested \$152 billion, out-investing developed countries in renewable energy.
- Investing in energy efficiency can reduce energy greenhouse gas emissions by 40%.
- Globally, 840 million people live without access to power, and many developing countries are exploring the option of mini grids as an option for low carbon and energy stable solutions.
- Even in the best-case scenario of sustainable development of energy, by 2050, 56% of primary energy needs will still be met by fossil fuels.





## 3. Introduction to Sustainable Finance

### 3.1 What is Sustainable Finance?



In recent history, traditional large-scale financial institutions have focused on seeking financial returns, regardless of environmental, social, and governance factors. In other words, they wanted to maximise profits above all else. Certainly, there have been socially and environmentally responsible banks and investors during this time, but they were only a tiny segment of the financial community.

However, in recent years, we have started to see a change. Some banks are starting to go beyond maximising profits and are actively investing in sustainability. The umbrella term that is used to describe such an investment is “Sustainable Financing.” So, you can define sustainable financing as the integration of environmental, social, and governance (ESG) factors in the financial decision-making process. In layman’s terms, sustainable financing is all about investing money into sustainable projects.

Sustainable financing is not a new concept. It has always been an alternative investment opportunity, but it was never mainstream. However, using the broad term sustainable financing can oversimplify the extensive range of sustainable investments that exist. Let us explore the spectrum of sustainable financing and learn about a few of the key terms used in it.

- **Level 0: Traditional, profit-driven financing.**
- **Level 1: Environmental, Social, and Governance (ESG) risk management.** At this level, financial institutions are screening out investments that could potentially bring negative outcomes.
- **Level 2: Sustainable Impact Investing.** Sustainability factors and profit both drive investment decisions. These include investment in carbon reduction projects like renewable energy, poverty reduction through microfinancing, waste reduction projects like building recycling plants, and so on.
- **Level 3: Impact First Investing.** As the term suggests, social and environmental interests take priority over profit. Impact first investing goes well beyond avoiding harm and managing risks.
- **Level 4: Sustainable Philanthropy.** It takes this generosity even further. This is where profit is completely disregarded in favour of social and environmental solutions.

## 3.2 Sustainable Finance: Creating Awareness

The UN estimates that the gap in financing required to achieve the SDGs is at 2.5 trillion dollars per year. Our best chance of bridging this gap and achieving the 17 SDGs and 169 targets by 2030 is using sustainable finance. However, the research team at SLX and SDGPlus discovered that many people were not fully aware of what sustainable finance even means. It came down to sustainable finance being a relatively new concept and educational content around it not being readily available.

If more people are aware of what sustainable finance is, it allows it to become mainstream and thus more widely accepted as the default way of financing. To achieve this, SLX and SDGPlus worked together to create explainer style animated videos on sustainable finance; A short 5-part series that introduced people to definitions and the range of sustainable finance options, and walk them through its various environmental, social and governance frameworks and concepts. The 5 episodes and their learning objectives are as follows:

### 1. Episode 1: What does sustainable finance mean?

- a. Definition of sustainable finance.
- b. Exploring the various levels of sustainable investments.
- c. The role of big banks in sustainable finance.
- d. Understanding global trends and the raw potential of sustainable finance.

### 2. Episode 2: History of finance

- a. Learning about the history of sustainable finance.
- b. Differences between traditional finance and sustainable finance.
- c. Understanding how present-day banks have evolved to incorporate sustainable finance.
- d. Exploring the different sustainable initiatives adopted by the traditional financial sector.

### 3. Episode 3: What is ESG investing?

- a. Understanding why a bank needs to invest in sustainable finance.
- b. Learning about the Environmental, Social, and Governance (ESG) criteria and the Equators Principles.
- c. Learning about the organizations that can help banks identify and incorporate relevant ESG factors.
- d. Understanding frameworks that are important for the implementation of Sustainable Finance.

### 4. Episode 4: Green finance

- a. Definition of green finance.
- b. Learning about the various instruments in green finance.
- c. Learning about the challenges in green finance and what is stopping it from becoming mainstream.
- d. Exploring how green finance can overcome its challenges.

### 5. Episode 5: Social finance

- a. What is Social Finance, and what are examples of Social Finance projects.
- b. Who are Social Economy Organisations, and how can they access social finance funds?
- c. Understanding the challenges that plague social finance.
- d. The future of social finance. Exploring the importance of Microfinance.

## 3.3 Starting the Conversation: Webinar Series on Sustainable Finance

### 3.3.1 The 6 Webinar Themes

After publishing our 5-part explainer style animated videos, SLX and SDGPlus wanted to explore how sustainable finance can be practically utilised to make real-world impact and achieve the SDGs by 2030. However, we were neither experts nor practitioners of sustainable finance, so we explored our network to identify specialists who could help us with this. During our conversations with these specialists, 6 themes were identified. These were areas with the most critical need for sustainable finance and presented the best opportunity to achieve the SDGs by 2030.



The 6 themes and their core objective:

#### 1. The Great Reset

COVID-19 lockdowns may be gradually easing, but anxiety about the world's environmental, social, and economic future is only intensifying. There is a good reason to worry: the effects of climate change are intensifying, and a sharp economic depression could be imminent. Even though these outcomes are highly likely, it is very much solvable. To achieve this, the world needs new mindsets, new approaches and sustainable finance.

#### 2. The 4th Industrial Revolution

We stand on the brink of a technological revolution that will fundamentally alter the way we live and work together. This 4th Industrial Revolution will be unlike anything humans have experienced before in terms of scale, scope, complexity, and transformation. We already have a glimpse into this digital revolution's future with the arrival of emerging technologies such as AI, robotics, autonomous vehicles, cryptocurrency, 3-D printing and IoT. However, we need to identify which technology we need to invest in to maximise positive, sustainable impacts and minimise negative ones.

### 3. Education

The COVID-19 pandemic has created the largest disruption of education systems in history, affecting 1.6 billion learners in more than 190 countries. This crisis has forced educational institutions, teachers, faculty members, parents, and students to think creatively, be innovative and embrace online education. However, the COVID-19 crisis and the unparalleled education disruption is far from over. If we are to recover from this, reimagining and building a resilient education system using sustainable finance will be pivotal.

### 4. Healthcare

In the last decade, global healthcare systems have enjoyed the benefits of strong economic growth and investment. However, during the same period, healthcare costs have continued to rise. Due to growing challenges and inadequate resources, between 70 and 100 million people could slide into extreme poverty in 2020, and 2 million preventable deaths could occur because of health disruption. How can countries around the world use sustainable finance to improve their healthcare quality, affordability, and accessibility? .

### 5. Environment

In a world challenged by climate change, resource scarcity, and an alarming loss of biodiversity, countries struggle to implement effective environmental strategies. The clock is ticking, and the world needs to act soon, otherwise, we will cause irreversible damage to our environment. Sustainable finance can help solve this catastrophic problem. However, this would require the finance industry to re-think and reform its strategies.

### 6. Energy

As it stands, the energy sector (electricity, heating and cooling, and transport) is responsible for 73.2% of global greenhouse gas emissions. On top of this, between 2016 and 2020, private banks have funded a total of USD 3.8 trillion in fossil fuel projects. To transition to a future with sustainable energy, we need to identify how financial institutions can sustainably divert investment from fossil fuel to renewable energy.

## 3.3.2 Structure of the Webinar

SLX and SDGPlus wanted to include a diverse range of opinions so that solutions put forward were more holistic and could apply to everyone. To do so, we wanted our speakers to come from various parts of the world and represent a range of different sectors. Our goal was to have one thought-leader, one expert or practitioner, and one entrepreneur for each webinar.

With regards to the webinar itself, we set the following parameters:

1. Duration – 60 minutes.
2. Frequency – Once a month.
3. Structure
  - a. Introduce the webinar topic.
  - b. Introduce the speakers.
  - c. Each speaker is provided 10 minutes to address the core theme of the webinar from their perspective.
  - d. Open the webinar to the audience for a question-and-answer session.
  - e. Each speaker highlights 3 key takeaways

With the sustainable finance webinar series now complete, our next step was to write this report. In this report, we have summarised the opportunities, challenges, and solutions that were discussed in all six of our webinars.



## 4. Sustainable Finance and the Great Reset

### 4.1 Introduction



The COVID-19 pandemic has massively disrupted our economy and society. It is continuing to create havoc and has brought uncertainty to all aspects of life. To combat this, the World Economic Forum (WEF) put forward an initiative known as the Great Reset. In a nutshell, the Great Reset is an urgent call for global stakeholders to come together and combat the coronavirus crisis and shape a sustainable recovery to the future. To elaborate what it means, the WEF partnered with Thierry Malleret to author the book 'COVID-19: The Great Reset'.

The book 'COVID-19: The Great Reset' argues that the global health crisis has deepened the inequality gap in our economy and society. It warns us that if we do not tackle the deep-rooted issues of our society immediately, the pandemic could increase the likelihood of violent shocks such as conflicts and revolutions. To prevent that from happening, the Great Reset initiative looks to shape post-pandemic recovery by holistically focusing on all three pillars of sustainability – society, environment, and economy.

To explore how the Great Reset initiative could be achieved using sustainable finance, Satyadeep Rajan (President of SLX) moderated a webinar with Thierry Malleret (Founder and managing partner of Monthly Barometer), James Strittholt (Executive Director at Conservation Biology Institute) and Prajeeth Sitherasenan (Head of Communities at SLX).



## 4.2 Global Context

The COVID-19 pandemic has severely impacted the global community. On the side of the economy, the aviation industry faced its largest crisis yet, with 90% of the global fleet grounded. Meanwhile, global commodity prices saw their highest fall on record, dropping by 20.4% in March 2020. Tourism was forecasted to fall in 2020 by between 58% to 78%.

In terms of social costs, the education of 1.6 billion students was disrupted, which is 9 out of every 10 students worldwide not having access to classroom education. Urban areas, which account for more than 90% of COVID-19 cases, are facing the worst of the pandemic. Meanwhile, efforts to eliminate extreme poverty have been massively set back, with global poverty expected to increase for the first time since the 1998 Asian Financial Crisis. Nowcasts estimates that 40 to 60 million people will be pushed into extreme poverty in 2020, due to the coronavirus pandemic.

Thierry Malleret describes this catastrophe as an inflexion point, comparable to World War 2. Both of these global events brought the entire world to its knees. Meaning, the recovery from this global pandemic will be equally painful – financially, socially, economically, and emotionally. However, like World War 2, the world might see a massive expansion of monetary and fiscal policies post-recovery, especially in OECD countries. Utilising this effort for sustainable development will be crucial to avoid any future disasters.



Thierry sees a silver lining in the COVID-19 crisis: People are developing a greater awareness of climate change and the impact of the human footprint on the earth. With the right push, he believes, the recovery of our society has the potential to make the world a better and more equal place for all. Thierry hopes that as the climate crisis intensifies, there will be a generational shift in global consumption patterns and more people adopting a sustainable lifestyle.

This “change in sentiments,” as Thierry commented, is a global phenomenon. The younger population of the world is making more environmentally and socially conscious decisions. They are actively participating in saving the planet in diverse ways - campaigns, courses, blogs, articles, videos, discussion forums, to even developing innovative, low-cost sustainable tools and technologies.

Such drastic change in worldview and life choices has ripple effects on how industries and sectors prepare for their future. Thierry points out that one of these evolving sectors is the financial sector. For example, as more people become environmentally conscious, development funds such as the “natural asset investment fund” becomes more popular, which could then facilitate a move towards sustainable development.



## 4.3 Opportunities



During the Sustainable Finance and the Great Reset webinar, three key opportunities were highlighted by our speakers.

### 4.3.1 COVID-19 as a Catalyst

As Winston Churchill once said, “never let a good crisis go to waste,” the coronavirus is seen as a catalyst for driving change in society, economy, and environment. Authors of the Great Reset book, Klaus Schwab, and Thierry Malleret, describe three core components of the Great Reset that could achieve this change:

1. **Stakeholder economy** – creating conditions where stakeholder participation, advisory and dialogue are at the top of any discussions in creating change.
2. **Sustainable Building** – using the environmental, social and governance framework in building a more resilient and equitable infrastructure.
3. **4th Industrial Revolution** – harnessing the innovations of the 4th industrial revolution for greater public goods.

### 4.3.2 Appreciating Nature

Emerging infectious diseases (EIDs) are a significant burden on global economies and public health. 60% of EIDs are zoonotic and a majority of these (72%) originate in wildlife. The outbreak of the coronavirus is one such example of an EID.

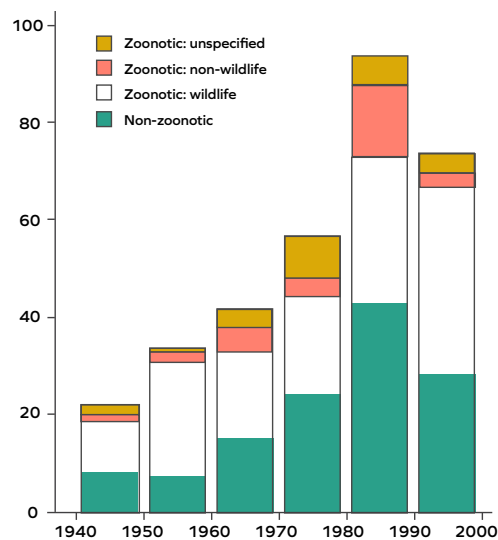


Figure 1. Number of EID events per decade.

Source: Jones, et al., 2008. Global trends in emerging infectious diseases.

