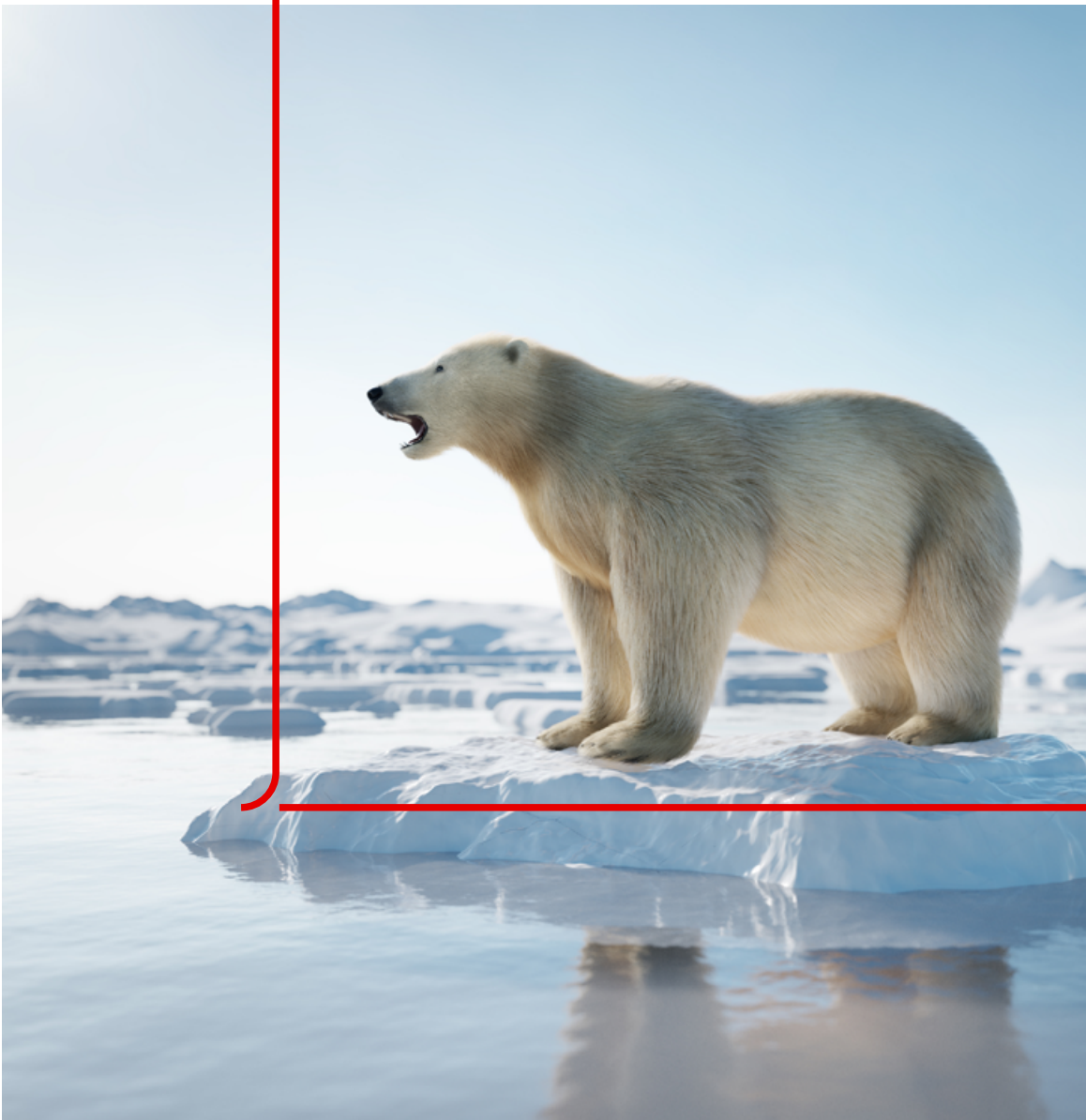


On thin ice

A guide for philanthropists and changemakers
to address climate change



Contents

How to navigate this guide

The following sections will help you decide how to get involved in addressing climate change.

Understanding the challenges:
An overview of the issues associated with climate change.

Getting started:
How to start your philanthropy journey.

Taking action:
Solutions and real-life examples, including case studies and interviews with experts and changemakers.

Looking beyond traditional philanthropy:
Ways to make a bigger impact by investing in innovative financing solutions.

Working together:
Tips on collaborating to tackle climate change.

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Words are not enough

Many words have been spoken about how the world needs to reverse years of environmental harm. But those words will mean nothing if we don't actually do it.

We stand at a crossroads. One way is a world where everyone can live happily, healthily and prosperously. The other, a planet ravaged by drought, fire, flood, famine, conflict and poverty. That's the road we're on right now: a road to spiraling global temperatures, life-threatening weather, ill-health and social unrest arising from scarce resources and migrating populations.

In 2021, the sixth report from the International Panel for Climate Change (IPCC) highlighted that climate change is already here. Today, there's even more evidence that human activity is behind extreme weather events like heatwaves, droughts and cyclones. Unless we act urgently, global temperatures will rise above the 1.5°C limit agreed at 2021's COP 26 conference. By 2100, the planet will be warmer than at any other time in human history.

But we can't let fear and pessimism paralyze us. We still have a small window of time to turn things around. And the tools to solve this crisis exist. They're not the stuff of dreams and science fiction. They're out there and doing more than any one person or technology can achieve alone.

Does that mean our individual daily efforts to combat climate change don't count? Not at all. They make a massive difference. But the world's climate challenges are too big and complex to tackle in isolation. We'll only protect the planet if everyone works together, using all the proven solutions at our disposal.

In these pages, you'll discover the insights you need to tackle climate change head on. Like you, UBS is on a journey to get the world's climate back on track – and we'd love to join you on yours.

Words? Yes. But they're words backed by action. That's something we can all get behind.

Your UBS Philanthropy Services Team



STOP
POLLUTION

There is
NO
PLANET B

SAVE
THE PLANET
FOR US

About SDG 13 – climate action

United Nations Sustainable Development Goal 13: Climate action

Take urgent action to combat climate change and its impacts, by strengthening resilience to climate-related hazards, integrating climate change measures into national policies, improving education and awareness on climate change and more.¹



Climate action and the Sustainable Development Goals

In 2015, the United Nations created 17 Sustainable Development Goals (SDGs). Each aims to create a better and more sustainable future for all by 2030.

The COVID-19 pandemic taught us that everything is connected: people, animals and our environment. When we treat our planet poorly, disaster follows. But if we do good in one area, there are positive outcomes in many others. This means that by protecting the planet from climate change, you won't just be helping achieve SDG 13 – you'll also be supporting the other important goals.

For example, reducing CO₂ emissions will help prevent natural disasters. In turn, this will improve people's health and wellbeing (SDG 3), and support sustainable economic growth (SDG 8). Equally, fighting the causes of rising temperatures will protect life on land, stop regions becoming barren and uninhabitable (SDG 15), pull people out of poverty (SDG 1) and secure food for global populations (SDG 2).

Achieving each goal needs more than good intentions. It needs money: an eye-watering 2.5 trillion US dollars of annual financing for developing countries.² But the pandemic put the brakes on finding this finance, with 90 out of 122 developing countries going into recession. More than ever, we all need to work together – individuals, philanthropists, families, changemakers, entrepreneurs and investors – on achieving every SDG.

The world is waiting. Are you ready to step up and fight climate change?

¹ Goal 13. (n.d.). United Nations; Department of Economic and Social Affairs. <https://sdgs.un.org/goals/goal13>

² OECD (2020), Global Outlook on Financing for Sustainable Development 2021: A New Way to Invest for People and Planet, OECD Publishing, Paris, <https://doi.org/10.1787/e3c30a9a-en>.

At a glance

Climate change is real

To avoid the worst outcomes of climate change, researchers say we must keep **global temperature rise below 1.5°C**.



Human activities have already **warmed the world by 1°C³** and in addition, greenhouse gases currently existing in our atmosphere, will push global temperatures to around **2.3°C above pre-industrial levels** – unless we successfully remove carbon and reverse the trend.⁴

We're all part of the problem... some more than others...

 **92%**

of excess global greenhouse gas emissions are from the "Global North" (often equated with developed countries), which accounts for **19% of the world's population**.⁵

Unless we act now, disaster is just around the corner...

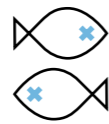
If global temperatures rise above 1.5°C, we'll be less able to adapt to climate risks. This is already the case in many places worldwide⁶



Climate change is causing more extreme weather events such as storms, floods, wildfires, and droughts.⁸ Natural disasters driven by climate change have increased fivefold over the last 50 years. In 2020, climate change made **69% of 355 extreme weather events** more likely or worse.⁹



Rising temperatures are melting the world's ice sheets and raising sea levels. In 2020, the global sea level reached a new record high – **91.3 mm (3.6 inches)** above 1993 levels.⁷



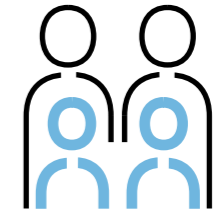
It's also making our oceans warmer, more acidic and less oxygenated – rapidly destroying biodiversity, creating "dead zones" and **wiping out sensitive habitats** like coral reefs.¹⁰

Rapid climate change doesn't give species time to adapt. A global temperature rise of 1.5°C will put **3% to 14% of species at a very high risk of extinction**.¹¹

Humanity is in crisis...

The climate crisis threatens to undo the last fifty years of work developing communities, improving health and reducing poverty – and risks widening health inequalities between and within populations.¹²

The World Health Organization (WHO) has called climate change, "the single biggest health threat facing humanity."¹³



Climate change disproportionately affects socially and economically disadvantaged and marginalized people.¹⁴ **91% of climate-related deaths** occur in the developing world, placing the costs in human life and loss of home in the hands of those who can least afford it.¹⁵

The world could lose **10% of its economic value by 2050** if average temperatures keep rising at the current rate.¹⁶

Climate change could **push 132 million people into poverty** over the next 10 years¹⁷ – and result in an estimated **20% increase in malnourished children** by 2050.¹⁸

In 2020, extreme weather-related events like storms and floods **displaced 30 million people** in their own countries.¹⁹ This figure could rise to **216 million** by 2050.²⁰



What we need to do?

To stay within the

1.5°C temperature rise limit

by 2030...



...we'll need to invest an extra **4 trillion US dollars** in clean energy projects and infrastructure – every year.

To hit the targets, emerging markets and developing economies will require **70% of this extra money**.²¹

Philanthropy can be the key to protecting the world from climate change.