Over the years, EIDs have been on the rise. Research shows that EID origins are notably correlated with socio-economic, environmental, and ecological factors. The spread of zoonotic diseases highlights the fact that damage to the environment is correlated with damage to public health and society. This is to say that the more we destroy nature, the more harm it inflicts on us.

However, the positive outcome is that many people are now aware of the critical role the environment plays in protecting us. Thierry states that the coronavirus has brought much-needed attention to nature. If this awareness of nature continues, the opportunity to mitigate climate changes becomes much greater.



Today we are more attuned and aware of the importance of nature.



Thierry Malleret





### 4.3.3 Power of Data and Information

The Great Reset is possible today because we have the tools and technology to bring people from across the globe together. From bullet trains and jets to artificial intelligence, machine learning and the internet.

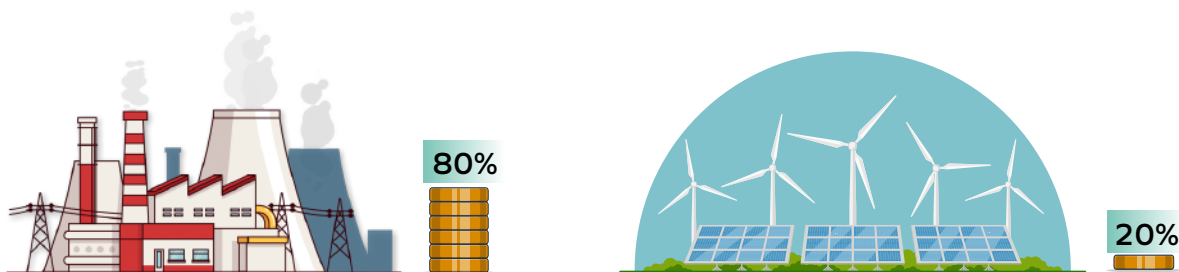
Using these technologies, people from all over the world can collaborate and share ideas to build a better world. For example, using social media platforms to deliver online courses on sustainable development. On top of this, people now have access to a vast amount of real-time data and information, which was never previously available. Using this information, people are now able to make informed decisions by finding practical, sustainable solutions.

However, even though we have just scratched the surface of big data, it is important to note that its power can be misused. Therefore, we need to be extra cautious while using and relying on this technology. This means defining clear moral and ethical boundaries for the development and use of innovative technology, which puts human and societal welfare first.

## 4.4 Challenges

Even with data, tools and financing, any form of societal transformation is going to be challenging. On one hand, people are continuing to make a profit at the expense of the planet. On the other hand, people are spending little to save it. Moreover, those who are trying to save the earth are competing for the same pool of resources, which is small, to begin with.

For example, 80% of the power sector's budget is invested in fossil fuels. Only 20% is allocated for renewable energy. Therefore, people in wind and solar power are competing against each other for this tiny fraction of funds.



All of this means that any transformation of society, economy, and environment is going to require a system level change. However, bringing this system level change even via the Great Reset is going to be extremely challenging. The speakers at our webinar highlighted 3 critical challenges.

### 4.4.1 Going Back to Business-as-Usual

COVID-19 can certainly act as a catalyst to bring transformational change to our society, economy, and environment, but there is a huge fear that when the situation improves post-pandemic, things might go back to business as usual. Some of the early signs of this fear can already be seen in the energy sector.

COVID-19 resulted in a temporary drop in global CO<sub>2</sub> emissions. In many developed countries, the burning of coal reduced significantly. However, in many developing countries, fossil fuel was seen as the key to post-pandemic economic recovery. Recent research shows that coal consumption has increased in China and India.

This is a huge challenge that government, policymakers and academics need to come together to address.



#### 4.4.2 Policy and Governance

It is not easy to change the entire system on which society has been built. This is particularly true for policy and governance. There are certain systems in place that are difficult to change on a global scale.

For example, we know that fossil fuels are contributing to climate change. To mitigate climate change, removing the entire fossil fuel industry might seem like the most logical step. However, shutting down an entire sector on which the economy has been built is complex and difficult. This is why governments across the globe continue to subsidize fossil fuels.

Therefore, to make serious headway towards the Great Reset, policies (such as fewer subsidies for fossil fuel and an increase in carbon taxes) and governance mechanisms (such as better financing systems for sustainable projects) need to be developed.

#### 4.4.3 Technology funnelling

A big part of the Great Reset is the role of technology, data, and information. However, all of these come with their own set of challenges.

One of the biggest issues discussed today is the breach of personal data privacy on the internet. From an individual's browsing history to their banking history. All this private and sensitive information is being collected, analysed, and often misused.

Furthermore, personal information available on social media is often sold and used by advertisers with minimal consent from the user. Moreover, social media channels can create silos and hivemind thinking by only showing the user what they want to see – funnelling like-minded people together and creating confirmation bias. Creating such silos poses a great threat to building a more inclusive and open society.

Therefore, if we want to build back better, we need to put human rights, including privacy and the right to information, at the core of the Great Reset. It involves understanding the rules and regulations of the digital economy and directing them to an equal, just, and ethical society.

### 4.5 Solutions

To overcome the above challenges, our speakers highlighted 5 solutions that can be utilised to achieve the Great Reset and transition to a more sustainable world.

#### 4.5.1 Environmental policy

Global policy and its implementation need to consider their environmental impact. For example, Payments for Ecosystem Services (PES) is an innovative approach towards nature conservation. It proposes a variety of arrangements through which the people or communities who safeguard environmental services (such as watershed protection and forest conservation for carbon sequestration and landscape beauty) are provided incentives for their work, via low-interest loans, subsidies, and market payment.

This approach aims to recognise nature's value and encourage communities to protect it. Thierry believes that if we treat nature as an asset and put a price on its various ecosystem services, it can help society value it.



Pricing the externalities can enable the finance and policy sectors to further integrate these natural services in the management and decision making for the economy.

Thierry Malleret





#### 4.5.2 Demonstration Effect

At an individual level, our daily choices and decisions we make have an impact on our environment and the people around us. "When we change our behaviour, it also impacts others around us, potentially becoming viral and contagious."- Thierry Malleret.

For example, take the rise in popularity of using reusable straws. As more people saw how unsustainable single-use plastic straws were, they switched to a culture of reusable straws to protect the environment. As individuals stop using single-use plastic straws, eventually there will be no market for them. This pushes industries to replace plastic straws with sustainable ones.

This example highlights how a change in culture that was brought about by awareness created a positive environmental demonstration effect. As more people join in on the culture of sustainability, it further amplifies its effect.

#### 4.5.3 Investing in Education and Data

For any change to occur, education and knowledge are required to empower individuals to make informed decisions. Today, we have the tools to reach billions of people online. People now have access to publicly available research that shows the impact of unsustainable activities on the environment. Greater investment into education, research and data collection can enable greater awareness, better representation, and empower people to make informed sustainable decisions.

However, a big challenge in achieving this is the dissemination of accurate information, meaning information must be easily understandable and accessible to everyone. Solutions like google scholar, which makes publicly available research papers easy to access, are a step in the right direction.

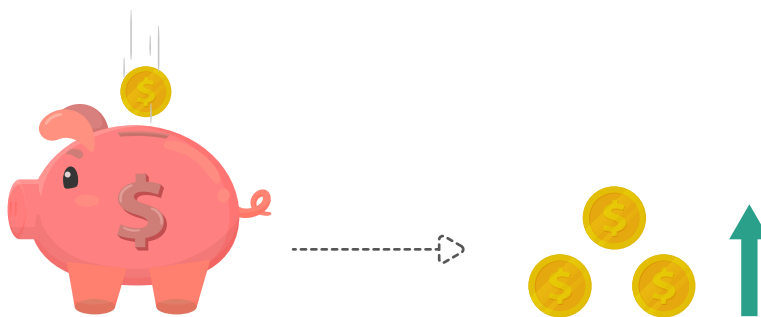
Then there is the challenge of data privacy. Here companies like duckduckgo have developed browser extensions and search engines to prevent online tracking and non-consensual data collection.

If we continue to invest in education, ensure equal access to information and stop the unethical collection of data, we can start resetting the world to be more sustainable.

#### 4.5.4 Sustainable Finance and Long-Term Investment

One of the biggest challenges in achieving sustainable finance is the lack of standardisation in measuring the impact and risks associated with sustainable projects. This disincentivizes investors from investing in sustainable projects and incentivises them to go for low-risk investments. However, many studies have shown that investing in sustainable projects has a much better return on investment in the long-term.

For example, every dollar that is invested in clean energy today could net 3 dollars in future fuel savings by 2050.



To make it scalable, companies need to also start reporting the impact of their sustainable projects and be more transparent with the process.

#### 4.5.5 Carbon Tax and Subsidies

Combining the sustainable financial solutions with policies that incentivise individuals and corporates to invest in sustainability, can help achieve the Great Reset more holistically. These can be positive, like subsidies for renewable energy, or negative, like taxing carbon emissions.

For example, in 2017, Switzerland had the lowest carbon emission levels among member countries of the Organization for Economic Co-operation and Development (OECD). It was able to achieve this because the country introduced a carbon tax in 2008, initially amounting to €10 per tonne of CO<sub>2</sub>.

### 4.6 Gaps

From the discussion with Thierry, James and Prajeeth, we identified several gaps that still need to be addressed, which future conversations and research around the Great Reset can investigate. These include:

**1. Global effects of large-scale transformation** – For any global transformation to take place, it requires massive restructuring of existing systems, behaviours, policies, and regulation. To achieve this, millions of people will have to be forced into new systems, which has the potential to be very disruptive, unequal, and challenging. Identifying how the transition to the Great Reset can impact people and their livelihoods is therefore very much needed.

**2. Fiscal impact and mobilization issues** – Similarly, a transformation also requires mobilization of huge sums of capital to develop infrastructure, hire labour and provide opportunities for reskilling.



## 4.7 Highlights



### Opportunities

- 1. COVID-19 as a catalyst** – The coronavirus is seen as a catalyst for driving change in society, economy, and environment.
- 2. Appreciating Nature** – Many people are now aware of the critical role the environment plays in protecting us.
- 3. Power of Data and Information** – The Great Reset is possible today because we have the tools and technology to bring people from across the globe together.

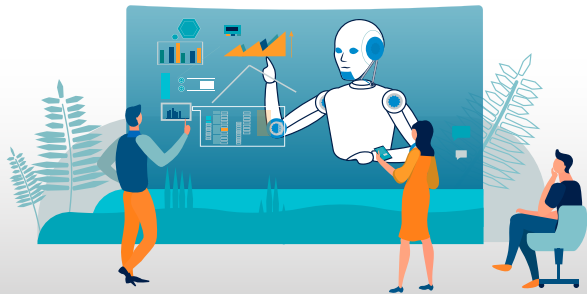
### Challenges

- 1. Going back to business-as-usual** – There is a huge fear that when the situation improves post-pandemic, things might go back to business as usual.
- 2. Policy and governance** – To make serious headway towards the Great Reset, policies (such as fewer subsidies for fossil fuel and increase in carbon tax) and governance mechanisms (such as better financing systems for sustainable projects) need to be developed.
- 3. Technology funnelling** – Technology is instrumental in the Great Reset and should be empowered by public and private stakeholders. However, technology should benefit society and not just the creators the technology.

### Solutions

- 1. Environmental Policy** – Global policy and its implementation needs to consider environmental impact.
- 2. Demonstration effect** – At an individual level, our daily choices, and decisions we make have an impact on our environment and the people around us.
- 3. Investments in education and data** – For any change to occur, education and knowledge are required to empower individuals to make informed decisions.
- 4. Sustainable Finance and Long-Term Investment** – Sustainable finance has the power to encourage businesses and governments to invest more in our society and environment.
- 5. Carbon tax and subsidies** – Combining sustainable financial solutions with policy that incentivises individuals and corporates to invest in sustainability can help us achieve the Great Reset more holistically.





## 5. Sustainable Finance and the 4th Industrial Revolution

### 5.1 Introduction



The 4th Industrial Revolution (4IR) describes the radical changes to the way people live, work, and relate to one another due to today's emerging technologies that blurring the boundaries between the physical, digital, and biological spheres. This includes technological revolutions such as artificial intelligence, genome editing, robotics, 3-D printing, virtual reality, the internet of things, and big data.

The 4IR is unlike any other revolution we have seen before. It is rapid, large-scale, and is taking us to uncharted territories. To contextualize 4IR, let us look at the other 3 industrial revolutions:

1. The First Industrial Revolution used water and steam power to mechanize production. This saw a greater development of energy sources that made large scale transport and heavy machinery possible.
2. The Second Industrial Revolution used electric power to create mass production. This period also included the invention of telecommunication, which transformed the way people communicated.
3. The Third Industrial Revolution used electronics and information technology to automate production. This saved a lot of time and brought efficiency to industries.
- 4 The fourth industrial revolution is built on the third, but it is more sophisticated. It refers to the automation of traditional manufacturing and industrial practices at scale, using modern smart technologies.

Our key goal for the webinar discussion was to understand the importance of 4IR and to identify how to utilise sustainable finance to maximise 4IR's positive impacts and minimise its negative effects. To achieve this, Satyadeep Rajan (President of SLX) moderated the discussion with Nicholas Davis (Co-author of Shaping the Fourth Industrial Revolution), Neelam Chibber (Co-founder and Managing Trustee at Indus-tree Crafts Foundation), and Florian Kohler (Managing Director Private Equity at Obviam).

## 5.2 Global Context



The 4th Industrial Revolution promises a fundamental shift from a simple digital economy to one that is highly complex and interconnected, bringing with it a massive societal change. Let us explore how the 4IR is impacting society.

### 5.2.1 Changing Job Market

Innovative technologies within the 4th Industrial Revolution can be powerful agents for good. They can grant access to information, provide societal platforms, improve quality of life and livelihoods as well as provide greater access to products and services across the globe.

However, one of the biggest emerging fears this revolution poses, is the 'end of work', driven by automation and digitization. Experts predict that in the US, where the 4th revolution has already begun, 47% of jobs may be at risk of automation.

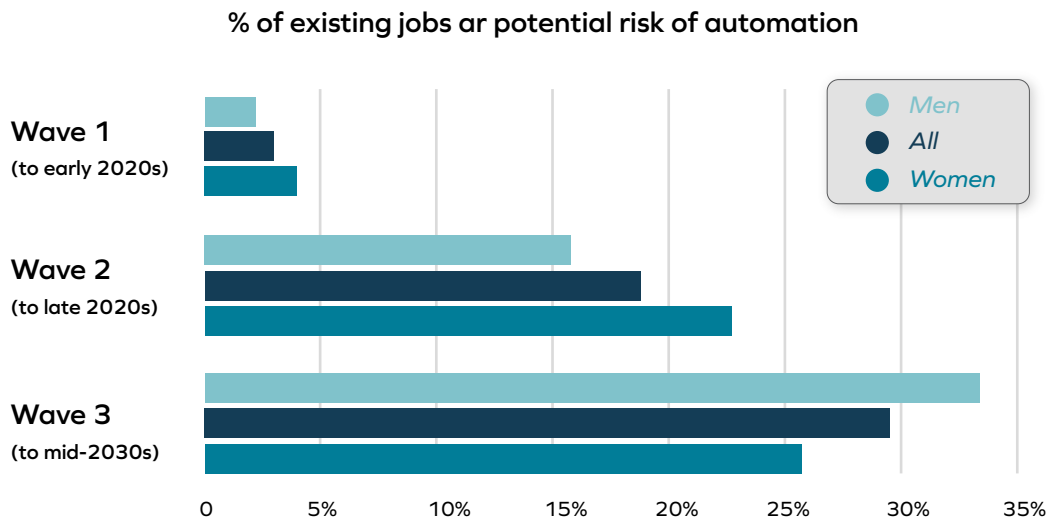


Figure 2. Percentage of existing jobs at potential risk of automation  
Note: PwC estimates based on OECD PIAAC data (median values for 29 countries)  
Source: PwC, n.d. Will Robots Really Steal Our Jobs

The 4IR and its innovations have also disrupted many traditional workflows. Some of these disruptions have led to task complexity, lack of worker unions, job loss, skill mismatch, etc. To cope with these and other issues, global discussions around the integration of technology, the definition of work in the future, standardization, and regulation of these technological innovations is important.

### 5.2.2 Transparency and Big Data

An important part of the successful move towards the 4th industrial revolution is transparency. Take the example of cryptocurrency and its growth. One of the reasons for this is that the transactions are always transparent. This transparency gives people a sense of control and confidence. Since anyone can access the relevant information and verify the transactions, this greater sense of control among people is seen as a positive.

Big data has tremendous potential to make an impact at scale. As of today, several applications and websites collect and use big data to provide services to customers. However, among the general population, there is a lack of understanding and awareness of how big data works, how it's collected and how certain people and organisations can misuse it.

### 5.2.3 The Quantified Self

A clear example of the integration of technology with people, is the rise of self-tracking healthcare devices. These wristband devices and applications can monitor one's movements, pulse, heart rate, menstruation cycle, calories consumed, and GPS location. This quantified self-movement refers to the self-tracking of bodily functions to enable better healthcare management. Health is not just about surgery, medicine, and drugs anymore. People have been equipped with information and knowledge, which can help them make healthier life choices.

Though the data collected every day has become crucial for many individuals, it has some side effects. Personal biomedical data is sensitive and can be misused. For example, data mining of biomedical databases makes it easier for individuals with political, social, or economic agendas to generate misleading research findings to manipulate public opinion and sway policymakers.

## 5.3 Opportunities

These innovative technologies can have both negative and positive impacts. To start, the speakers presented three opportunities that the 4IR can bring to the world.

### 5.3.1 Formulating 4IR rules Today



The transition to the 4th Industrial Revolution is not to say that the world is changing, and we have to deal with it. But in fact, it is an exhortation to all of us - we have the power to make decisions right now, that will govern and impact the future within the revolution. Let us use our power both individually and collectively.

Nicholas Davis



What this means is that the direct and indirect decisions we make today about technology directly impact the development of it and the role it will play in the future. *"[The] rules of tech are being written today."* - Nicholas Davis

For example, if everyone comes together and decides that a smartphone should give its owner control over what data and information applications have access to. Policymakers and smartphone companies might be forced to make these changes.

However, when formulating these rules, it must be objective, representative, and inclusive of everyone in society. If humans are writing these rules today, there is a possibility for them to be discriminatory, as much as we can make them equitable. Thus, the more diverse the people making these rules are, the more equal and unbiased they will be.





### 5.3.2 Inclusion of All

Though there is still a huge technological and digital divide in the world today, it does not take away from the fact that technology has helped provide a platform and identity to many individuals and communities. For example, artist communities in villages can use social platforms to sell their crafts and create awareness about their brand, history, region, etc. They can do this simply using their mobile phones and an internet connection.

This last-mile access is a massive transformation for global connectivity and dialogue. It is no longer one-way communication. The more people from remote regions connect with digital technologies, the more representative the data becomes. This can be used to identify gaps in services, resources, opportunities, etc., that can potentially enhance the welfare of the people in those regions.

Such advancements will require an investment of time, resources, and capital to push these technologies to the peripheries. However, the reach of these technologies is still limited. Thus, we need greater investments through sustainable finance that can enable the distribution of technology and the internet to everyone.

### 5.3.3 Changing Nature of Organizations

The technological leap of the 4IR will fundamentally change the nature of organizations today. We have already seen the adoption of remote work across the globe, due to COVID-19. The continuation of work was only possible due to technology and sophisticated communication tools.



The conventional organizations that are funded by capital markets are not going to be the long tail in the 4th Industrial Revolution. There is a need for collaborative systems that can regenerate the economy.

Neelam Chibber



Thus, the conventional organizational setup may not stand the test of time. There is a need to develop a new work system that is based on collaboration between different sectors, organizations, and industries. This collaboration at both the national and international level will be a necessity, but also a tool for the future of work.

## 5.4 Challenges

Historically, the transition from one industrial revolution to another has always been disruptive. It always had both positive and negative impacts. The 4IR is no exception, and because of its speed, it might even be more challenging. The speakers discussed the three key challenges that are sure to plague the 4IR.

### 5.4.1 Education and Future of Work

If the transition to the 4th industrial revolution is inevitable, one of the critical challenges is the already existing technological inequality.

Online platforms were seen as an opportunity to learn digital skills and for workers to stay relevant. However, due to generational inequality in terms of technology know-how, some segments of the population are unable to access such knowledge, information, and skills.

A similar gap across generations also occurs due to a lack of quality education, resources, affordability, and a learning environment. Due to the pandemic, this gap was exacerbated.

### 5.4.2 Privacy and Digital Identity

The second key challenge posed by these information technologies is privacy. Most people intellectually understand why protecting privacy is important. However, we allow for tracking and sharing of information without much thought.

With the rise of surveillance, exploitation, and non-consensual tracking, the conversation around individual privacy becomes that much more important. The prevalent news of the misuse of confidential information, such as for discrimination at the workplace, unequal access to insurance coverage, etc., are all consequences of this breach in privacy. Therefore, technology and its role in matters of privacy need to be discussed at a policy level, where we need to actively look for solutions and interventions.

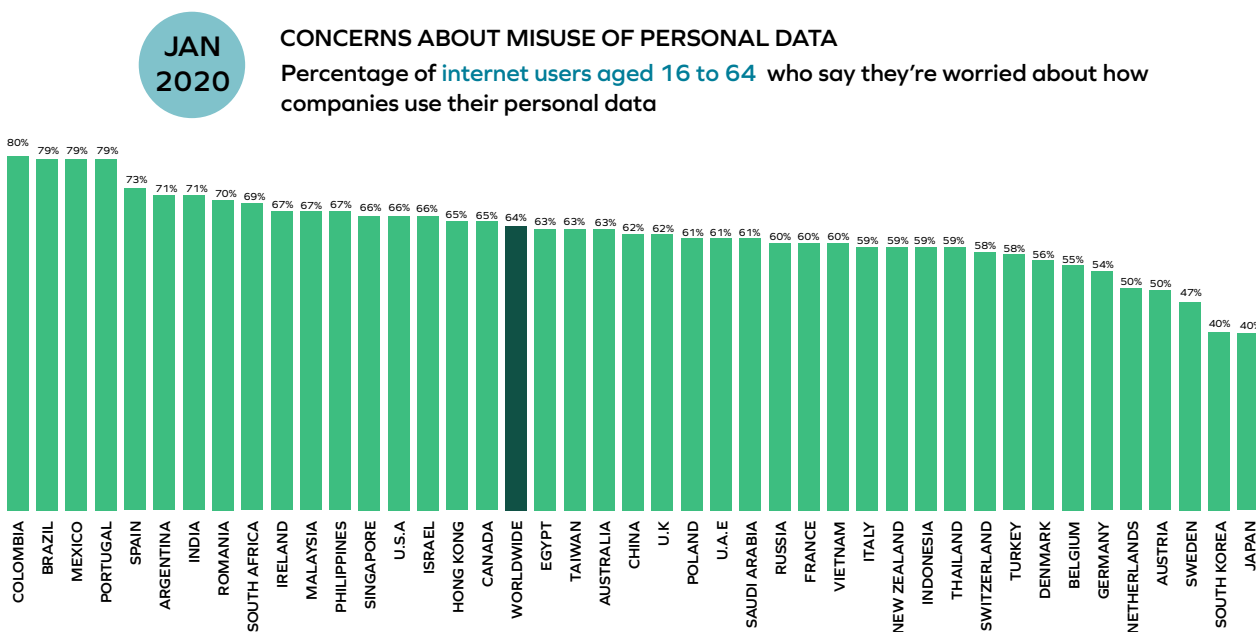


Figure 3. Concerns About Misuse of Personal Data.  
 Source: Kemp, 2020. Digital 2020: Global Digital Overview.

### 5.4.3 Investment to the Last Mile

Finally, even though the 4IR has the potential to bring society together, it can only achieve this via finance. The finance sector needs to invest in technological innovations both in urban and rural areas.

However, the financial sector currently lacks the incentives to invest in rural areas. The biggest obstacle is the lack of data and the potential risk associated with it. This prevents investors and banks from investing in the last mile. If this is not regulated, the 4IR can widen the current inequalities.

If organizations and sustainable finance can bridge this information gap and build better risk profiles, we can create a more equal impact.

## 5.5 Solutions

“We have the power to make decisions for the future of technology development. It means that we have the agency to overcome these challenges and pave the way for a just and equal society” -Nicholas Davis.

Let us explore the two solutions put forward by our speakers to overcome the 4IR's challenges.

### 5.5.1 Ethical technology development

Technology can have a significant impact on how we shape our society. For a better society, we must use the power of finance to invest in ethical technologies. Take the typewriter example, it was invented as the machine that could help visually impaired people to write.

However, one of the problems is that the designers of technology are not always able to predict how their technology will be used, and what kind of unintended consequences it may have. Considering this, we need to develop frameworks and regulations for finance companies to invest in ethical technologies that minimise unintended consequences and maximise positive impact.

On top of this, any technology at scale can have impacts that can be hard to anticipate and challenging to correct afterwards. Hence, sustainable investment in the 4th Industrial Revolution means regulating and constantly revising the ethics, morals, and value of technology.

### 5.5.2 Return on investments

Sustainable finance has a slow adoption rate among the major financial institutions. Initiatives like the Development Finance Institutions (DFIs) is trying to fill this gap. However, they are too small and require additional capital support from the private sector.

To achieve this financial goal, the 4IR can help bridge the information and data gap, which allows for greater financial participation and thus more development investment. The combination of the 4IR and sustainable finance can create a feedback loop, which has the potential to achieve sustainable development.

We are already starting to see this. Research using readily available data shows that investors get positive financial returns with low risk, when they invest in sustainable projects. Florian commented that he has seen good risk-adjusted returns of more than 10% on sustainable development projects.