However, **less than 2% of global philanthropic giving** goes to solving the issue.²²

³ IPCC 2018 Special Report 15: Global Warming of 1.5C <https://www.ipcc.ch/sr15/>

⁴ Warming already baked in will blow past climate goals, study finds 2021 Associated Press NBC News <https://www.nbcnews.com/science/environment/warming-already-baked-will-blow-climate-goals-study-finds-rcna216>

⁵ Hickel Jason (2020): Quantifying national responsibility for climate breakdown: an equality-based attribution approach for carbon dioxide emissions in excess of the planetary boundary. The Lancet Planetary Health. doi:[https://doi.org/10.1016/S2542-5196\(20\)30196-0](https://doi.org/10.1016/S2542-5196(20)30196-0)

⁶ H.-O. Pörtner et al (eds) IPCC, 2022: Summary for Policymakers In: Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press.

⁷ Climate Change: Global Sea Level | NOAA Climate.gov <https://www.climate.gov/news-features/understanding-climate/climate-change-global-sea-level>

⁸ Herring, Stephanie C.; Christidis, Nikolaos; Hoell, Andrew; Hoerling, Martin P.; Stott, Peter A. (2019): Explaining Extreme Events of 2017 from a Climate Perspective. In Bull. Amer. Meteor. Soc. 100 (1), S1-S117. DOI: 10.1175/BAMS-ExplainingExtremeEvents2017.1.

⁹ Aggarwal R et al 2021 The Climate Justice Playbook for Business: How to Centre Climate Action in Climate Justice, BCorp

¹⁰ IPCC. (2014). Climate Change 2014 Synthesis Report Summary for Policymakers

¹¹ IPCC, 2022: Summary for Policymakers [H.-O. Pörtner, D.C. Roberts, E.S. Poloczanska, K. Mintenbeck, M. Tignor, A. Alegría, M. Craig, S. Langsdorf, S. Lösche, V. Möller, A. Okem (eds.)]. In: Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Lösche, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press. In Press.

¹² Climate change and health. (2021, October 30). WHO. <https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health>

¹³ Climate change and health. (2021, October 30). WHO. <https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health>

¹⁴ IPCC (2014). Climate Change 2014: Impacts, Adaptation and Vulnerability. New York: Cambridge University Press. P. 796.

¹⁵ Weather-related disasters increase over past 50 years, causing more damage but fewer deaths. (2021, August 31). World Meteorological Association. Retrieved January 24, 2022, from <https://public.wmo.int/en/media/press-release/weather-related-disasters-increase-over-past-50-years-causing-more-damage-fewer>

¹⁶ www.swissre.com. (n.d.). The economics of climate change | Swiss Re. [online] Available at: <https://www.swissre.com/institute/research/topics-and-risk-dialogues/climate-and-natural-catastrophe-risk/expertise-publication-economics-of-climate-change.html>.

¹⁷ The World Bank (2021). Climate change overview. <https://www.worldbank.org/en/topic/climatechange/overview>

¹⁸ Aggarwal R et al 2021 The Climate Justice Playbook for Business: How to Centre Climate Action in Climate Justice, BCorp

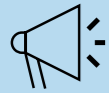
¹⁹ IDMC (2021) Internal displacement in a changing climate report.

²⁰ Clement, Viviane, Kanta Kumari Rigaud, Alex de Sherbinin, Bryan Jones, Susana Adamo, Jacob Schewe, Nian Sadiq, and Elham Shabahat. 2021. Groundswell Part 2: Acting on Internal Climate Migration. Washington, DC: The World Bank.

²¹ International Energy Agency. (2021b). Report Extract, Executive Summary, World Energy Outlook 2021. Retrieved from <https://www.iea.org/reports/world-energy-outlook-2021/executive-summary>

²² Climateworks foundation (2021). Funding Trends 2021: Climate change mitigation philanthropy

What can you do as a philanthropist?



Raise awareness

- Using science-based facts to remain credible and avoid spreading false messages.
- Financing a campaign across various formats, such as a documentary, cartoon, social media campaign or publication.



Address the energy transition

- Raising awareness on the devastating effects of air pollution, train policymakers on the benefits of low-carbon electricity, and build strong leadership.
- Focusing on developing innovations from the demand side.
- Investing in clean energy projects and infrastructure, especially in emerging markets and developing countries.



Add a climate lens to your philanthropy

- Start from the area you're passionate about – for example education – and see if through your programs you could also contribute to address climate change – for example, by adding climate education to the school curriculum.
- Reflect on how climate change affects the people you support, adapt and improve your programs to magnify your impact.



Embrace a holistic approach

- Looking to support programs that build resilience and reduce harm across the environment and society. Think climate, community AND conservation.
- Scaling-up groundbreaking technologies, while implementing nature-based solutions, as nature and human ingenuity can work wonders together.



Address climate justice

- Educate and provide skills that empower disadvantaged or uninformed communities regarding their rights
- Create partnerships that fairly represent various groups and support responsible policy making.



Support policymaking and enforcement

- Use your voting rights to put climate change at the top of governments' agendas.
- Encourage economists, researchers and policymakers to collaborate on new science-backed policies.
- Lobby regional and national governments to drastically reduce and sequester (isolate) emissions.



Promote climate education and research

- Support scientists and fund research in your area of interest to bridge the gap between research and new government policies
- Bring environmental science into school curriculums, to help children appreciate and protect nature; and educate decision-makers and policymakers.



Work with local communities

- Empower local communities to contribute to finding and developing solution to address climate change - they know best what they need.
- Stimulate grassroots community movements by directing resource toward programs that benefits both nature and the communities.
- Invest in programs that can help create resilient cities.



Use innovative investments

- Investing in blended finance solutions (investments that mix philanthropic funds with public and private sector finance) that can address climate change. Blended finance solutions attract commercial capital for sustainable projects, while potentially providing returns for investors.
- Investing in multilateral development bank (MDB) bonds that aim to conserve biodiversity and support climate resilience in ecosystems.
- Investing in sustainable investments, which aim to provide returns comparable to traditional investments, while putting money to work for good.



Shape the ecosystem that can bring solutions to scale

- Look for effective solution and prepare them for scale by replicating them or simply adding more resources.
- use your philanthropic capital to catalyze new models that have the potential to tackle climate change and biodiversity loss at scale.



Collaborate in collectives

- Increasing impact by building on existing solutions where possible – join a collective or foundation to combine funds and resources; support programs with provable scalable solutions; work with governments; and rollout proven solutions.
- Involving the community around you, raising awareness about the environmental threats and starting positive collaborations.



Christiana Figueres

Co-host of Outrage and Optimism
and former UN climate chief

Humanity faces a crucial decision. If we continue as we are, we will continue to wreak destruction on our planet and ourselves. But we can choose to make a change – to choose a path of restoration and renewal. We can manage the negative impacts of climate change, reduce the damage and adapt to the consequences. But we can only make this choice now. This decade, right here right now, is the one – we have the power, the capital, the technology, the policies we need. And we have the science to support our progress and to underline the need to halve our emissions by 2030.

01 Understanding the challenges

Before you can solve a problem, you first need to know what the problem entails.

This section provides an overview of climate change and how it connects with the other challenges facing our planet.

01.1 What is climate change?

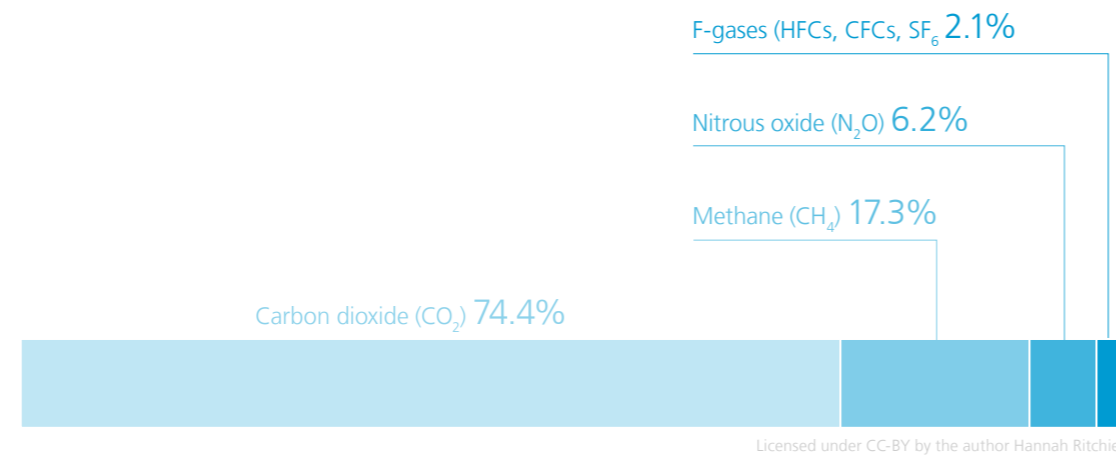
Climate change is a long-term change in the average weather patterns that define Earth's local, regional and global climates.²³ The global temperature has fluctuated over thousands of years. But the climate is now changing more significantly and rapidly than ever. Temperatures are currently the highest they have been for many years without a break. This indicates a rapid rise of around 1.02°C above average for much of 2020.²⁴

One or two degrees centigrade may not sound like much. But it's a huge difference when you're talking about heating up a planet. Raising Earth's temperature by just one degree requires a **massive** amount of heat.

Scientists have proven that human activities – such as burning fossil fuels and clearing land for agriculture and industry – are largely driving this unprecedented rise in global temperatures. Human activities contribute to the “greenhouse effect”, which involves gases like CO₂ and methane building up in the atmosphere and trapping heat.²⁵ A natural greenhouse effect is a good thing. Without it, the planet would be a frozen wasteland, unable to support life.²⁶ But it's now in overdrive, with excess gases in the atmosphere trapping more heat than ever.

Global greenhouse gas emissions by gas (2016)²⁷

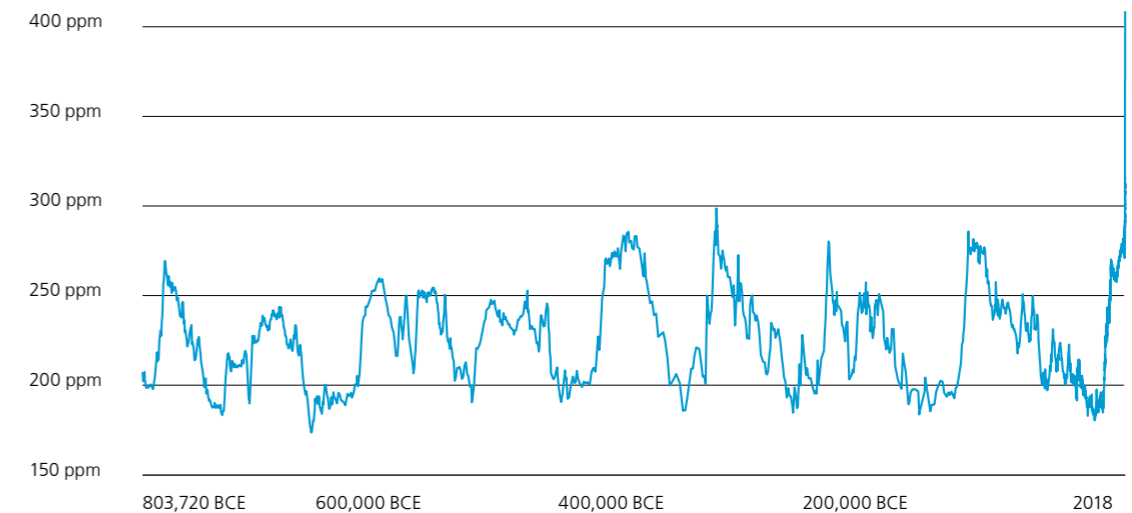
Greenhouse gas emissions are converted to a carbon dioxide equivalent (CO₂e) by multiplying each gas by its 100-year “global warming potential” value: the amount of warming one tonne of each gas would create relative to one tonne of CO₂ over a 100-year timescale. This is the breakdown of gases for 2016.