### Sustainable investments and expected portfolio returns by investment knowledge

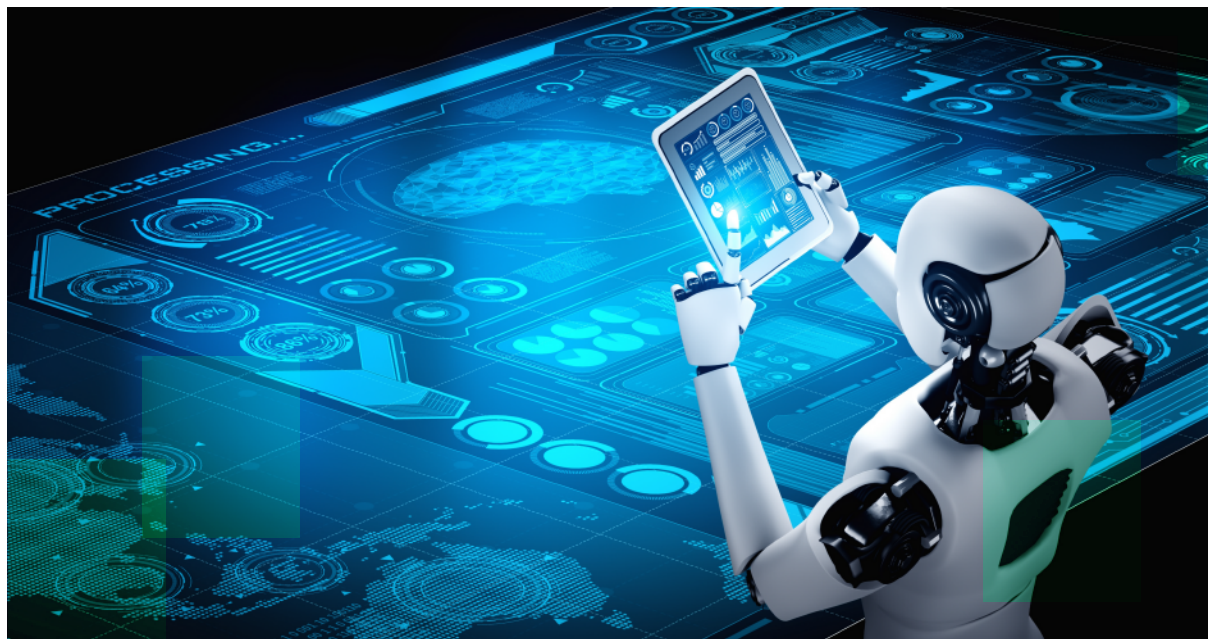
	Beginner/rudimentary	Intermediate	Expert/advanced
Total annual return expected on investment portfolio	8.8%	9.7%	10.9%
Proportion of investment portfolio invested in sustainable investments	32%	36%	42%

Figure 4. Sustainable investments and expected portfolio return by investment knowledge. Source: Schroders Global Investor Study, 2018.

## 5.6 Gaps

From the discussion with Nicholas Davis, Florian Kohler, and Neelam Chibber - we identified three gaps, which future conversations and research around the 4IR can investigate. These include:

- 1. Consensus on ethical technology** – more research on how to develop ethical technology needs to be done. In an era of automation, the lack of understanding of the role of ethics in technology can lead to the widening of the inequality gap.
- 2. Skill gap** – The rapid transition to 4IR means that the nature of jobs and work will drastically change. We need to identify how to deal with these changes by equipping our workforce with relevant skills and education.
- 3. Role of government** – What is the role of the governments in developing policies and regulations for technology and 4IR?



## 5.7 Highlights



### Opportunities

- 1. Formulating 4IR rules today** – The direct and indirect decisions we make about technology today directly impact its development and the role it will play in the future.
- 2. Inclusion of all**– Technology has helped provide a platform and identity to many individuals and communities.
- 3. Changing nature of organizations** – The technological leap of 4IR will fundamentally change the nature of how we work and how organizations function.

### Challenges

- 1. Education and the future of work** – Due to generational inequality, some segments of the population are unable to access useful knowledge, information, and skills.
- 2. Privacy and digital identity** – With the rise of surveillance, exploitation, and non-consensual tracking, the conversation around individual privacy becomes that much more important.
- 3. Investment in the last mile**– The financial sector currently lacks the incentives to invest in many rural areas. The biggest obstacle is the lack of data and the potential risk associated with it.

### Solutions

- 1. Ethical technology** – Technology can have a significant impact on how we shape our society. For a better society, we must use the power of finance to invest in ethical technology.
- 2. Return on investments** – There is an opportunity to make sustainable finance mainstream, as research shows that investors can have positive financial returns when they invest in sustainable projects.





## 6. Sustainable Finance and Education

### 6.1 Introduction



There is substantial progress being made towards meeting SDG 4: Quality Education. Between 1999 and 2012, the number of out-of-school children decreased from 106 million to 58 million and 60% more children were enrolled in primary schools.

Even with access to global education is on the rise, this progress has been uneven. Children in rural areas are twice as likely to not go to school, compared to children in urban areas. Additionally, the poorest children are five times less likely to complete primary school.

During the COVID-19 pandemic, the accessibility to education worsened, with 31% of school children lacking the resources to shift to remote learning.

How can sustainable finance help bridge this gap and reduce inequality in both offline and online education?

Satyadeep Rajan (President of SLX) moderated the webinar with Harish Mamtani (Co-Founder of SEED Education), Vandana Goyal (Executive Trustee at Avanti Fellows), Umesh Malhotra (Founder and CEO of Hippocampus Learning Centres), and Mahesh Krishnamurti (Board Director of YES Bank Limited) to explore this question.

## 6.2 Global Context

COVID-19 has resulted in a loss of education equivalent to 74 days for each student, due to school closures and lack of access to remote learning. It is estimated that due to learning losses and an increase in dropout rates, this generation of students could lose an estimated \$10 trillion in earnings, which is equivalent to 10% of global GDP. This could increase poverty levels by 63%. Furthermore, the education sector is receiving less government funding because of increased capital flow into health-care. This may result in the education sector taking six years to recover to 2018 levels of capital flow.

However, overall funding in the education sector has increased in the 20th century. But a large chunk of this funding today is going towards education technology (EdTech). Since 2010, global EdTech has received \$500 million in Venture Capital investment. This number has multiplied by 32 to \$16.1B in 2020.

### \$16.1B of Global Edtech Venture Capital in 2020

Global Education Venture Capital Funding,  
2010-2020 in USD Billions

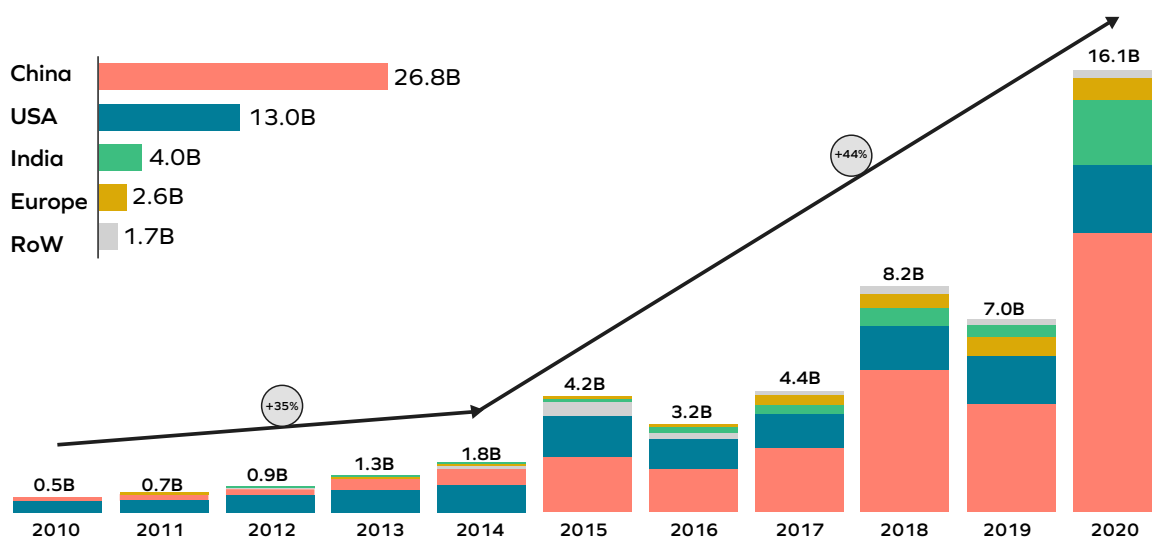


Figure 5. Global Education Venture Capital Funding.  
Source: HolonIQ, 2021. 10 charts to explain the Global Education Technology Market.

EdTech refers to hardware and software designed to enhance teacher-led learning in online and offline classrooms and improve students' education outcomes. Examples include submission of homework online, platforms dedicated to online courses (e.g., Khan Academy, Coursera), informal mobile learning applications, gamification, or virtual reality applications.

Even though EdTech might be seen as an opportunity to improve education, the gap of accessibility, quality, and affordability is still a challenge. For example, as of 2016, 4 billion people still did not have access to the internet. Without access to the internet, making EdTech the norm is not going to be easy. So, we will need to build the necessary infrastructure and integrate relevant technologies to allow for greater affordability and access, both in traditional and online education.

## 6.3 Opportunities

How can sustainable finance invest in the education sector – traditional and online - make it accessible and affordable? Our speakers put forward two opportunities.

### 6.3.1 Transitioning to remote learning

When people faced nationwide lockdowns, several groups and communities developed low-cost Ed-Tech solutions to transition children to remote learning. Vandana was part of a program in India called 'Ghar Pe School' (School at Home) which leveraged simple tools like WhatsApp, Google forms, and YouTube videos.



Since almost 40% of the school children under our offline teaching programs had access to shared smartphone devices at home, we used low-cost communication methods to deliver our curriculums. These tools were successful because it required low-bandwidth internet access and could be operated from simple mobile devices.

Vandana Goyal



Since the shift to remote learning required additional support from parents, Hippocampus incorporated graded activities that required the participation of both the parent and the child. Additionally, the online classroom consisted of focused groups, each having 5-6 students. It ensured that everyone received equal attention.

The most important takeaway from these programs is that they are cost-effective. They do not require any additional resources and make use of what the families already had access to.

### 6.3.2 Transforming education system

The increased attention and investment that the EdTech sector has enjoyed over the past few years has created an opportunity for traditional education as well: Blended learning, a model that is a hybrid of offline and online education. This means that investment into EdTech have the potential to influence and transform traditional education. This means not just changing curriculums, but pedagogical and content changes that incorporate the needs of current as well as the future generation of students.

*"These EdTech investments might not generate an impact in the short-term, but they do provide a breathing space to improve the overwhelmed infrastructure of traditional education. It's an opportunity to enhance the quality of education – not just in schools but improve the way children engage with their learning at home as well."* - Harish Mamtani & Vandana Goyal

## 6.4 Challenges

To transform our education system, it needs to overcome three key challenges, according to our speakers. These are challenges not just about access to education and quality improvement, but also in curriculum design, pedagogy, and education funding.



### 6.4.1 Technological divide

*“In India, 70-80% of schoolchildren do not have access to technology to continue with their education.”*  
- Vandana Goyal.

Amidst lockdowns, online education saw relatively low participation rates. The rates were even lower for children living in rural areas. Furthermore, for the children who did have access to online education, their learning outcomes were not up to the standard. For example, with the ‘Ghar Pe School’ program, 50% of students were only learning 50% of the educational content as intended. Therefore, the divide is not just in terms of access but also the effectiveness of using technology to deliver education. Therefore, any solutions directed at bridging this gap need to look at challenges from both these perspectives.

### 6.4.2 Hesitation with online education

In online learning, the role of parents becomes crucial. They must oversee the child’s education in terms of homework assignments, guide them to use the tools and technology as well as help them prepare for their exams.



“This is challenging because only 50-60% of parents respond or engage with their children’s education.”

Umesh Malhotra



However, this is challenging because parents themselves are busy managing their work and taking care of household chores and some parents do not believe online education to be effective. Adding to this, some parents do not want their children to be engaged with their phones throughout the day. So, they wait for schools to reopen, and their children to go back to school. All these reasons are justified. Therefore, making remote learning successful, requires overcoming challenges with parents as well.

### 6.4.3 Inadequate impact measures and risk profiles

To acquire funds and finance in education, there is a need to create risk profiles and track both financial and non-financial impacts. Such measures would increase the likelihood of investors funding education and would serve as proof that their investment can be safe.

However, in education, it is difficult to conduct standardized measurements of impact, because the indicators vary; from the regional context, income levels, access to resources, inequality among student population etc. On top of this, there has been a lack of effort in trying to build frameworks that track the impact of education, both online and offline. Therefore, due to these limitations, educational institutions struggle to find capital to make necessary improvements.

## 6.5 Solutions

Education is a sector that requires flexibility in terms of curriculum, delivery, context, and other socio-cultural factors. It makes finding investment and creating large-scale impact challenging. However, there were three solutions discussed during the webinar that, when scaled, can create substantial impact.

### 6.5.1 Self-sustaining schools

Developing countries often struggle to provide quality education that is affordable and easily accessible. Furthermore, the education the children do receive might not provide them with required workplace skills.

However, the self-sustaining progressive school model aims to fix this mismatch between the education students receive and the skills they need to earn a living. This type of school allows students to get a standard education while learning practical and entrepreneurial skills. This functions by getting hands-on work experience in running some of the school's administrative operations. By learning to run competitive enterprises -- from production to marketing to record-keeping -- students acquire useful and marketable skills. At the same time, the school ensures that this education is affordable for the poor by keeping the administrative operational cost to a minimum using the help of the students.



### 6.5.2 Developing KPIs

One of the solutions to increase investment into traditional education is to create a portfolio of schools with similar risk profiles. This will help investors minimise risks by distributing risk among schools with the same risk profile. These portfolios can include standardized metrics and key performance indicators (KPIs) to measure the social, economic, and environmental impact of these schools. Quantifying impact can help adjust for risks, allow better access to funds, create accountability, and measure progress.

### 6.5.3 Innovative finance mechanisms

Finally, the transition to a new education system requires financing mechanisms that consider the need for long-term investments. This is because in education, creating a sustainable impact and getting a return on investment takes time. However, these investments are inherently low-risk, future proof and have a higher chance of success.

Financing tools that can facilitate this transformation include social impact bonds, microfinance, blended finance, etc. These mechanisms have made achieving quality, affordable and equal access to education more achievable.