Global average concentrations of CO₂ in the atmosphere over the past 800,000 years²⁹

This chart shows global average concentrations of CO₂ in the atmosphere over the past 800,000 years measured in parts per million (ppm). CO₂ concentrations have fluctuated consistently and coincided with the onset of ice ages when CO₂ was low.²⁸ This changed dramatically during the Industrial Revolution when humans started burning fossil fuel. CO₂ emissions increased dramatically and rapidly, leaving little time for species and ecosystems to adapt.

Atmospheric carbon dioxide (CO₂) concentration is measured in parts per million (ppm). Long-term trends in CO₂ concentrations can be measured at high resolution using preserved air samples from ice cores.



Source: National Oceanic and Atmospheric Administration (NOAA)

Did you know?

In terms of consumption, the carbon footprints of the world's richest 10% are **11 times higher** than the poorest 50%.³⁰

²³ NASA. (n.d.). World of Change: Global Temperatures. Retrieved from <https://earthobservatory.nasa.gov/world-of-change/global-temperatures>

²⁴ NRDC. (2019). Greenhouse Effect 101. Retrieved from <https://www.nrdc.org/stories/greenhouse-effect-101>

²⁵ NASA. (2019). Overview: Weather, Global Warming and Climate Change. Retrieved from <https://climate.nasa.gov/resources/global-warming-vs-climate-change>

²⁶ NOAA. (2020). September 2020: Another Record-Setting Month for Global Heat. Retrieved from <https://www.climate.gov/news-features/features/september-2020-another-record-setting-month-global-heat>

²⁷ Climate Watch, the World Resources Institute (2020). Adapted from the visualization of Hannah Ritchie and Max Roser (2020) - “CO₂ and Greenhouse Gas Emissions”. Published online.

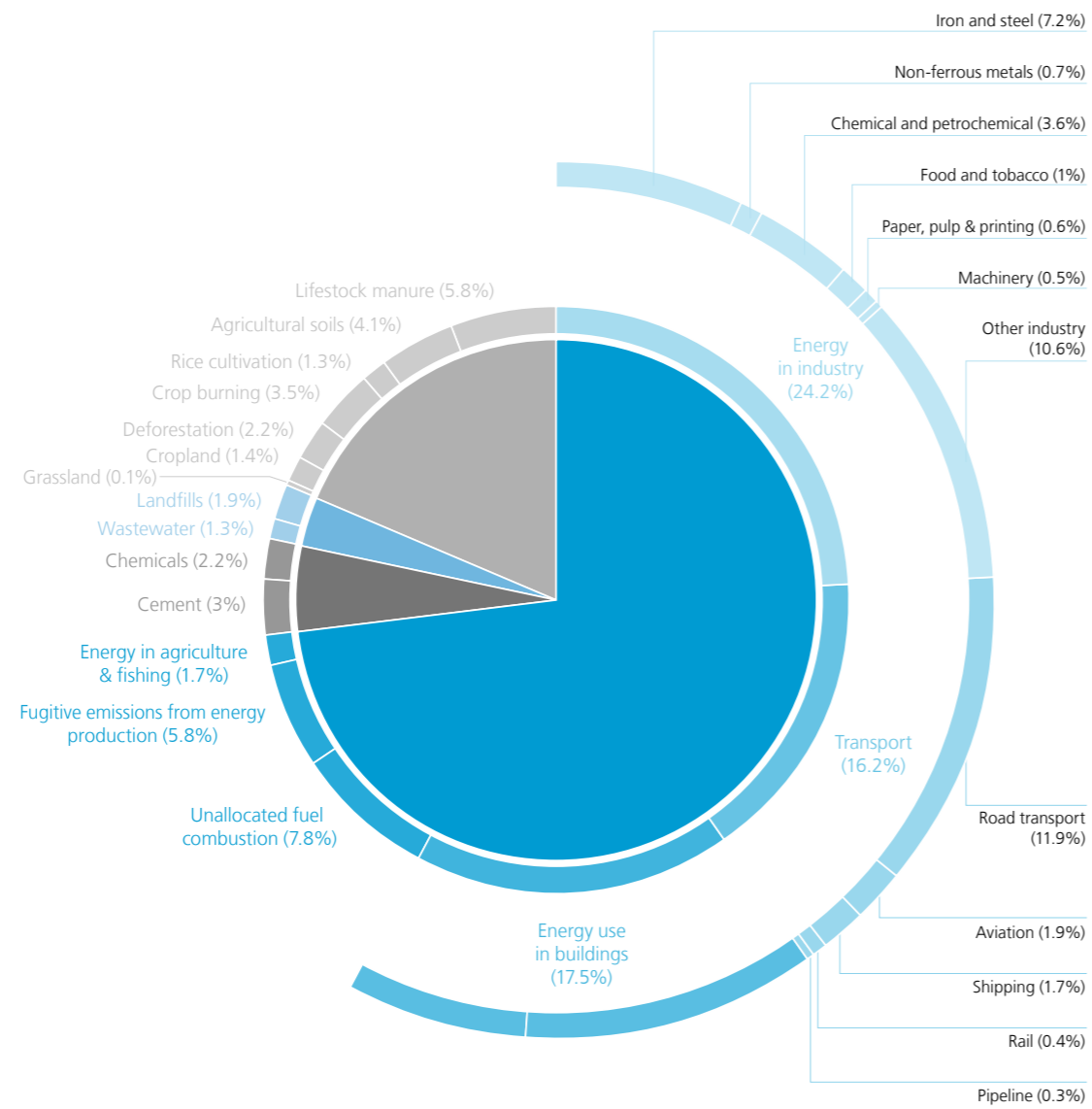
²⁸ EPICA Dome C CO₂ record (2015) and NOAA (2018) retrieved from <https://ourworldindata.org/co2-and-other-greenhouse-gas-emissions>.

²⁹ Bernhard Bereiter, Sarah Eggleston, Jochen Schmitt, Christoph Nehrbaß-Ahles, Thomas F. Stocker, Hubertus Fischer, Sepp Kipfstuhl and Jerome Chappellaz. 2015. Revision of the EPICA Dome C CO₂ record from 800 to 600kyr before present. *Geophysical Research Letters*. doi: 10.1002/2014GL061957

³⁰ Gore, Timothy (2015): Extreme Carbon Inequality. Why the Paris climate deal must put the poorest, lowest emitting and most vulnerable people first. Edited by Oxfam International. Retrieved from https://oi-files-d8-prod.s3.eu-west-2.amazonaws.com/s3fs-public/file_attachments/mb-extreme-carbon-inequality-021215-en.pdf.

Global greenhouse gas emissions by sector (2016)³¹

This is shown for the year 2016 – global greenhouse gas emissions were 49.4 billion tonnes CO₂ equivalent.



Source: Climate Watch, the World Resources Institute (2020)

Licensed under CC-BY by the author Hannah Ritchie



³¹ Climate Watch, the World Resource Institute (2020). Adapted from the visualization of Hannah Ritchie and Max Roser (2020) - "CO₂ and Greenhouse Gas Emissions". Retrieved from <https://ourworldindata.org/co2-and-other-greenhouse-gas-emissions>.



A material difference

Ginger Dosier
CEO and President, Biomason
and UBS Global Visionary 2022

What's the carbon footprint of the cement industry?

Making Portland cement accounts for 8% of global carbon dioxide emissions – that's four times more than the aviation industry. Concrete, of which cement is the key ingredient, is the second-most consumed material in the world after water. And our appetite for concrete is continuing to grow, with the global building stock expected to double by 2060.

What's Biomason's solution? How did you come up with the idea?

Biomason's approach to decarbonizing cement doesn't require traditional or Portland cement. We've developed a proprietary "biocementation" process that mimics nature's use of carbon as a building block to create strong cementitious materials.

I became an architect because I love materials in built environments. As a student, I learned how materials are made and discovered the carbon footprint of Portland cement. I thought there had to be a better way. Inspired by strong coral grown in natural marine environments, I set out to grow cement. In 2012, after running thousands of experiments, I established Biomason to develop our patented biocement® technology and revolutionize the industry.

We grow cement in ambient conditions, using carbon as a building block rather than emitting it as a byproduct. Nature has given us the blueprints for producing strong and durable cements. By emulating these blueprints, we've created a biological production system that eliminates the need to emit carbon dioxide.

How fast can the cement industry change?

We're curing the disease rather than treating the symptoms. We'll achieve our goal of reducing 25% of carbon emissions from the global concrete industry by 2030 through our licensing and development partnership strategy. The concrete market can be divided into precast concrete (15% of the market) and ready-mix concrete (85%). Biomason's product development roadmap and partners include all applications in the concrete market and value chain.

Top tip

Don't wait around. Collaborate on projects that tackle specific issues with credible plans on solving them. To change for good, the world needs every ounce of energy you can give – right now.

Climate change is an interconnected issue

Dr. Johannes Lundershausen
Climate Knowledge Lead,
Active Philanthropy

How does climate change interconnect with other issues?

Climate change poses unprecedented challenges for us all. For example, it harms health and nutrition, which affects education. It harms livelihoods, which then threatens security, peace, democracy and the rule of law. And it threatens our natural environment, causing hardship for populations worldwide.

But we need to move beyond thinking about the problem to focus more on solutions. Climate change solutions interconnect with many other issues in positive ways. Renewable energy brings economic benefits, for example. It promises many more jobs than the fossil fuel industry can provide. Renewables are cheaper than the alternatives, and electric cars are heading in the same direction. Switching from traditional to electric vehicles will clean the air we breathe, improving our physical and mental health.

Our climate philanthropy guide shows how the climate crisis impacts funding portfolios – and how philanthropists can benefit from exploring solutions.

What does that mean for philanthropists?

It means they should address climate change straightaway. Let's say you're interested in children's health. Addressing climate change will tackle that directly – because it involves reducing the pollution that damages children's wellbeing. Or, say you're passionate about supporting democracy. Helping the world switch to clean energy will help reduce the power of aggressive and authoritarian energy-rich states.

But the clock's ticking on reducing emissions to keep global warming below 1.5°C. If emissions are still rising in five years' time, we risk locking in a bleak future we can't avoid. So it's critical that philanthropists address climate change now.

Are there any risks – or benefits – of tackling single issues?

Yes, there are both. The risk of focusing on a single issue rather than the bigger picture is that you might discover your solution is doing more harm than good. For example, 15 years ago, the EU's biofuels policy caused an outcome no one intended or predicted: food insecurity and conflict in parts of Africa. Europe and the US exported a problem to another continent.

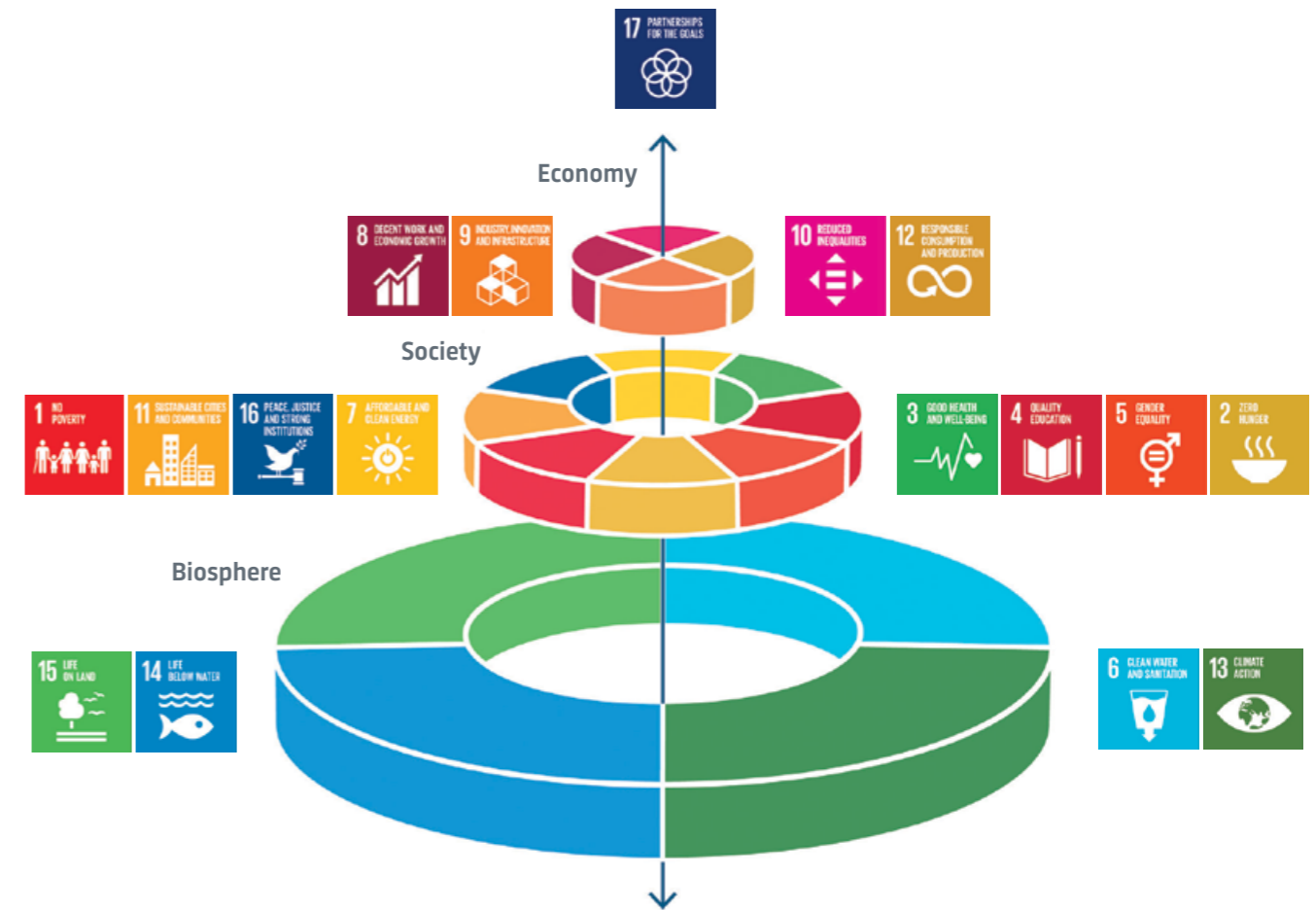
That said, there aren't usually major risks in most of the projects philanthropists want to fund. There are no serious downsides in promoting cycling, persuading people to adopt heat pumps, funding reforestation, or raising awareness about issues. Once you know a project is risk-free, you can focus relentlessly on achieving your goals. If you try to solve every problem in one go, you'll achieve nothing. So focus on one goal, achieve it, then move on to the next.

Want to learn more?

Read the Active Philanthropy's climate philanthropy guide



The SDG Wedding Cake - A new way of viewing the SDGs and how they are all linked to natural ecosystems³²



³² Folke, C., Biggs, R., Norström, A. V., Reyers, B., & Rockström, J. (2016). Social-ecological resilience and biosphere-based sustainability science. *Ecology and Society*, 21(3). <http://www.jstor.org/stable/26269981>. Redrawn from Rockström and Sukhdev (2014) as presented at the 2016 EAT Forum.

01.2 Catapulting the world into action

Humanity knows it must act fast to address the threat of climate change. So far, efforts have been slow. Why? It's a complex issue. The climate crisis is a global problem affecting every aspect of our lives, including science, economics, society, politics and morality.³³ So it's tricky to know which of our efforts will do most good. There are many solutions, and no single approach. But one thing's for sure: we'll need them all to turn things around.³⁴

As the crisis worsens, many people either deny or ignore the need to act. This is both incomprehensible and relatable. The human brain prefers short-term comforts to tricky long-term problem solving. We know we need to roll up our sleeves and find answers. But it's easier to push tomorrow's problems to the back of our minds, and focus on the more comfortable present.

"We can't afford to ignore this crisis. It's as if we're watching as we fly slow motion toward a giant mountain. We can see the crash coming, but we're sitting on our hands instead of altering course. It's time to turn the wheel."

Henry Paulson Jr ³⁷

The power of one versus the power of many

Most people know a few things they could do to protect the climate – like eat less meat, take the train or stop using the tumble dryer. However, many are slow or reluctant to change – because they think it's inconvenient, costly or won't make a difference. We also think, "Others aren't doing it, so why should I?"

The focus on individual action is commendable and essential. Unfortunately, it's distracted us from the interconnected nature of climate change and the importance of acting collectively.³⁵ Climate denial has become climate "inactivism". It's no longer about doubting that climate change exists. It's about giving up the fight.³⁶ So we need both individual and collective activism. Individual action will work when everyone gets involved – but collective action needs to play its part too.

Who's to blame?

National and international laws govern how we live in society. So it's natural that we should rely on those laws to guide how we reduce emissions. We need countries and businesses to disclose their impact and do more to lessen their environmental harm. In short, we need them to take responsibility for mitigating the risks of climate change.

The problem is, it's tricky to attribute a single cause to climate change. If it's not clear who's accountable, anyone might be to blame. The result? We hold no one accountable. For example, greenhouse gases affect the whole planet – not just the country that first released them into the atmosphere. The harm they cause might show up on the other side of the world – making it easy for that country to deny responsibility. On the other hand, it's much easier to identify the culprit of river pollution and oil spills.

But generally, it's difficult for legislators and regulators to prove the links between jurisdictions and impacts elsewhere, and to hold polluters accountable. The result? Rising doubts about climate change and inaction on combatting the issues.

We need a cultural shift

To halt continuing environmental damage, climate change needs to be at the forefront of everyone's minds. Sadly, climate change hasn't caught the public's imagination quite like other issues like racism and sexual abuse, partly due to its scientific nature. Many feel detached from the problem and can't relate it to their own lives. That's why climate change needs a bigger role in global culture through more exposure, not just in the news, but in film, music, art and literature.

Moving pictures

Al Gore's movie – An Inconvenient Truth – was among the first to bring climate change to a global stage. And science fiction movies like The Day After Tomorrow and Waterworld made a big splash (pun intended) with their climate-change-based stories. Then in 2022, the film Don't Look Up broke Netflix records for the most number of hours viewed in one week – 152 million. The movie used an impending extinction-event meteor strike as a metaphor illustrating people's blinkered denial of climate change and over-reliance on unproven technologies. Its satirical sideswipes, dark humor and all-star cast ensured the film reached an audience others hadn't managed before. Now it's time for the entertainment industry to release more such efforts – and bring climate-change issues and solutions firmly into the mainstream.

³³ DeCoste, S., & Puri, J. (2019). Complexity, climate change and evaluation. IEU Working Paper No. 02, Green Climate Fund. Songdo, South Korea

³⁴ Masson-Delmotte, V., P. et al (eds.) 2018 Summary for Policymakers: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty

³⁷ Paulson H, 2018 <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/short-termism-and-the-threat-from-climate-change>

³⁵ Mann, Michael The new climate war: the fight to take back our planet Hachette Book Group, 2021

³⁶ Shenker J, 2021 Meet the 'inactivists', tangling up the climate crisis in culture wars the Guardian <https://www.theguardian.com/environment/2021/nov/11/inactivists-tangling-up-the-climate-crisis-in-culture-wars-manston-airport-kent>



Through a scientist's eyes

Prof. Dr. Thomas Crowther
Professor of Global Ecosystem
Ecology at ETH Zurich,
Founder of the Crowther Lab,
Chair of Advisory Board for UN
Decade on Ecosystem Restoration

How we can achieve the rapid change we need to limit the severity of the climate crisis?

Climate change is, literally, a matter of degrees. The sooner and more decisively we act, the more effectively we can limit how much hotter the Earth gets.

We'll change the current alarming global warming trajectory by rapidly:

- transitioning to low or no-carbon economies
- protecting natural ecosystems
- restoring biodiversity to degraded lands.

These actions will limit climate change – while significantly improving human wellbeing.

How can we bring climate change to a wider audience, and motivate people to act?

Climate change threatens our economies, infrastructure, social institutions, health and wellbeing. We need to be outraged at the systems that got us here. But we need to turn that outrage into action – and to do that, we need optimism. We can limit climate change. And it begins with embracing the scalable solutions that are emerging every day. We need thousands of solutions, like urban forests, plant-based diets, public transport, electric cars, solar power and better home insulation. Together, we need to be optimistic and motivated about turning these innovations into positive climate action.

Crowther Lab explores nature-based solutions to climate change. What part can they play?