## 6.6 Gaps

The discussion with Vandana, Umesh, Harish, and Mahesh, along with Satyadeep was geared towards building a new education system with the help of sustainable finance. However, there were a couple of gaps that were not addressed during the webinar. For example, changes in the education system can have an impact on other aspects such as gender issues, policy, innovation, ethics, family dynamics, etc. Two such examples include:

**1. Child marriages** – Research shows that an additional 13 million child marriages could be taking place due to school closures, which otherwise would not have occurred between 2020 and 2030. How do we mitigate such practices if online education is here to stay?

**2. School meals** – 368.5 million children across 143 countries depend on school meals as a reliable source of daily nutrition. A complete transformation of the education system needs to consider such social issues as well.



## 6.7 Highlights



### Opportunities

- 1. Transitioning to remote learning** – In the face of nationwide lockdowns, several groups and communities developed different, low-cost, and accessible ways to deliver online education.
- 2. Transforming the education system** – The increased attention and investment that the EdTech sector has enjoyed over the past few years has created an opportunity for traditional education in the form of blended learning: A hybrid model of offline and online education.

### Challenges

- 1. Technological divide** – In India, 70-80% of schoolchildren do not have access to the technology required to continue with their education. 50% of students were only learning 50% of the educational content as intended.
- 2. Hesitation with online learning** – In remote learning, the role of parents becomes important. This is challenging because only 50-60% of parents respond or engage with their children's education.
- 3. Inadequate impact measures and risks** – To acquire financing in education, a major challenge faced by many educational institutions is measuring their impact and outcomes.

### Solutions

- 1. Self-sustaining schools** – A self-sustaining school allows students to get standard education while learning practical and entrepreneurial skills.
- 2. Developing KPIs** – Quantifying impact can help adjust for risks, get better access to funds, create accountability, and measure progress.
- 3. Innovative finance mechanisms** – The transition to a new education system requires financing mechanisms that recognise the need for long-term investments. This is because in education, creating a sustainable impact and getting a return on investment takes time.





## 7. Sustainable Finance and Healthcare

### 7.1 Introduction



In the last decade, global healthcare systems have enjoyed the benefits of strong economic growth and investment. However, despite an increase in healthcare innovation and technology, lack of access to healthcare caused by high costs has continued to rise.

Additionally, COVID-19 has further widened gaps in terms of access and quality in our current healthcare systems. Due to these growing challenges and inadequate distribution of healthcare access, between 70 and 100 million people could slide into extreme poverty in 2020. On top of this, 2 million preventable deaths could occur because of the health disruption caused by the pandemic.

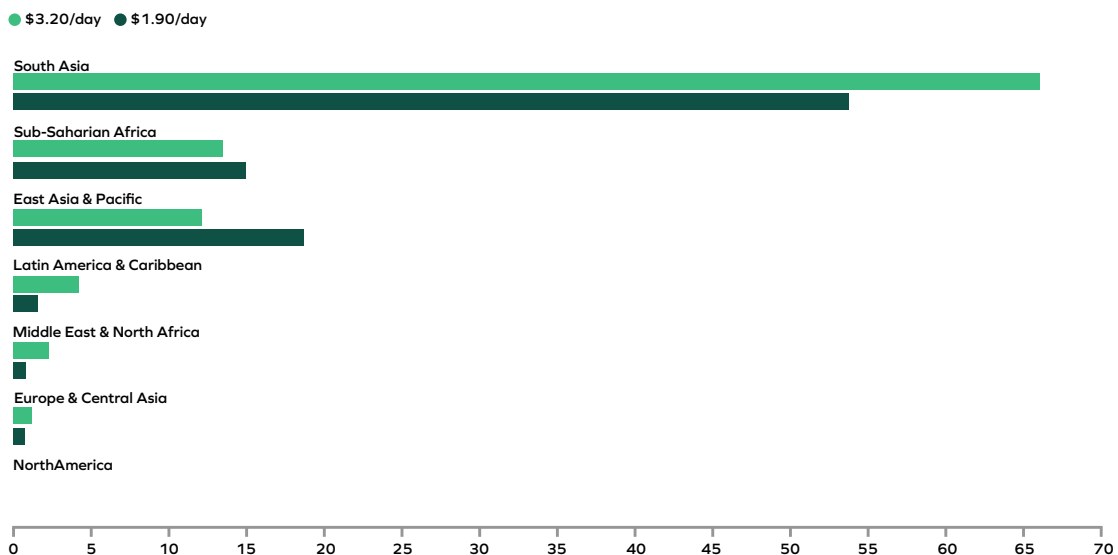


Figure 6. Number of people pushed into poverty due to health spending, by poverty line.  
Source: SDG Atlas, 2020. World Health Organization and World Bank, 2019. Global Monitoring Report on Financial Protection in Health, 2019.

To address these challenges, we require sustainable finance to bridge the gap in accessibility and affordability of healthcare. To discuss the opportunity of sustainable finance in healthcare, Satyadeep Rajan (President of SLX) moderated the webinar with Shravan Subramanyam (President and CEO of GE Healthcare India and South Asia and Managing Director of Wipro GE Healthcare at GE Healthcare), Siraj Dhanani (Founder at InnAccel) and Gulshan Yadav (National Sales Head - Healthcare Finance for Clix Capital).

## 7.2 Global Context

In developing countries, healthcare financing happens through a mix of public finance, out-of-pocket expenditures, private spending through insurance and external aid. As healthcare costs continue to rise, not everyone can afford health insurance or has enough capital in hand to cover their health expenditures. 12% of the world's population still spends at least 10% of their household budget on healthcare. This is pushing 100 million people into extreme poverty. These are people who earn less than \$1.90 per day and are forced to pay for healthcare out of their own pockets. Due to this disparity in wealth, access to quality healthcare has been and continues to be unequal.

Even with such great disparity in healthcare, there have been massive improvements in average life expectancy; increasing from 40 to 70 years. Moreover, improved sanitation has saved 70-80% of lives in the last 70-80 years.



The real major impact in bringing these changes has been through public health.

Shravan Subramanyam



This means that investing in public health can ensure that a larger section of the population remains healthy.



## 7.3 Opportunities

Our current healthcare systems need to overcome the barriers of accessibility, availability, and affordability. To achieve this, four opportunities were identified by our speakers.

### 7.3.1 Right interventions

All three speakers emphasized the importance of technological interventions in reducing healthcare costs.



With the right tech intervention, cost per lives saved in India can be only as much as 10,000 rupees

Siraj Dhanani



To make technological interventions effective, they must align with the needs of the community. This means that they should factor in things such as affordability, availability of electricity, presence of a certain type of diseases, availability of internet, diagnostic capabilities, the ratio of doctors and nurses to patients, etc. An intervention will only be effective if it is aligned with the needs and circumstances of the region.

### 7.3.2 Public health

The World Bank reports that 50% of the economic growth differentials between developing and developed nations are attributed to poor health and low life expectancy.

A breakthrough in healthcare starts with greater investment into public health. It refers to improving the health of people and their communities by actively promoting healthy lifestyles and detecting, preventing, and responding to infectious diseases. Good public health is achieved by implementing educational programs, adopting the correct health policies, administering services, and conducting healthcare research.

An increase in public health might require sustainable finance in order to meet the needs of the community. If we continue to make smart investments in this sector, the chances of everyone having access to quality healthcare can soon become a reality, which will improve the overall economic strength of the country.

### 7.3.3 Precision medicine

Another rapidly developing opportunity is the field of precision medicine. This approach for disease treatment and prevention accounts for individual variability in genes, environment, and lifestyle of each person. This approach will allow doctors and researchers to predict required treatments more accurately.

Such methods are predicted to reduce costs on diagnostics and experimental treatments, thereby making healthcare more accessible and affordable. This way, people will be more likely to consult doctors and get the correct treatment.

### 7.3.4 Culture of innovation

Healthcare is a constantly evolving sector. From a business perspective, it is one of the most lucrative fields for innovation. In a country like India, innovation in healthcare can make it more accessible and affordable. Take the example of Aravind Eye Care in India. Its centres provide free services to 70% of its patients, The costs are covered by charging wealthier individuals for its services.

Another example of an innovation is cited by Siraj. His organisation InnAccel developed a portable, low-cost neonatal breathing device for premature babies. It helped prevent many premature deaths and reduced the cost of any potential future healthcare expenditure by using this technology intervention. This was devised while keeping the small towns of India in mind, where infrastructure can be poor and electricity supply is erratic.

## 7.4 Challenges

To take advantage of many of these opportunities in healthcare, we need to overcome some key challenges. Our speakers discussed three challenges in healthcare that are currently prevalent.

### 7.4.1 Last-mile health coverage

A major challenge in ensuring healthcare for all, is ensuring everyone has access to healthcare infrastructure, medicine, diagnostic tools, and medical staff. However, sometimes even access to basic primary healthcare is difficult in some regions. For example, while India has a booming private medical sector, the public healthcare system operates at a ratio of 0.08 doctors per 1000 people. The states with the highest shortfall of doctors – Uttar Pradesh, Chhattisgarh, Odisha, and Madhya Pradesh – have a combined rural population of 800 million.

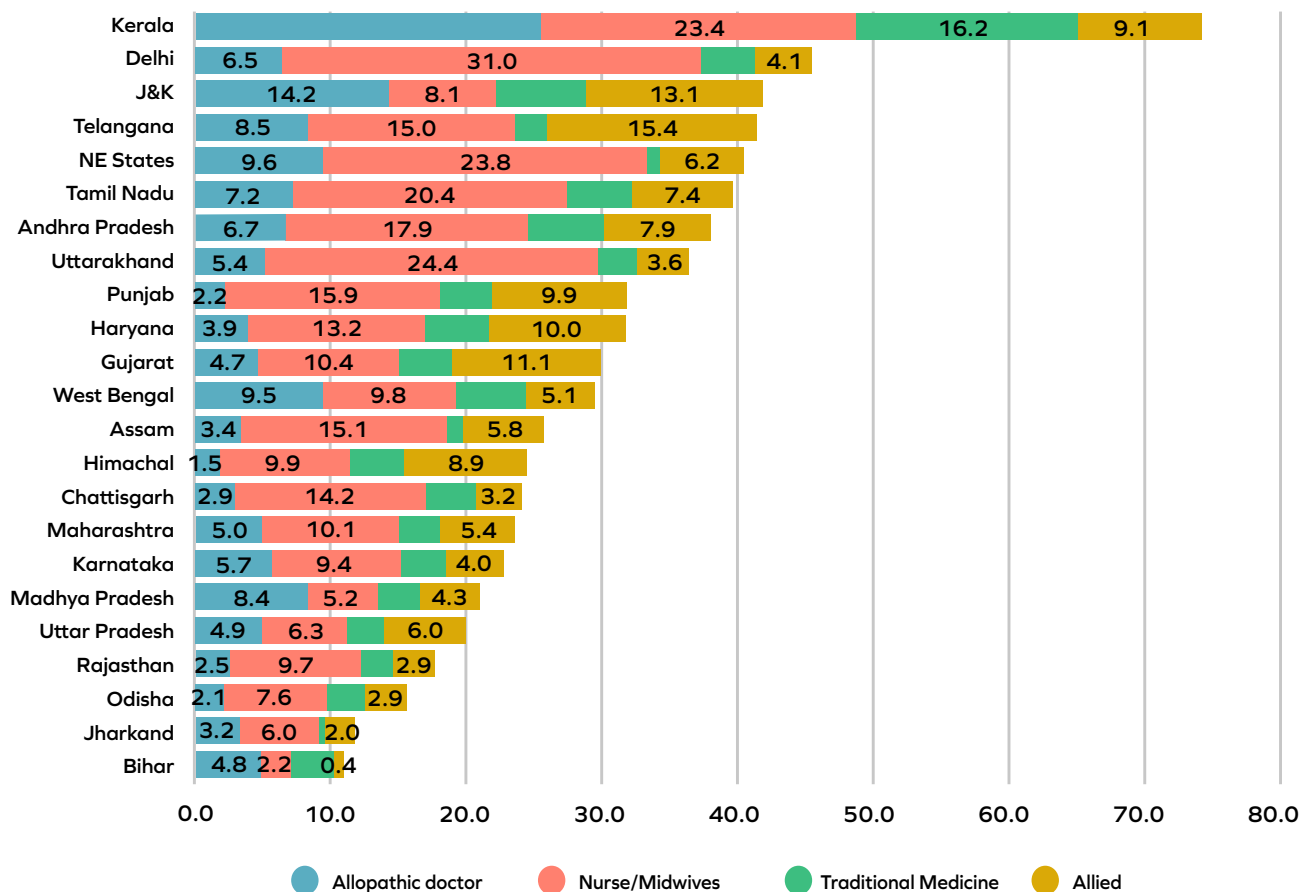


Figure 7. Density of health workers/professionals in states 2018. Source: Karan, et al., 2021. Size, composition and distribution of health workforce in India: why, and where to invest?



It is not enough to develop private healthcare facilities. Public healthcare facilities also need to be developed in remote and rural areas. This is one of the biggest challenges in ensuring equitable access to healthcare.

### 7.4.2 Sub-optimal healthcare decisions

In many cases, it is not just the people living in remote areas who are unable to access healthcare. Many people living in metropolitan cities sometimes refuse to seek needed medical attention. The unwillingness to utilise health services is often due to a lack of adequate funds. As we have discussed before, one healthcare incident can push a family into poverty.

In such cases, illnesses that could have been easily prevented, cause unnecessary suffering, and in some cases, even death. Therefore, we must make healthcare affordable so that everyone who needs it does not hesitate to go to a hospital and get a consultation. A big part of making healthcare affordable is to sustainably finance the sector, such that health insurance is affordable to marginalised communities and as few people as possible need to rely on out-of-pocket healthcare expenditure.

### 7.4.3 Aligned interventions

Interventions in healthcare must align with the needs of the community. This means bridging the gaps in the current healthcare system by accounting for gender, education, access, affordability, and quality. For instance, promoting contraceptives in a region where there is an increase in unplanned pregnancies and sexually transmitted diseases should not be the only step. To address these issues, there is a need for intervention through campaigns and awareness around safe sex practices as well.

Aligned interventions also need to work across different healthcare sectors, such as private hospitals, small diagnostic centres, and health clinics. Healthcare facilities vary from region to region and not every centre is equipped to run sophisticated machines. Hence, any intervention should keep in mind the different contexts and healthcare requirements of a region.

## 7.5 Solutions

Healthcare is a fundamental right, and we need to ensure everyone has access to it. As it stands, traditional financing systems are unable to bridge the gap in healthcare accessibility. Therefore, the speakers identified two sustainable finance solutions that could overcome the limitations of traditional finance.

### 7.5.1 Innovative finance models



Financing in healthcare can't come from the conventional loan-based models. Access to capital has to come through innovative models.

Gulshan Yadav



An example of this is the Public-Private Partnership (PPP) model. For example, Clix Capital partnered with a local government on a mini healthcare project. They installed 27 CT scan machines in clinics located in small towns in India. Since this was not previously available, it was a substantial improvement in ensuring equitable healthcare in rural areas. After the machines were installed, 50 scans were recorded each day, indicating that there was a high demand.

Such innovations were possible only due to financial support. This applies not just to technology, but also to creating awareness about diseases and promoting good health practices. It is important to use healthcare finance to facilitate the prevention and early detection of diseases. Not only does this bring down the mortality rate, but it also drastically reduces the cost of overall healthcare expenditure.

Another way to finance healthcare is through micro-financing. It allows the building capacities at the community level by training healthcare workers and thus promoting quality of healthcare services.

### 7.5.2 Grants and funds

Any innovation that seeks to bridge the accessibility gap in healthcare is important. To achieve this there are several public grants available to individuals and companies. They can use these grants to develop innovative, novel systems, models, and technology that can enhance healthcare for all.

Siraj Dhanani referred to the Department of Biotechnology, which offers the DBT-BIRAC Biotechnology Ignition Grant (BIG). The grant offers up to Rs 50 lakhs to innovators and entrepreneurs to develop their ideas into prototypes. Besides BIG, there are several other grant programs for further stages of healthcare product development. Companies can use such financing mechanisms to develop innovations in the healthcare sector.



## 7.6 Highlights



### Opportunities

- 1. Right interventions** – Technological interventions are crucial in reducing healthcare costs. With the right tech intervention, cost per lives saved in India can be as low as 10,000 rupees.
- 2. Public health** – If we continue to make smart investments in public the healthcare sector, the promise of everyone having access to quality healthcare can soon become a reality, which will improve the overall economic strength of the country.
- 3. Precision medicine** – Such methods are predicted to reduce costs of diagnostics and experimental treatments, thereby making healthcare more accessible and affordable.
- 4. Culture of innovation** – In a country like India, innovation in healthcare can make it more accessible and affordable. Take the example of Aravind Eye Care in India. Its centres provide free services to 70% of its patients. The costs are covered by charging wealthier individuals for its services.

### Challenges

- 1. Last-mile health coverage** – It is not enough to develop private healthcare facilities. Public healthcare facilities need to be developed in remote and rural areas. This is one of the biggest challenges in ensuring equitable access to healthcare.
- 2. Privacy and digital identity** – The unwillingness to utilise health services is often due to a lack of adequate funds. One healthcare incident can push a family into poverty.
- 3. Aligned interventions** – Interventions in healthcare must align with the needs of the community. This means bridging the gaps in the current healthcare system by accounting for gender, education, access, affordability, and quality.

### Solutions

- 1. Innovative financing models** – Using financing models such as PPP, microfinance, and guarantee schemes can generate greater capital flow in the healthcare sector.
- 2. Grants and funds** – Any innovation that seeks to bridge the accessibility gap in healthcare is important. To achieve this there are several public grants available to individuals and companies. They can use these to develop innovative and novel systems, models, and technologies that can enhance healthcare for all.





## 8. Sustainable Finance and Environment

### 8.1 Introduction



25% of the world's species are currently at risk of going extinct and we are losing species 1,000 times faster than at any other time in human history. Our environment provides us with an estimated 125 – 145 trillion USD worth of ecosystem services annually. If we lose our environment, we will lose the most basic and precious ecosystem services (e.g., food, water, flood protection, etc.).

To protect our environment and its ecosystem services, we need an estimated 722–967 billion USD per year by 2030. However, we are currently only investing 124-143 billion USD per year in environmental protection, which is a financial gap of 85%. How can sustainable finance help bridge this gap and prevent further destruction of the environment?

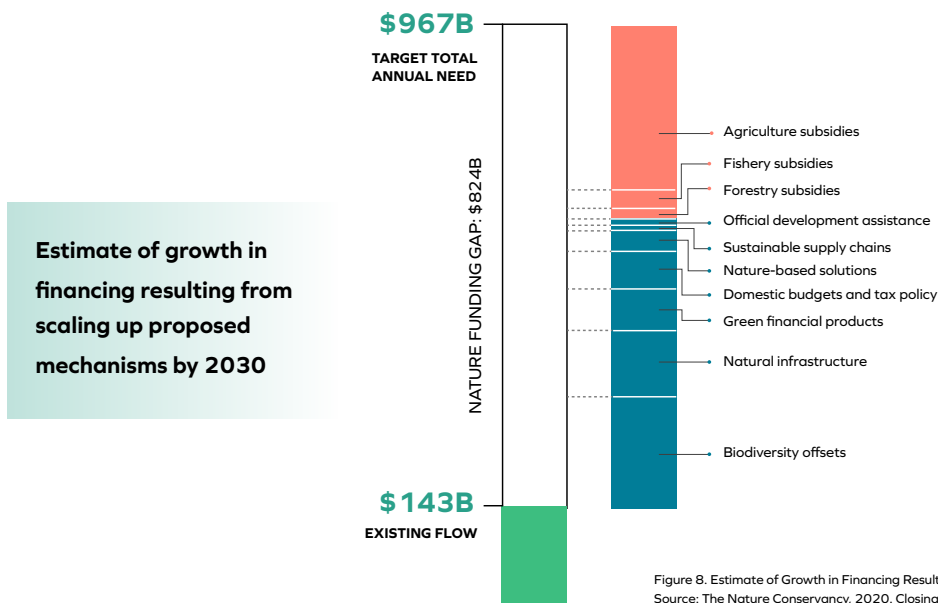


Figure 8. Estimate of Growth in Financing Resulting from Scaling Up Proposed Mechanisms by 2030. Source: The Nature Conservancy, 2020. Closing the Nature Funding Gap: A Finance Plan for the Planet.

Satyadeep Rajan (President of SLX) moderated the webinar with speakers Bernd Jan Sikken (Head of Strategy for de Volksbank), Preeti Sinha (Executive Secretary for the United Nations Capital Development Fund), and Nitin Pandit (Director of Ashoka Trust for Research in Ecology and the Environment) to find solutions that can help build back the environment using sustainable finance.

## 8.2 Global Context

Due to the alarming destruction of the environment, ecosystem services and biodiversity are heading towards irreversible decline. So, why should we worry about this?

As an example, Bangladesh is a country that is naturally prone to floods due to its location next to the Ganges-Brahmaputra River delta system. Bangladesh's Sundarbans mangrove forest acts as a natural flood defence system. However, due to illegal deforestation and human encroachment in these mangrove forests, the ecosystem has become vulnerable. It is no longer able to provide its service of flood defence. This has resulted in floods destroying many settlements along the coast of Bangladesh. Not only does this displace the coastal population, but it drastically reduces the land available for agriculture.

By destroying the mangrove forests, Bangladesh has made itself more prone to floods and climate change related damage, which is now impacting its society and economy. It is easy to think of this as an isolated incident, however, this is happening all over the world. Since the world is very much interconnected and interdependent, we all will eventually be impacted by environmental destruction.

Therefore, we need to start curbing the negative impact on our environment and change our perspective towards nature and the role it plays in our society. For instance, Nitin Pandit spoke about using Gross Domestic Product (GDP) as a measure for a country's progress. However, GDP does not consider the contribution of nature and what it provides to our economy and well-being. He cited a 2012 report titled: "Diagnostic Assessment of Select Environmental Challenges in India" which revealed that the cost of environmental degradation in India amounted to about Rs. 3.75 trillion (80 billion USD). That is equivalent to 5.7% of GDP.



Governments or public finances should not solely look at GDP to determine growth or progress. This is because GDP fails to consider the impact of environmental degradation

Nitin Pandit



## 8.3 Opportunities

Valuing nature is the first step to saving it. Integrating natural assets with sustainable finance can potentially help us build that kind of solution. The speakers suggested three opportunities presented by this.

### 8.3.1 Behaviour change

Our everyday behaviour, choices, and decisions, no matter how big or small, have an impact on the future of our planet. As more people become aware of how their actions impact our environment, more people are likely to adopt sustainable and conscious practices.

Businesses can take advantage of this growing consciousness by producing sustainable products that meet the demands of the people. To achieve this, a new business model may not be enough. To transition to the growing sustainable market, businesses need additional capital and new financing mechanisms that focus on creating positive environmental impact.

This is where sustainable finance can step in. Insurance companies and pension funds can help scale up green investments. These funds prioritise making medium- to long-term investments, unlike bank deposits. Many people who invest in pension funds schemes are not looking for a financial return for at least a few decades. In the case of investment companies, they alone manage over \$100 trillion in assets in just the OECD countries. The more investment is poured into sustainable products, the quicker we can identify ways to make them affordable. The more affordable they become; the more customers can access them. This will have a cascading effect and encourage more people to adopt sustainable products and services.

“New mechanisms of financing will change the behaviour of public, private and customers for the better.” - Nitin Pandit.

#### Most prominent lifestyle changes

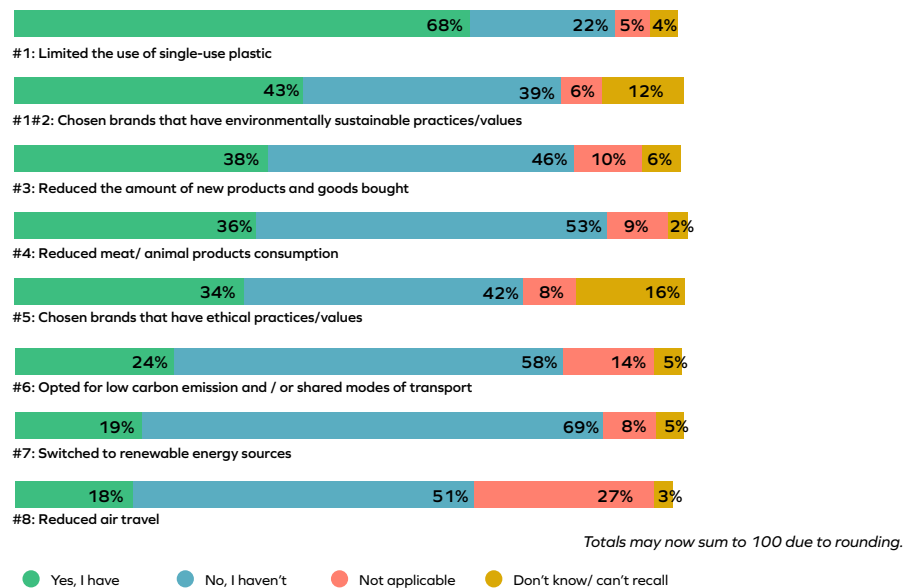


Figure 9. Most Prominent Lifestyle Changes.  
Source: Deloitte, n.d. Shifting sands: How consumer behaviour is embracing sustainability.

#### Barriers to change

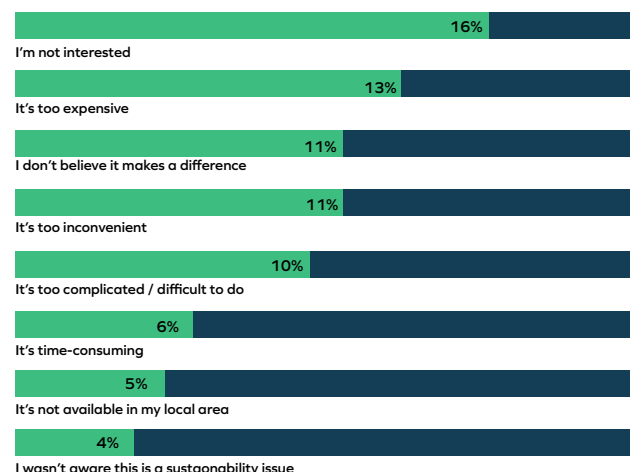


Figure 10. Barriers to change.  
Source: Deloitte, n.d. Shifting sands: How consumer behaviour is embracing sustainability.

### 8.3.2 Rebuilding environment

Our rapid economic development over the past century has led to large scale environmental destruction. If we are to stop climate catastrophe, we need to rebuild our environment. To achieve this, we need green growth. We need sustainable finance to invest in projects that promote sustainable development.

Preeti Sinha spoke about projects that she has been involved in, which are funded by sustainable finance. For example, the 'Green Climate Fund' (GCF) was created to support the efforts of developing countries in responding to climate change. In Africa, the fund has aided in developing the local infrastructure to be more climate resilient.

Another project discussed by Preeti is the 'Global Coral Reef Fund.' This fund is used to support businesses that are looking to improve the health and sustainability of coral reefs and associated ecosystems. The fund requires businesses to empower local communities located adjacent to these coral reefs.