Nature-based solutions protect and revitalize nature – and could contribute up to 30% of the carbon drawdown and emissions reductions we need to fight climate change. But they're not a one-stop-shop solution. We need to implement them alongside technological and societal solutions that limit atmospheric carbon. But it's about much more than absorbing carbon. It's about protecting natural ecosystems, biodiversity, the climate and human wellbeing.

Successful nature-based solutions generally offer social and economic opportunities, like agroforestry and ecotourism, and are the foundation for nature-based businesses. When nature becomes the economically sustainable option for local people, the solutions can grow and scale. When we collectively protect nature and the biodiversity local people depend on, everyone benefits.

01.3 The impact of climate change

The consequences of climate change are huge. They affect everything and everyone: our planet and everything that lives on it. Our societies, economies, businesses and cultures. Our very existence.

And it's not just the all-encompassing nature of climate change that threatens us. The speed at which it's unfolding magnifies the risks. Because the climate is changing too fast for species and ecosystems to adapt.

01.3.1. Impact on the planet

Rising temperatures are melting the world's ice sheets, causing sea levels to rise and air to become moister. In turn, this is intensifying storms and eroding coastlines.³⁸ Indeed, the increase in intensity and frequency of extreme weather events – storms, floods, wildfires and droughts – are among the main manifestations of climate change.³⁹

Climate change is also making our oceans more acidic, less oxygenated and warmer⁴⁰ – creating “dead zones” where biodiversity can't survive, and wiping out sensitive habitats like coral reefs

Did you know?

Around 10% of Earth's land is covered with glacial ice. Almost 90% of this is in Antarctica, while the remaining 10% is in the Greenland ice cap. Scientists project that, if emissions continue to rise unchecked, the Arctic could be ice free by the summer of 2040.⁴¹

Want to learn more about climate and the ocean?

Check out our guide, “Sea beyond the Blue”⁴²



Want to learn more about the link between climate and biodiversity?

Check out our guide, “Seeds of change”⁴³



Did you know?

Oceans have absorbed over 93% of heat rises since 1970.⁴⁴ They're an important climate regulator, as they capture and store over a third of carbon emissions and absorb more than 90% of excess heat from the air.⁴⁵ Without our oceans, our planet would be vastly warmer.

³⁸ Bell, Jesse E.; Brown, Claudia Langford; Conlon, Kathryn; Herring, Stephanie; Kunkel, Kenneth E.; Lawrimore, Jay et al. (2018): Changes in extreme events and the potential impacts on human health. In Journal of the Air & Waste Management Association (1995) 68 (4), pp. 265–287. DOI:10.1080/10962247.2017.1401017.
³⁹ Herring, Stephanie C.; Christidis, Nikolaos; Hoell, Andrew; Hoerling, Martin P.; Stott, Peter A. (2019): Explaining Extreme Events of 2017 from a Climate Perspective. In Bull. Amer. Meteor. Soc. 100 (1), S1-S117. DOI: 10.1175/BAMS-ExplainingExtremeEvents2017.1.
⁴⁰ IPCC. (2014). Climate Change 2014 Synthesis Report Summary for Policymakers
⁴¹ Why are glaciers and sea ice melting? (2022). World Wildlife Fund. <https://www.worldwildlife.org/pages/why-are-glaciers-and-sea-ice-melting#:~:text=Human%20activities%20are%20at%20the,sea%20and%20retreating%20on%20land>

⁴² UBS. (2020). Sea beyond the Blue: a guide on the oceans for philanthropists and changemakers. <https://www.ubs.com/global/en/ubs-society/philanthropy/experiences/beyond-blue.html>
⁴³ UBS. (2021). Seeds of change: A guide for philanthropists and changemakers to protect biodiversity and all life on land. <https://www.ubs.com/global/en/ubs-society/philanthropy/experiences/seeds-of-change.html>
⁴⁴ IPCC. (2014). AR5 Synthesis Report: Climate Change 2014. Retrieved from <https://www.ipcc.ch/report/ar5/syr>.
⁴⁵ IPCC. (2014). AR5 Synthesis Report: Climate Change 2014. Retrieved from <https://www.ipcc.ch/report/ar5/syr>.

01.3.2. Impact on people and society

Climate change contributes to almost every issue affecting people and society. But it also seriously harms and exacerbates inequality among vulnerable people who typically face discrimination due to their gender, age, ethnicity, socio-economic status, class or disability.⁴⁶ And it disproportionately impacts those living in conflict areas.⁴⁷

Extreme weather events, such as droughts and floods, put stress on agricultural systems. And changing weather patterns harm access to food and water, and livelihoods and wellbeing, which leads to civil unrest. Research over the past decade has found that climate change has caused – and will cause – more conflicts.⁴⁸ These factors have led to wide and ongoing displacement of vulnerable populations. In fact, studies suggest that many more people will be displaced in the future.⁴⁹

The rising global temperature affects our health too. For example, it's leading to a growing range of infectious diseases – especially zoonoses and vector-borne diseases, such as zika and malaria.⁵⁰ Research has also shown a link between climate change and mental health disorder, especially following disasters.⁵¹

Climate change disproportionately affects socially and economically disadvantaged and marginalized people.

Did you know?

Climate change could push **132 million people** into poverty over the next 10 years.⁵²

In 2020, **30 million people** were displaced within their own countries due to weather-related hazards such as storms and floods.⁵³ This figure could rise to **216 million by 2050** if we don't act on climate change.⁵⁴

How climate change can undermine your philanthropy

As a philanthropist, you may have decided to focus on issues other than climate change. But ignoring climate change can reduce or even eliminate the impact of your philanthropy.

For example, if you're focusing on girls' education, your main goal might be to improve their learning outcomes. But have you considered the risks that girls in families facing famine or hardships are more likely to be taken out of school or suffer from malnutrition? Failing to account for these facts might limit the results of your efforts.



Why are women more affected by climate change?

Women face higher risks especially in low and middle-income countries – further widening gender-based health disparities.⁵⁵ For example, disproportionately more women die during natural disasters.⁵⁶ And giving birth following natural disasters comes with an increased risk of complications and low-birthweight infants.⁵⁷

There are physiological and sociological reasons for this. For example, women who are generally more likely to have nutrition deficiencies during menstruation, pregnancy, and nursing⁵⁸ can suffer further deficiencies from food insecurity, and social practices that prioritize giving food to children and men.⁵⁹ Facing these challenges, women also suffer the physical and health consequences of caring for the household, for example, fetching water and preparing food.

⁴⁶ IPCC. (2014). AR5 Synthesis Report: Climate Change 2014. Retrieved from <https://www.ipcc.ch/report/ar5/syr>

⁴⁷ Clement, Viviane, Kanta Kumari Rigaud, Alex de Sherbinin, Bryan Jones, Susana Adamo, Jacob Schewe, Nian Sadiq, and Elham Shabahat. 2021. Groundswell Part 2: Acting on Internal Climate Migration. Washington, DC: The World Bank.

⁴⁸ Mobjork, M. (2017). Exploring the links between climate change and violent conflict. SIPRI Yearbook 2017: Armaments, Disarmament and International Security (Chap. 8). www.sipriyearbook.org

⁴⁹ Clement, Viviane, Kanta Kumari Rigaud, Alex de Sherbinin, Bryan Jones, Susana Adamo, Jacob Schewe, Nian Sadiq, and Elham Shabahat. 2021. Groundswell Part 2: Acting on Internal Climate Migration. Washington, DC: The World Bank.

⁵⁰ Bartlow, A.W., Manore, C., Xu, C., Kaufeld, K. A., Del Valle, S., Ziemann, A., Fairchild, G. and Fair, J.M. (2019). Forecasting zoonotic infectious disease response to climate change: mosquito vectors and a changing environment. *Veterinary Sciences*, 6(2), 40. Available at: <https://doi.org/10.3390/vetsci6020040>

⁵¹ Cianconi P., Betrò S., Janiri L. (2020). The Impact of Climate Change on Mental Health: A Systematic Descriptive Review. *Frontiers in Psychiatry*. Vol. 11, p.74. Available at: <https://www.frontiersin.org/article/10.3389/fpsy.2020.00074>

⁵² The World Bank (2021). Climate change overview. <https://www.worldbank.org/en/topic/climatechange/overview>

⁵³ IDMC (2021) Internal displacement in a changing climate report.

⁵⁴ Clement, Viviane, Kanta Kumari Rigaud, Alex de Sherbinin, Bryan Jones, Susana Adamo, Jacob Schewe, Nian Sadiq, and Elham Shabahat. 2021. Groundswell Part 2: Acting on Internal Climate Migration. Washington, DC: The World Bank.

⁵⁵ Sorensen, C., Murray, V., Lemery, J., & Balbus, J. (2018). Climate change and women's health: Impacts and policy directions. *PLoS medicine*, 15(7), e1002603. <https://doi.org/10.1371/journal.pmed.1002603>

⁵⁶ Kuehn L, McCormick S. Heat Exposure and Maternal Health in the Face of Climate Change. *Int J Environ Res Public Health*. 2017;14(8):853.

⁵⁷ Tong VT, Zotti ME, Hsia J. Impact of the Red River catastrophic flood on women giving birth in North Dakota, 1994–2000. *Matern Child Health J*. 2011;15(3):281–8. doi: 10.1007/s10995-010-0576-9

⁵⁸ Rahman MS. Climate change, disaster and gender vulnerability: A study on two divisions of Bangladesh. *Am J Hum Ecol*. 2013;2(2):72–82.

⁵⁹ Ibid

An urban perspective

Lauren Sorkin

Executive Director
Resilient Cities Network

How can we make ourselves more resilient to the climate crisis?

We need to be more transparent about how vulnerable we all are to the crisis – and the ways we’re responsible for it. We need simple targets that industry, governments and the financial sector can follow to reduce emissions in the areas of greatest potential: cities, buildings and transport systems. Equally, we need more natural systems to absorb more greenhouse gases.

We’re starting to see this happen with the UN’s Race to Zero and Race to Resilience, for example. The clear and simple target of reaching net-zero is allowing companies, cities and the financial sector to align on how best to deliver measurable results and achieve the goal. We need similar targets and a common language about our vulnerability and how to become more resilient.

Are there some things we simply won’t be able to change?

Yes. We must acknowledge that historic emissions have made some climatic change unavoidable. So we should invest as much in adapting and building resilience as we are in mitigating the harm of climate change. Cities and governments are on the frontlines. They have the size and responsibility over infrastructure and social programs to mitigate and adapt to climate challenges. We need to invest in cities and local leaders who can rapidly test, trial and share solutions and approaches that work worldwide.

What part can nature-based solutions play in urban areas?

Nature-based solutions (NBS) can be incredibly impactful. For instance, green roofs make buildings more energy efficient, reduce emissions, reduce flooding risks, improve biodiversity and bring communities closer together. Green corridors bring nature back to cities, helping them transition from traditional cars to more active and greener transport methods.

Cities should tailor their NBS to their unique situations and priorities. For example, coastal cities might implement marine NBS, like mangroves, which sequester carbon and reduce flood risk. Additionally, wetlands can improve water quality while providing recreational space. NBS is exciting because it doesn’t just benefit the environment – it also creates better societies.

Cities should find every possible way to include NBS solutions – which we also call “blue and green infrastructure”. But they should also ensure the solutions make us more resilient to climate change. This will result in value-for-money solutions that communities welcome and treasure – and that make people even more proud of their cities.



01.3 Climate change risks

01.4.1. Physical risks

Changing climatic conditions and extreme weather causes physical risks such as droughts, floods, storms and sea-level rises. They directly damage property (for example, from flooding or wildfire) and indirectly harm global supply chains, agricultural output and labor.

Physical risks usually affect specific places. However, they can also occur anywhere, impacting areas far beyond the first location, and for some time afterwards. These risks are becoming more serious and frequent⁶⁰, and occurring in every nation worldwide.⁶¹

Did you know?

If average temperatures continue to rise at the current rate, 10% of the world's economic value could be lost by 2050.⁶²

01.4.2. Transition risks

Transition risks are risks to businesses when societies and economies switch to climate-friendly ways of living and working. These risks might arise from changes to policies and regulations (making it hard for companies to comply with new rules), market-beating technologies (that threaten competitors), market fluctuations, reputational harm (for example, negative news on poor environmental practices), and legal threats. Companies and individuals can suffer lower profits, increased costs, and lower valuations. They might also need to account for these risks in their future prices.

01.4.3. Systemic risks

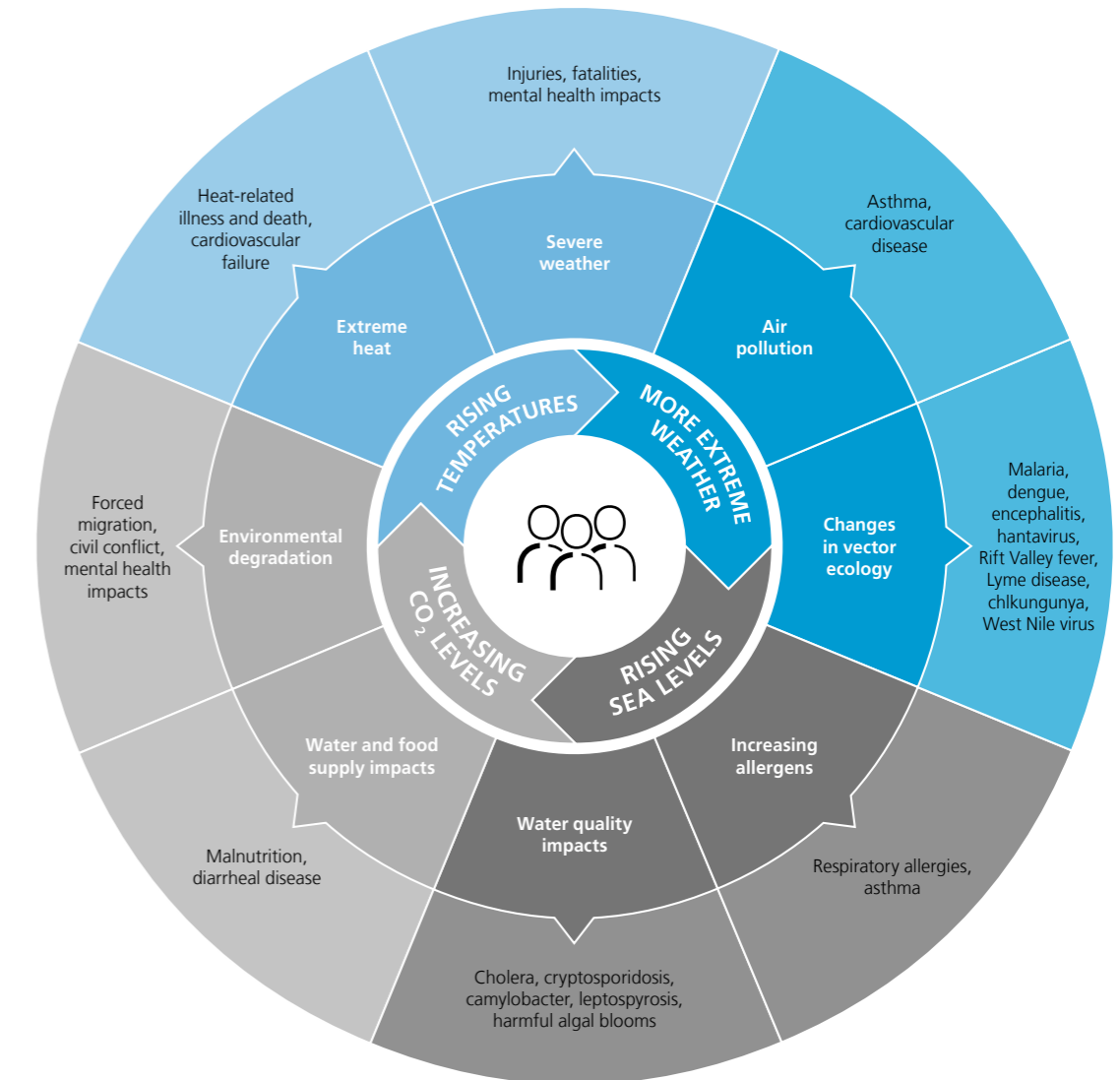
The climate crisis affects the very systems in which we live. Whether people feel climate change affects them or not, its impacts ripple through these systems and impact everyone. Experts call these "cascading effects".⁶³

They include:

- disrupted trading and increased migration, creating political instability and fueling regional and international conflict
- limited access to food (for example, through increased pests and diseases, and crop failure) and energy
- health crises (for example, higher mortality due to rises in infectious diseases).

According to the international affairs think-tank Chatham House, the risks are compounding, and if we don't act immediately, the impacts will be devastating.⁶⁴

How climate change affects our health⁶⁵



Did you know?

Studies show that the greenhouse gases already in our atmosphere will push global temperatures to around 2.3°C above pre-industrial levels – unless we can find a way to successfully remove the carbon and reverse the trend.^{66 67}

⁶⁰ Pörtner H-O et al (eds.) IPCC, 2022: Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press.
⁶¹ Woetzel J et al 2021 Climate risk and response: Physical hazards and socioeconomic impacts McKinsey & Company <https://www.mckinsey.com/business-functions/sustainability/our-insights/climate-risk-and-response-physical-hazards-and-socioeconomic-impacts>
⁶² www.swissre.com. (n.d.). The economics of climate change | Swiss Re. [online] Available at: <https://www.swissre.com/institute/research/topics-and-risk-dialogues/climate-and-natural-catastrophe-risk/expertise-publication-economics-of-climate-change.html>.
⁶³ Hui-Min LI, Xue-Chun WANG, Xiao-Fan ZHAO, Ye Qi, Understanding systemic risk induced by climate change, Advances in Climate Change Research, Volume 12, Issue 3 2021, Pages 384-394, ISSN 1674-9278, <https://doi.org/10.1016/j.accre.2021.05.006>

⁶⁴ Quiggin D et al 2021 Chatham House Climate change risk assessment
⁶⁵ Adapted from: D. (2015, January 5). Health Impacts of Climate Change | San Francisco Climate and Health Profile. Health Impacts of Climate Change. <https://sfclimatehealth.org/health-impacts-of-climate-change/>
⁶⁶ Zhou, C., Zelinka, M.D., Dessler, A.E. et al. Greater committed warming after accounting for the pattern effect. Nat. Clim. Chang. 11, 132–136 (2021). <https://doi.org/10.1038/s41558-020-00955-x>
⁶⁷ Warming already baked in will blow past climate goals, study finds 2021 Associated Press NBC News <https://www.nbcnews.com/science/environment/warming-already-baked-will-blow-climate-goals-study-finds-rcna216>

Combating climate risks

Anita Punwani
Chair
Environmental & Social
Governance (ESG) Group
Institute of Risk Management

Do you think society is ready to combat climate risks?

Not yet. The good news is, the public knows more about climate risks than ever before. And many global players are ready to combat those risks. But still we're not tackling many of the risks to the environment and society. We're not properly identifying, assessing, treating, monitoring and reviewing the greatest risks to society – namely those facing future generations and vulnerable communities in the Global South (a term that generally refers to the regions of Latin America, Asia, Africa and Oceania).

What part can philanthropists play?

Philanthropists can lead by example. To help them do that, UBS has created guides that explain the world-changing benefits of philanthropists acting collectively, sharing knowledge and working towards the UN Sustainable Development Goals.



Counting the costs

Linda Freiner
Group Head of Sustainability
Zurich Insurance Company Ltd

How are insurance companies dealing with the costs of climate risks?

As a global insurance company, we're seeing first-hand the impacts of climate change on society. Over the past year, we've helped businesses and communities recover from hurricanes, wildfires, hailstorms, floods and severe winter storms.

So we have a vested interest in fighting climate change – as an insurer and investor. We've refocused our underwriting and investment portfolios towards achieving net-zero emissions by 2050. A big part of this involves engaging with our customers and the companies we invest in. We assess their plans to transition to low-carbon processes, and offer to help achieve them.

We also use our investor voting rights to accelerate moves to net-zero within investee companies, and develop new ways to measure impact and scale-up sustainable investment markets. The global insurance industry has assets under management of around 40 trillion US dollars. If all insurers – and other institutional investors – embed responsible practices into their principles and processes, then we can unlock the finances we need to truly transform the planet.

We've heard about insurance companies insuring natural habitats like coral reefs. How does this work?

Insuring a natural habitat, like a coral reef, typically involves solutions that pay out money when an extreme weather event (such as an earthquake) damages the habitat. Such innovative solutions can help preserve the natural habitats that play a key role in our fight against climate change.

What more can the insurance industry do?

We're always looking at ways to do more through our products and services. For instance, last year, Zurich became the first insurer to offer a carbon-neutral equity fund for its life insurance customers. We're also expanding our insurance coverage to include the renewable energy sector, and strengthening our clean energy underwriting capabilities.

It's vital to mitigate climate change by reducing emissions. But we also need to adapt and become more resilient to it. The insurance industry can play a big role in this. For example, we're helping businesses identify, assess, quantify, mitigate and adapt to evolving climate risks.



02 Getting started

Imagine a cargo ship on the open sea, slowing down to enter a port. Even though the captain has stopped the engines, the ship won't come to rest until some time later. The same applies to climate change. Our environment won't stop changing the moment we implement solutions.

Some change is inevitable. But we can limit the severity of the change and improve outcomes for people and the planet. Tackling climate change is complex. So we'll need to tackle it together. This section explains how you can start making a difference today.

02.1 Ten tips to start your philanthropic journey

1. Reflect

Think about your values and priorities. What motivated you to focus on climate? What assets and expertise can you put to work: money, time, networks or skills?