### 8.3.3 Leveraging banks

While the traditional banking system is still the go-to option for many, alternative sustainable banks have started becoming more popular. This happened during the 1960s when people started criticising multinational banks for investing in companies that supported the Vietnam war, the South-African Apartheid regime, and the destruction of the environment. This led to the resurgence of credit unions, ethical and cooperative banks.

These are banks that have ethical, social, sustainable, and/or environmental goals as part of their core values and business strategies. It includes ethical investment, impact investment, socially responsible investment, ethical consumerism, and social enterprise. They can do so by charging a minimal interest rate to socially/environmentally responsible companies and higher interest to companies who do not conform to these sustainable standards. As more people switch to these types of banks, traditional banks will need to adopt sustainable finance and encourage environmental protection.

## 8.4 Challenges

Three financial, economic, and industry-related challenges regarding environmental protection were identified by the speakers.

### 8.4.1 Short-term drawbacks

Sustainable finance can generate a good return on investment alongside creating a positive environmental impact. However, the difference is that, unlike conventional investments, the benefits of sustainable investments can only be seen in the long term.

Many green infrastructure projects only pay off in the long term. However, the financial system is dominated by short to medium-term investments, resulting in a maturity mismatch. This is much more common in banks because much of the banks' resources come from deposits, and deposits are usually used for short to medium-term investments. This is because most people who deposit money in banks want their money back within one to five years.



## 8.4.2 Conventional market forces

As we looked at before, GDP does not consider ecosystem services nor the cost of environmental destruction.

For example, in certain parts of the world, people remove patches of mangrove forest along the coastline to make space for shrimp farms. Shrimp farms are economically lucrative and thus provide an immediate economic and social incentive to the local community. However, we know mangrove forests act as a natural flood defence system. But this ecosystem service of flood defence is not considered when the mangrove forests are destroyed.

What this means is that our conventional market forces encourage people to destroy their environment to make a profit. However, when flooding becomes more common due to climate change, the lack of the mangrove forests can result in spending millions of dollars to erect man-made flood defences instead. Only when conventional market forces consider the direct and indirect services provided by the environment will we be able to build back our environment.

## 8.4.3 Greenwashing

The growing consciousness among consumers regarding the environment has resulted in a greater number of companies transitioning into sustainable products and services. There are several sustainability tools such as green labels, sustainability reporting, or CSR activities that can help customers buy from sustainable companies.

However, there is a lack of standardisation and accountability with these sustainability tools. So, to gain brand value, some companies continue to keep doing what they were doing anyway, just with a sustainability tag slapped on it. This can go as far as Tobacco companies claiming to somehow advance SDG 3: Good Health and Well-Being; and Oil companies announcing that they will focus on SDG 7: Affordable and Clean Energy, all without making any changes to their core business model.

What these companies are doing is referred to as Greenwashing. It is a form of marketing spin in which green and sustainable values are deceptively used to persuade the public that an organization's products, aims, and policies are environmentally friendly and sustainable.

Today "sustainably curated" "recycled" "vegan" "cruelty-free" are some of the few terms a lot of consumers have started to consider while buying products. However, some companies' products do not meet the standards required to add those terms to their products. This green marketing tactic has been used loosely to claim false certifications and brand value to generate profit.

## 8.5 Solutions

Today, we are equipped with tools, technology, and information to overcome these challenges and safeguard our environment. However, to do this, we need sustainable finance. The speakers identified two ways to leverage sustainable finance and increase financial flows to regenerate our environment.





### 8.5.1 Measure impact

There is a growing demand from governments, investors, customers, and civil society to measure environmental impact. However, it is not enough to simply measure environmental impact; it needs to be integrated with the businesses' vision. To do so, the business needs to align its environmental and social goals with all its projects, products, and services.

Moreover, for businesses, environmental impact measurement can help them identify new sustainable opportunities to invest in. A report published by the Business & Sustainable Development Commission revealed that investing in sustainability offered at least a \$ 12 trillion opportunity to companies. There's also money to be saved: For example, a factory replaces their lighting with energy-efficient lighting to become more sustainable. Not only have they reduced their energy bills, but they have also reduced your overall carbon footprint. They help mitigate the effects of climate change and ensure their business avoids future social, environmental, and economic risks. Finally, being sustainable increases companies' brand value and improves employee retention. Consumers are increasingly demanding that their products and services be produced sustainably.

### 8.5.2 Provide incentives

Even with the progress towards climate change mitigation and environmental protection that has been made, the fossil fuel industry continues to get 12x more subsidies than the green and renewable energy sector. On top of this, out of the US\$ 124-143 billion spent to conserve the global environment, 80% of these funds comes from the public sector and only 20% from the private sector. This is not enough. We need more green investment and a more equal mix of public and private finance.

To achieve this, we need policies that use financial levers to incentivise businesses to be more sustainable. For example, this can be done via tax cuts for using renewable energy, providing subsidies to install solar panels, and giving tax returns for companies that actively invest to protect the environment.

Also, central banks and governments can work together to develop reliable green financial policy frameworks. These frameworks can focus on supplying incentives to financial institutions to invest in green projects. Central banks have regulatory oversight over money, credit, and the financial system. This helps them easily understand the risks associated with different green investment models and projects. Central banks can use this information to support the government and develop a green financial policy framework that is suitable for their city or country.

## 8.6 Gaps

In the webinar discussion with Nitin Pandit, Preeti Sinha, and Bernd Jan Sikken there was a gap that never was discussed. It was the role of governments. Governments play a pivotal role in incentivising private companies to invest in protecting the environment through policies, subsidies, grants, concessional loans, and risk mitigation mechanisms, including insurance and government guarantees. How can governments achieve this and help businesses become more sustainable?



## 8.7 Highlights



### Opportunities

- 1. Behaviour change** – Our everyday behaviour, choices, and decisions, no matter how big or small, have an impact on the future of our planet. As more people become aware of how their actions impact the environment, more people are likely to adopt sustainable practices.
- 2. Rebuilding environment** – If we are to stop climate catastrophe, we need to rebuild our environment. To achieve this, we need green growth. We need sustainable finance to invest in projects that promote sustainable development.
- 3. Leveraging banks** – While the traditional banking system is still the go-to option for many, alternative sustainable banks have started becoming more popular. These are banks have ethical, social, sustainable, and/or environmental goals as part of their core values and business strategies.

### Challenges

- 1. Short-term drawbacks** – Many sustainable projects only pay off in the long term. However, the financial system is dominated by short to medium-term investments, resulting in a maturity mismatch.
- 2. Market forces** – GDP does not consider ecosystem services nor the cost of environmental destruction. This means that our conventional market forces incentivise the destruction of the environment to make a profit.
- 3. Greenwashing** – There is a lack of standardisation and accountability with many sustainability tools and their impact measurement. To gain brand value, some companies continue to keep doing what they were doing anyway, just with a sustainability tag slapped on it.

### Solutions

- 1. Measure impact** – Impact measurement can help create systemic, sustainable change while driving value creation for organizations, banks, and investors.
- 2. Provide incentives** – Intelligently designed incentives and regulatory frameworks can accelerate change and induce behaviours for a transition to a sustainable society.





## 9. Sustainable Finance and Energy

### 9.1 Introduction



Globally, renewable energy is expected to overtake coal in becoming the largest source of electricity generation by 2025. It has already outpaced fossil fuel growth by a factor of 2.6 in 2019. However, in the same year, renewable energy only contributed 20% to electricity generation. A reason for this could be that between 2016 and 2020, private banks invested a total of 3.8 trillion USD in fossil fuel projects. In 2019 alone, the world's 60 largest banks financed 824 billion USD in fossil fuel. This means that 71% of total energy investment went towards fossil fuel.

Why are banks continuing to invest in fossil fuel, and how can sustainable finance help in transitioning to a future of clean green energy? To discuss the future of the energy sector and the role sustainable finance will play in it, Satyadeep Rajan (President of SLX) moderated the webinar with Stefanie Held (Chief of Section Sustainable Energy at United Nations Economic Commission for Europe) and Jay Kumar Waghela (Head of Business Development for Fourth Partner Energy Private Limited).



## 9.2 Global Context

Research estimates that the widespread adoption of renewable energy, energy efficiency technologies, and electrification of end-user products can reduce greenhouse gas emissions by 94%. This is why in recent years we have seen many governments and businesses investing in renewable energy. In the last 5 years, global renewable energy investment has increased year over year, totalling 316 billion dollars in just 2019 alone. Developing and emerging economies have invested 152 billion dollars, out-spending developed countries in renewable energy investment. If we continue to invest in renewable energy, its share in the energy sector can increase from 11% in 2019 to 63% in 2050.

However, renewable energy is still competing with fossil fuels. While global coal consumption has declined in developed countries, it has increased in developing countries. Even though developing countries invest more in renewable energy, it is still unable to meet its growing energy demands. Therefore, developing economies still depend on fossil fuel. On top of this, the global demand for coal is set to jump by 2.6% in 2021. This is because many Asian economies are going to depend on coal to re-boot their economies after the damage caused by COVID-19.

### Coal production

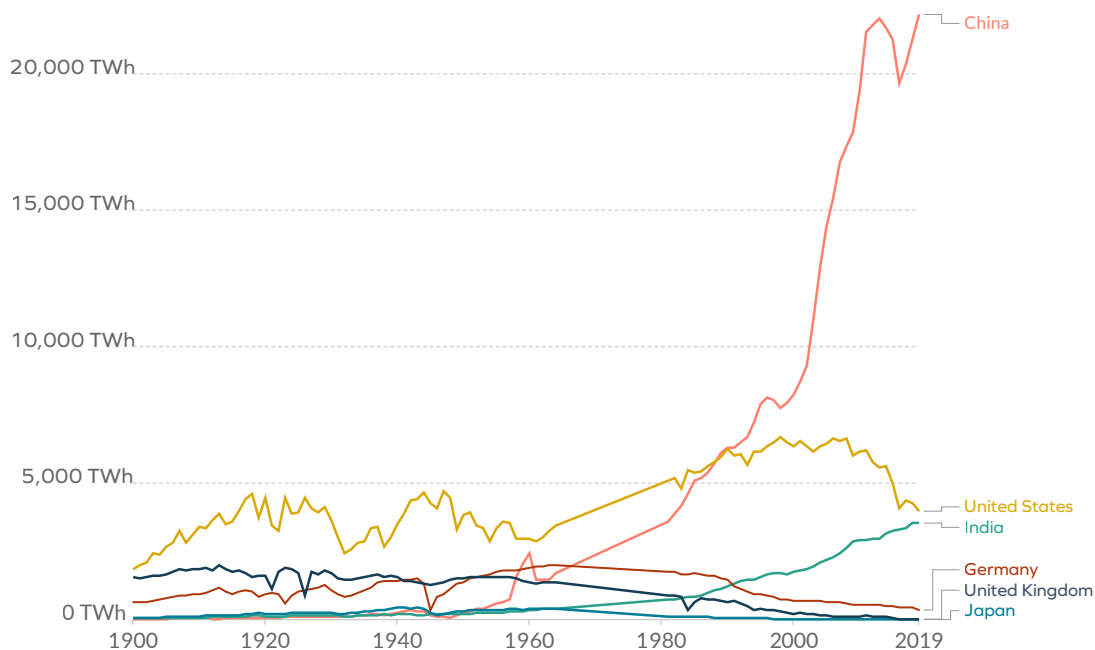


Figure 11. Coal Production.

Source: BP Statistical Review of World Energy; and Shift Data Portal, Our World in Data.

## 9.3 Opportunities

The pandemic briefly halted renewable energy investments as a lot of funds were being directed to healthcare. However, investments in clean energy picked up in the latter half of 2020. This is because post-pandemic, many governments and policymakers believe the road to economic recovery will be through the development of renewable energy.

What makes renewable energy the key to economic recovery? Renewable energy is seen as an opportunity to achieve both short-, medium-, and long-term economic goals. It can do so by creating new job opportunities, reducing greenhouse gas emissions, making communities more energy resilient and self-sufficient and overall having a positive impact on the environmental health and well-being of people.

The speakers presented three unique opportunities that can facilitate a smooth transition to renewable energy.

### 9.3.1 Carbon neutrality

While building more innovative renewable energy technology should be our focus, the speakers mentioned that we would also need to invest in carbon reduction programs. Everything we do produces carbon dioxide, from driving, to powering our homes. Therefore, we need to achieve a balance by reducing our carbon emissions via renewable energy and by removing carbon from the atmosphere. In other words, we need to achieve carbon neutrality.

Being carbon neutral means that we emit the same amount of carbon dioxide into the atmosphere that we absorb by some other means. For example, adding solar panels to our home, switching to an electric vehicle, and adopting low costs measures such as walking, cycling, using public transport reduce the amount of CO<sub>2</sub> that we emit, while planting trees increases the amount of CO<sub>2</sub> that is absorbed from the atmosphere.

### 9.3.2 Technology development

Microsoft recently announced that it aims to become carbon negative by 2030. Adding to this, the company said that by 2050, it plans to remove the carbon from the atmosphere that it has emitted since it was founded in 1975. This is a significant measure, and it will play a vital role in meeting international climate goals.

For the world to become carbon neutral, developing renewable energy is crucial in reducing future carbon emissions. However, renewable energy will not be able to achieve this on its own. It needs support from other innovative technologies such as bioenergy with carbon capture and storage (BECCS) and direct air capture, which involves the capture of CO<sub>2</sub> directly from the atmosphere. Both solutions rely on the geological storage of CO<sub>2</sub>. Large-scale carbon removal will play a significant role in reducing carbon emissions and enabling a smooth transition to renewable energy.