2. Research and understand

Think about the issues you'd like to address and research them by browsing online, reading reports, talking to experts, and attending webinars or conferences. Consider where your support is most needed, and find out what other people and organizations are doing already.

3. Define, refine and focus

Philanthropists and organizations that make the biggest difference are those that have clearly defined an issue and focused their resources on finding an effective approach or solution. Defining, refining and focusing on an issue will help you shape your vision. It will also clarify why you're getting involved, how you're providing support and who will benefit from your efforts.

4. Turn your vision into a plan

Consider how you can maximize your impact. Set clear goals and make a logic model (words or diagrams describing your activities and goals – like the example on the next page). This will help you understand how the resources you use (inputs) can trigger activities and outputs, which generate outcomes (actual changes) that maximize your impact.

5. Use the right charitable vehicle

A vehicle is only a means to reach your goals. You can choose from many different types of charitable solutions vehicles, including foundations, charitable trusts, donor-advised funds and even giving directly to the charity. Pick a solution that's right for you and your vision.

6. Be brave and think big – there are no rewards without risk

Tackling climate solutions is a big task. But being a philanthropist frees you to rise to the challenge. Try new approaches, learn along the way, adapt your plans as you go and gather evidence at every step. Proving your work is successful will help you attract more investors and expand your efforts.

7. Measure, learn, adapt and share

Seasoned philanthropists understand the importance of asking smart and challenging questions about their efforts. They also use qualitative and quantitative measurement systems that are ethically, culturally and financially appropriate. If you're willing to share your insights, even better – you'll really be advancing the cause.

8. Collaborate with others

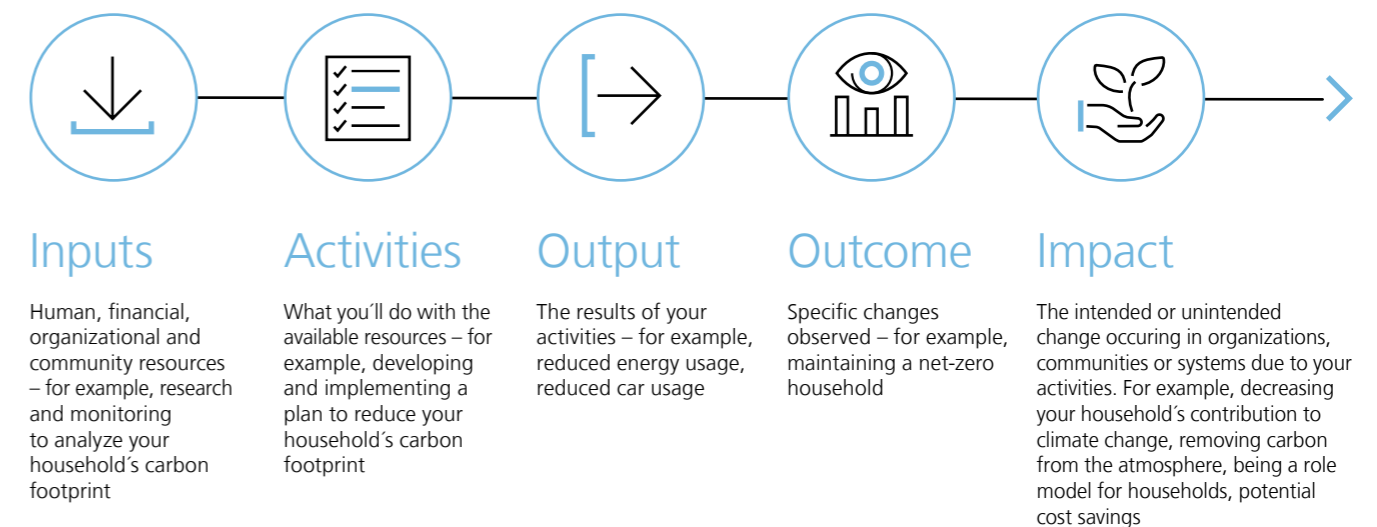
The issues facing the planet are too big for any individual or organization to tackle alone. Collaborating with others will achieve more because you can combine your resources, expertise and influence. Working on your own means you may only achieve results locally.

9. Think beyond philanthropy

There are many paths to making a difference and they can all complement each other. Awarding grants is one. Social financing in the form of equity or loans is another. Or you could look into engaging personally with a cause, setting up your own venture and investing sustainably.

10. Enjoy the journey

No one has ever achieved greatness without being passionate and enthusiastic. So enjoy the journey, knowing you're helping create a better world.



Splashing the cash

According to the ClimateWorks Foundation (a non-profit organization focused on slowing global warming), in 2020, funding towards mitigating climate change was estimated to be only around 2% of global giving (six to ten billion US dollars out of 750 billion US dollars in total philanthropic giving).

This figure is far too low. But it's increasing dramatically. Overall philanthropic giving grew by 3% while climate funding grew by 14%. Big philanthropic players and new organizations contributed to this rise. Examples of this include the Bezos Earth Fund and some large unexpected pledges from the private sector. The Glasgow Financial Alliance for Net Zero (GFANZ) group also announced that over 130 trillion US dollars from the financial sector would go towards achieving net-zero.

But we need more money – and fast. Philanthropists, governments and the private sector must collaborate quickly and closely to unlock the funds needed to put the world back on track.

A scientific approach to philanthropy

Dr. Patricia Turner
Philanthropist
Turner Kirk Trust

Funds are finite and need to be used wisely. Philanthropists should act as catalysts, leveraging funds and using them to drive transformational change. We can take risks by funding new initiatives, and pilot projects to find sustainable solutions which can then be scaled up. Through the Trust, we have pioneered the concept of “permission to fail”. Only by experimenting with different approaches can we hope to find the best outcome for particular challenges in specific circumstances.

Collaboration is key. We take a multidisciplinary approach. For example, we bring together experts in biodiversity and environmental policy with those from different disciplines such as economics, law and finance, to work with local communities to find solutions that can be implemented internationally.



Family values

Julie Lépinard
Founder
Fondation Erol

Why did your family decide to address climate change?

We started our foundation – Fondation Erol – to invest in effective organizations and courageous leaders that could make our world more sustainable, just and prosperous.

In 2015, we decided to host a “climate and capital” event at the COP 21 conference in Paris. At the time, much of the finance community hadn't considered climate change in their processes and lending. So Fondation Erol gathered scientists, business and finance leaders, and philanthropists to discuss climate science, risks and solutions. While preparing for the event, we realized we needed to act now on climate change – the most pressing issue of our day.

What was the biggest challenge you faced? And how did you overcome it?

Because climate change affects everyone and everything on our planet, we asked ourselves, how can a relatively small foundation solve such a big problem? We first wanted to understand the causes of climate change – that was the most important step for us. It was clear that fossil fuel underlies everything.

So the challenge was to identify where we could invest to have a transformational impact. We like new approaches, and providing grants that support testing and developing new ideas. That's important, because the world needs lots of new solutions to address the fundamental cause of climate change. Those solutions embrace areas like education, technological innovations, policies, industry transitions, and many more.

What's the biggest lesson you've learned?

We learned that to truly address climate change, businesses and governments need to move away from carbon-based processes and economies – but that they also need to help their populations who will need to transition to new livelihoods. The public really needs to get behind this. So our challenge is to work out how best to build public demand for fast and bold action on climate change.

How would you encourage someone to make the leap into climate philanthropy?

Start with the science. Understand what's causing climate change. Then address it.

Excessive greenhouse gases have caused the problem. And the solution is to remove those gases from our environment. There are many ways to do this – and some of those ways might already involve a passion of yours.

For example, if you're passionate about improving public health, think about investing in ways to reduce air pollution and greenhouse gases in local communities. If you're committed to conserving the oceans, consider investing in protecting coastal mangroves, seagrasses and tidal marshes, which store greenhouse gases in soil and sediment. If education is your priority, ask organizations what they need to teach the next generation about climate change.

02.2 Top tips from philanthropists



Find your passion and act

Find your passion – it will fuel you. Find passionate people – they will run fast with you. Be wildly bold in your vision. Our planet doesn't have time to wait, and we're only here for less than 100 years. Use your time wisely and push for big change.

Ginger Dosier

President, Biomason & UBS Global Visionary 2022

Act now – the climate crisis is too urgent to delay. Follow your passion, start giving, join others and take risks. There's much, much more to lose by not acting than by acting, failing, learning and trying again. And regularly ask yourself, how can my funding solve lots of problems at once?

Florence Miller

Director, Environmental Funders Network

Get started – focus on projects that tackle specific issues and that have a clear and credible theory of change. There is no time for philanthropic money to be wasted – every cent is needed, right now, to deliver real change.

Dr. Johannes Lundershausen

Climate Knowledge Lead, Active Philanthropy

Do it now. Now is what matters.

John Bernstein

Partner at Generation Investment Management, Board Member, The Nature Conservancy

If you want to see change, first become that change. The threat of climate change has never been more serious, and we must all take action. Start by including plant-based options in your meals. Even that one small step is a huge help to our planet.

David Yeung

Co-founder and CEO, Green Monday & UBS Global Visionary 2022



Understand the issues

Start with the science. The more your philanthropy can address the direct causes of climate change, the more impact you will have.

Julie Lépinard

Founder, Fondation Erol

Understand the risks to society and the natural environment. Join communities advocating for, or implementing, change. And consider how your personal and professional decisions might influence change.

Anita Punwani

Chair, Environmental & Social Governance (ESG) Group, Institute of Risk Management

Listen to the science. Learn from and involve the community around you. No action is too small.

Djian Sadadou

Communications & Communities Officer, Office for Climate Education

Consider the big picture. It's not a question of doing one thing instead of another. Reduce emissions as much as possible and remove the unavoidable rest (i.e. the historic emissions that have built up in our atmosphere, as well as residual emissions that cannot be avoided). To reach net-zero by 2050, we need to drastically accelerate emissions reductions, while scaling up our efforts to remove them.

Christoph Gebald

Co-founder and co-CEO, Climeworks & UBS Global Visionary 2022



Give what you can – and give it your best

We all have the opportunity to address climate change – whether as a voter, a community member, a consumer, an employee, an investor or a friend. Find your superpowers and get to work.

Dr. Jonathan Foley

Executive Director, Project Drawdown

Focus on where you can make a difference and act with urgency. Moving swiftly increases our chances of achieving our climate goals – and will help you grasp the opportunities arising from net-zero.

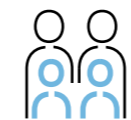
Linda Freiner

Group Head of Sustainability, Zurich Insurance Company Ltd

Any skill you have – coding, painting, building, caring for people – can help solve climate change. The key is to start, and then to scale your effort up. Take one step this year. And then grow your impact every year. If we all commit to starting and scaling, we can do this.