### 9.3.3 Energy efficiency

While renewable energy is the best end solution, energy efficiency is the best energy transition solution. Energy efficiency can reduce energy greenhouse gas emissions by 40%. It can also significantly reduce the world's energy demand, which is set to increase by 50% in 2050. This will allow us to save money and divert more of it to renewable energy.

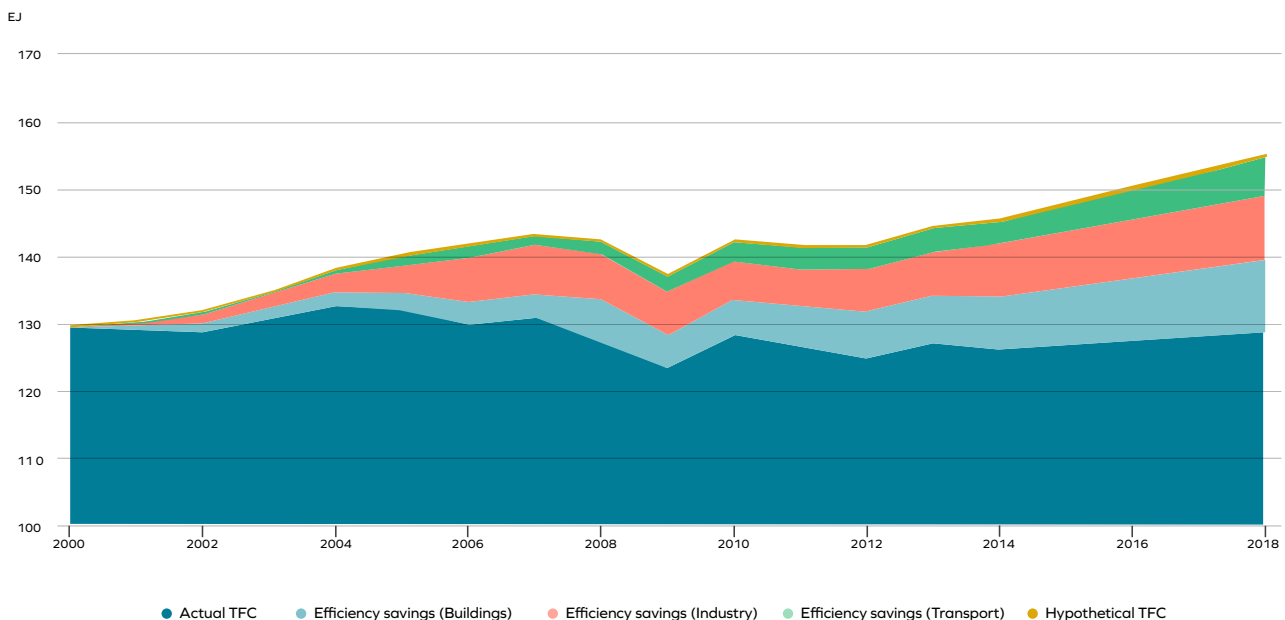


Figure 12. Estimated savings of final energy use in IEA countries. Source: IEA, 2020. Energy Efficiency Indicators.



## 9.4 Challenges

Though we have the tools, information, and technology to transition to renewable energy, there are three short- and long-term challenges that the speakers identified during the webinar.

### 9.4.1 Varied interpretation of sustainability

To meet sustainable energy goals, clean or renewable energy will need to address the following three pillars:

- Energy security.
- Energy access and affordability.
- Environmental protection

However, according to Stefanie Held, meeting the needs of three pillars of sustainable energy is challenging.



There is a perpetual tension in the sustainability framework. Meeting all three pillars of sustainable energy seems difficult. At no single point is there a consensus on which pillar is a priority. This is because there are multiple interpretations of sustainable energy which makes it difficult to achieve substantial progress.

Stefanie Held



Governments and policymakers are struggling to identify which of the three pillars of sustainable energy they need to prioritise.

### 9.4.2 Ineffective policies

Policy is a great way to encourage a renewable energy transition. Good sustainable energy policy can create a market for renewable energy via financial incentives like subsidies and tax breaks. However, many governments continue to heavily subsidise fossil fuel. As a result, even though renewables have been around for a few decades, fossil fuel still supply 84% of world energy today.

**These policies exist because governments have:**

- **Low confidence** in renewable energy because the technology is still new in their eyes, which means it poses a financial risk.
- **Lack of information** - many governments and companies are not openly sharing their environmental performance and progress, so there is limited information available on the success and failures of sustainable energy projects.
- There is no **green financial policy framework** that encourages governments to take calculated risks with renewable energy.

If adequate policies do not support the adoption of renewable energy, it will never be able to compete with fossil fuels.

### 9.4.3 Challenges in transition

A near-100% renewable-powered world is proposed as the best solution to mitigate climate change, develop economies, and provide a healthy and clean environment. However, transitioning to a renewable energy world is not as easy or clean as many people think it is.

1. **Fossil Fuel is everywhere** - The Iron & Steel Industries, the Petrochemical industry, Paper & Pulp Machinery, Food Production, Aviation, Road Transport, Shipping, etc. Most of the things we own either directly or indirectly come from fossil fuel.
2. **Emissions from coal mines** - incorrectly transitioning away from fossil fuel can lead to environmental and social issues. For example, the unsustainable closure of coal mines could release more methane gas into the atmosphere.
3. **Use of rare earth metals** - To produce renewable energy technologies, rare earth elements are being mined. Extraction and mining of rare earth metals involve similar land exploitation, environmental damage, and ecological burden as any other mining operation. They are mined using energy-intensive processes, spewing carbon emissions into the atmosphere and toxins into the ground. Moreover, many of these metals, which include mercury, barium, lead, chromium, and cadmium, are extremely damaging to several ecosystems and human health.

Due to challenges like these, we can understand why fossil fuel will continue to dominate most of our future energy industry.

*"Even in the best-case scenario of sustainable development of energy, by 2050, 56% of primary energy needs will still be met by fossil fuels." - Stefanie Held*

## 9.5 Solutions

Renewable energy indeed has a long way to go before it comes mainstream. However, the speakers identified three key solutions that could both speed up the transition and smoothen it with minimal disruptions.



### 9.5.1 Carbon Capture & Storage (CCS)

CCS is an up-and-coming technology that removes excess carbon from the atmosphere. The technology has the potential to capture more than 90% of CO<sub>2</sub> emissions which come from power plants and industrial facilities. Moreover, it can reduce global greenhouse gas emissions by 14% by 2050. It is seen as a great tool to decarbonise the industrial sector, which will buy enough time for renewable energy to become mainstream.

The US National Energy Technology Laboratory (NETL) reported that North America has enough storage capacity for more than 900 years' worth of carbon dioxide at current production rates. At present, 26 commercial-scale carbon capture projects are operating around the world with 34 more in the pipeline.

### 9.5.2 Circular economy

There is a significant gap between energy production and energy consumption. For example, to meet the 50% increase in global energy consumption by 2050, energy production will need to increase by 125-150%. This is because there is massive energy wastage and inefficiency when it comes to energy consumption and production.

One of the solutions to minimise this energy wastage is the idea of a circular economy (CE). The CE's guiding convention revolves around making, using, and then reusing or recycling products or resources. It moves away from the linear economy of take-make-dispose. CE tries to mimic nature by ensuring nothing ever goes to waste.

For instance, establishing a CE for batteries could have an enormous impact on regions that are looking to rely on decentralised mini-electricity-grids to power their homes via renewable energy. Globally, 840 million people live without access to power and many developing countries are exploring the option of mini-grids as a viable solution. A big part of these grids is the utilization of batteries to store the intermittent power generated by renewable energy. Therefore, applying these principles to batteries not only ensures the circulation of valuable and finite materials such as lithium in the economy, but also helps with the energy transition and meeting net zero-emission targets.

### 9.5.3 Energy system transformation

Moving away from fossil fuel is going to be slow and extremely complex. Many sectors heavily depend on fossil fuel for its convenience and their efficiency. If we remove fossil fuel altogether right now, we will not have access to energy and the entire world will stop functioning. Therefore, the speakers identified four areas that help the transition from fossil fuel to renewable energy with minimal disruption.

**Developing policies** – A successful policy formulation and implementation demands that the costs and benefits are equally distributed in society. For example, unequal distribution of energy and energy-related taxation can affect people's access to basic goods such as heating or electricity. An unmanaged transition could also cause changes in prices for goods, changes in income and wealth, and changes in the quantity and quality of jobs in various parts of society. Therefore, policies must be designed so that benefits and costs are distributed fairly and transparently.

Policies should first move away from subsidising fossil fuel and move those subsidies to renewable energy. While doing that, they should also encourage consumers to adopt sustainable energy practices by subsidising solar roof panels, making electric cars cheaper, etc. Finally, policies can encourage decentralised mini-grids for local communities, which will empower local people to become energy resilient and self-sufficient.



**Establishing communication technologies** – We will need a hybrid system of both traditional and renewable energy sources to meet current energy demand.

However, such systems are more complex and require sophisticated data exchange. One solution for this is building smart grids. A smart grid is an electricity network enabling a two-way flow of electricity and data with digital communications technology. It enables grids to detect, react and proact to changes in usage.

Smart grids also allow customers to become active participants through a bidirectional flow of energy and communication. It means that individual households with solar panels can sell their excess electricity back to the grid. Such grids can then evolve into decentralized energy grids. This allows for greater energy efficiency, affordability, and energy security.

**Incorporating sustainable finance** – To ensure a climate-safe future, annual investment in renewables would have to almost triple to USD 800 billion by 2050. This seems like a lot of money. However, we invested 824 billion USD in fossil fuel in 2019 alone.

*“We have the finances to transition to renewable energy. But the capital is not flowing into the right projects.” - Stefanie Held.*

One of the major reasons behind the huge investment in fossil fuel is that a quick financial return on investment is guaranteed, with minimal risk of losing any money. The demand for fossil fuel is so high, it’s extremely lucrative.

In contrast, renewable energy projects only pay off in the long term. However, the financial system is dominated by short to medium term investments, resulting in a maturity mismatch. This is much more common in banks because much of banks’ resources come from deposits, and deposits are usually used for short to medium-term investments because most people who deposit money in banks want their money back within one to five years.

However, research suggests that insurance companies and pension funds can help scale up renewable energy investments. These funds prioritize making medium- to long-term investments. Many people who invest in pension funds schemes are not looking for a return for at least a few decades.

**Measuring impact** – Another factor that is currently preventing the transition to renewable energy is the failure to account for externalities. It is a term adopted by the environmental lobby to describe the negative impacts of energy production systems. These externalities include accounting for expenditures that arise due to growing levels of air, water and land pollution, increased healthcare costs, etc.

So, while fossil fuels may currently have a cost advantage over renewables, based solely on market prices, if externalities were included, fossil fuels would become comparatively expensive while renewable energy would be the more affordable option.

To account for these externalities, we need standardized environmental impact assessment and measurement tools. This will not only encourage greater adoption of renewable energy but also incentivise investors to fund this transition.



## 9.6 Highlights



### Opportunities

- 1. Carbon neutrality** – While building more innovative renewable technology should be our focus, the speakers mentioned that we would also need to invest in carbon reduction programs.
- 2. Technology development** – Carbon removal technology such as bioenergy with carbon capture and storage (BECCS) and direct air capture will play a significant role in reducing carbon emissions and enabling a smooth transition to renewable energy.
- 3. Energy efficiency** – While renewable energy is the best end solution, energy efficiency is the best energy transition solution. Energy efficiency can reduce energy greenhouse gas emissions by 40%.

### Challenges

- 1. Varied interpretation of sustainability** – There is a perpetual tension in the sustainability framework between meeting each of the three pillars of sustainable energy. At no single point is there a consensus on which pillar is the priority. This is because there are multiple interpretations of sustainable energy which makes it difficult to achieve substantial progress.
- 2. Ineffective policies** – Policies are a great way to encourage a renewable energy transition. Good sustainable energy policy can create a market for renewable energy via financial incentives like subsidies and tax breaks. However, many governments continue to heavily subsidise fossil fuels. As a result, even though renewables have been around for a few decades now, fossil fuels still supply 84% of the world's energy today.
- 3. Negative effects of rapid transition** – A near-100% renewable-powered world is proposed as the best solution to mitigate climate change, develop economies, and provide a healthy and clean environment. However, transitioning to a renewable energy world is not as easy or clean as many people think it is.
  - a. Fossil Fuel is everywhere
  - b. Emissions from coal mines
  - c. Use of rare earth metals

### Solutions

- 1. Carbon capture storage** – CCS is an up-and-coming technology that removes excess carbon from the atmosphere. The technology has the potential to capture more than 90% of CO<sub>2</sub> emissions which come from power plants and industrial facilities. Moreover, it can reduce global greenhouse gas emissions by 14% by 2050.
- 2. Circular economy** – One of the solutions to minimise this energy wastage is the idea of a circular economy (CE). The CE's guiding convention revolves around making, using, and then reusing or recycling products or resources. It moves away from the linear economy of take-make-dispose. CE tries to mimic nature by ensuring nothing ever goes to waste.
- 3. Energy system transformation** – Moving away from fossil fuel is going to be slow and extremely complex. Many sectors heavily depend on fossil fuel for its convenience and efficiency. The speakers identified four areas that we can utilise to transition from fossil fuel to renewable energy with minimal disruption.
  - a. Developing policies
  - b. Establishing communication technologies
  - c. Incorporating sustainable finance
  - d. Measuring impact

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