Yishan Wong

CEO and founder, Terraformation & UBS Global Visionary 2022



Team up

Think outside your box. Climate change is a collective problem that calls for collective action. Governments, businesses and individuals need to work together, sharing science-backed data, insights and ideas across different disciplines and sectors.

Prof. Koh Lian Pin

National University of Singapore

By joining forces with philanthropic organizations like the UBS Optimus Foundation, you can multiply the impact of your investments – while taking the guesswork out of vetting projects and organizations.

Jennifer Waugaman and Chris Bessenecker

Co-founders of AfriScout & UBS Global Visionaries 2022

Connect with great people working on projects. There are far too many groups that just meet in cool places and talk. Some of today's great projects will become giant commercial successes. Finding and fueling those projects will create a lasting impact – and a lot of wealth.

Bill Tai

Venture capitalist and founder, ACTAI Global

Speak to and learn from others. You don't need to figure this all out on your own. Join a group of peers, and ask professionals how you can align your values with your investments.

Justin Rockefeller

Rockefeller Brothers Fund and The ImPact

It's never been more urgent to address the climate crisis. The philanthropic community is rising to the challenge with new funders and more funding for climate than ever before. Philanthropy is an essential partner to government, private and civil actors to help drive real-world impact. But to maximize impact, we need to think even bigger and collaborate in even more radical ways to ensure investments in climate action are targeted to amplify our collective impact. This is where ClimateWorks is focused – driving climate solutions, convening philanthropic collaborations, and providing much-needed analytics and data that enable philanthropists to make faster, better-informed, and high-impact investments in the climate.

Helen Mountford

President and CEO, ClimateWorks Foundation



Work with local communities

Humanity must get back to nature for solutions. The closer we are to nature, the more whole, happy, at peace and at ease we are. We must stimulate grassroots community movements by directing resources to programs and projects that accelerate healing, restoration, management and protection of nature to unlock her richness. The time is now.

Festus Kiplagat

Founder, Green Planet Initiative 2050

Get involved in local projects and collaborate on sustainable project ideas. People can do great things when they start identifying with the issues. When community members care about their environment, they get involved for the long term. Work with your head, heart and hand to strengthen the sense of community and trigger positive emotions. The results will surprise you.

Angela Serratore

Program Manager, Climate School, MYBLUEPLANET

Strengthen the systems that protect communities and bring us into balance with our planet. Invest in the assets that cities need to create resilient communities. These projects, included in a "city resilience plan", will ensure communities survive, adapt and thrive in the face of inevitable shocks and stresses.

Lauren Sorkin

Executive Director, Resilient Cities Network



Unlock the doors to capital and innovative financing

In 2022, over 700 million people still lack access to electricity, and nearly 3 billion people have no alternative but to use polluting and dangerous cooking fuels. This lack of basic access disproportionately impacts children's education, women's health, and people's ability to find decent jobs. Many solutions exist, using modern technologies, such as digital payments, IoT (the Internet of Things – devices that connect and exchange data) and renewable energy sources. But those solutions can't solve the issues on their own. The size of the problem is so large, these solutions cannot come close to the necessary scale. The missing component in resolving the access problem is finance. Commercial and philanthropic capital, working together, can fund scalable solutions effectively. This is critical for reaching the UN's Sustainable Development Goals, especially SDG 7 – "clean energy for all" – and giving all people the opportunity to be included in today's global economy.

Mansoor Hamayun

CEO and co-founder, BBOX

Private philanthropists should be the most risk-tolerant funders, taking high risks where high social returns are possible. Private philanthropy is the ultimate risk capital. While governments and businesses are accountable to the public and shareholders respectively, philanthropy aims only for social returns and benefits. By funding early-stage ideas and social enterprises, we hope to achieve breakthrough disruptive innovations. Second, we must catalyze the growth of good ideas. Private philanthropy should use more blended finance solutions, such as first-loss tranches, guarantees, convertible grants and concessional loans – because they de-risk private investments and unlock more public funding. Venture philanthropy (investing in sustainable and climate-friendly organizations) can also bring great ideas, solutions and technologies onto a path to scale.

Johannes van de Ven

Managing Director, Good Energies Foundation

Every sector needs to transform during this decade. We need stringent emissions reductions now. We know that technologies like solar energy can achieve rapid change. So we should focus on acting at scale – supporting societal change, using blended finance (investments that combine philanthropic funds with commercial investments), developing new solutions, and massively scaling-up current approaches.

Dr. Carl-Friedrich Schleussner

Head of Climate Science and Climate Analytics, Humboldt University Berlin



Shape the ecosystem that can bring solutions to scale

We need a framework which enables investment in a portfolio of nature-based businesses that isn't based purely on carbon. We're developing systems to monitor biodiversity that will unlock the trust needed to invest in nature.

Prof. Dr. Thomas Crowther

Professor of Global Ecosystem Ecology at ETH Zurich, Founder of the Crowther Lab, Chair of Advisory Board for UN Decade on Ecosystem Restoration

Philanthropists are central to catalyzing new models that have the potential to tackle climate change and biodiversity loss at scale. Think about how you can get the most impact for your capital, supporting new approaches that can truly change the world.

Marianne Kleiberg

Regional Managing Director Europe, The Nature Conservancy



03 Taking action

Keeping the world's temperature rise below 1.5°C is going to be expensive. It's estimated that funding must increase **every year** by at least 4.13 trillion US dollars.⁶⁸

To achieve this, we'll need many more funding sources beyond money from governments. We need funding from businesses – focused on mitigating and adapting to climate change.

Mitigation
involves preventing climate change from happening, by either reducing greenhouse gas emissions, or removing those gases from the atmosphere.

Adaptation
involves keeping communities and ecosystems strong, healthy and resilient in the face of climate change.

To limit the harm of climate change, we need mitigation and adaptation. Climate change is already happening, so mitigation can only go so far. We need to adapt to it too.

More delays on global adaptation and mitigation will mean we miss a rapidly closing window of opportunity to secure a livable and sustainable future for all.⁶⁹

Unleashing new solutions

Dr. Jonathan Foley
Executive Director
Project Drawdown

What's Project Drawdown, and how did it start?

Project Drawdown is the world's leading resource for climate solutions and strategies. We find and analyze the best climate change actions, and share our findings with the world. We also collaborate with communities, policymakers, businesses, investors, and philanthropists to launch climate solutions quickly, safely and equitably.

What does your work involve?

Our work covers three areas:

- **Advancing climate solutions and strategies.** We review the latest scientific, technical and economic data to assess current climate solutions, and share this with the world. We provide the facts – not hyperbole or wishful thinking – for others to use to guide their strategies. And we share a broader view of climate solutions, to show how they can improve human wellbeing, repair our damaged biosphere, and address long-standing inequities.
- **Expanding the conversation to new and more diverse audiences.** We're a source of insight and information about climate solutions. And we're doing all we can to start conversations with, and bringing this information to, new and diverse audiences.
- **Helping key stakeholders advance climate action.** We help key stakeholders advance climate action globally. We work with business leaders, helping them advance their climate leadership. And we're working with community leaders, investors, philanthropists and others to create more effective climate strategies.

Did you know?

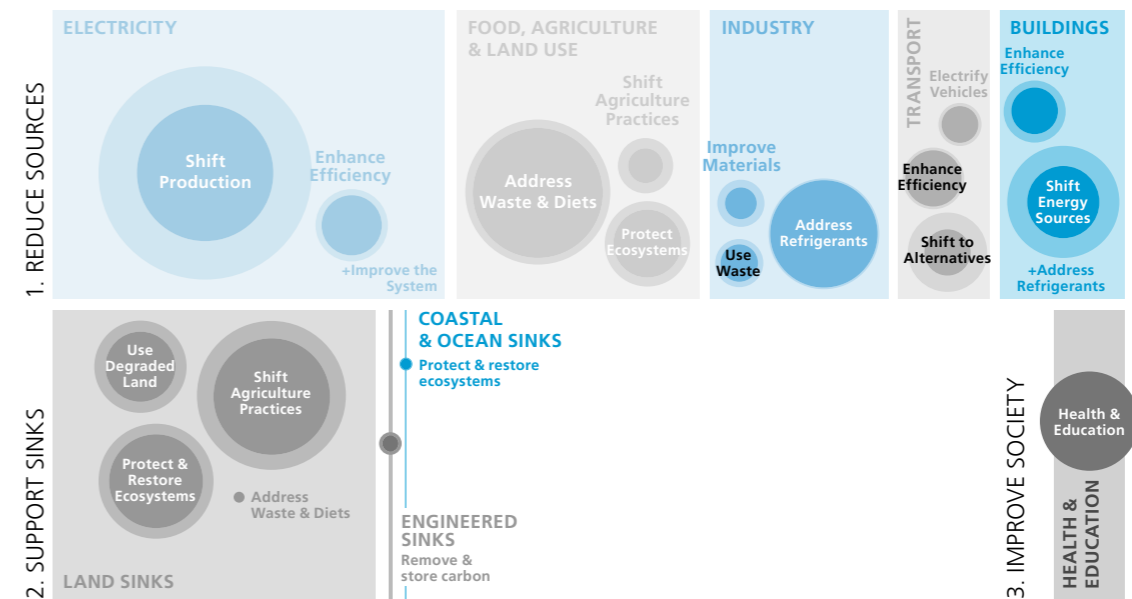
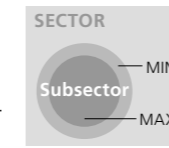
"Drawdown" refers to a point in the future when the atmospheric greenhouse gas levels start to gradually decrease.

Drawdown framework for climate solutions⁷⁰

We need to address every aspect of the climate crisis — by reducing emissions and removing greenhouse gases from the atmosphere, and supporting sustainable ways of living and working. There are many solutions in almost every sector of our lives, which Project Drawdown has summarized in this graphic. The graphic shows the potential emissions reductions of each sector and its subgroups.

Key:

Size represents potential emissions reductions (CO₂-eq (Gt) 2020-2050)



Source: Project Drawdown Analysis. www.drawdown.org

Want to learn more?



⁶⁸ Burg, N. (2021, October 25). Who Funds the Fight Against Climate Change? Means and Matters. <https://meansandmatters.bankofthewest.com/article/sustainable-living/taking-action/who-funds-the-fight-against-climate-change/>
⁶⁹ H.-O. Pörtner IPCC, 2022: Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press.
⁷⁰ Project Drawdown Analysis. www.drawdown.org

03.1 How to start the conversation and raise awareness

A 2020 survey by the University of Oxford's Reuters Institute⁷¹ examined the attitudes to climate change of more than 80,000 people worldwide. It showed that almost 70% of those surveyed think climate change is a critical issue. Those most concerned live in countries already significantly impacted by extreme weather events.

But how many people regularly discuss climate change in their everyday lives? In the US, the number is low – more than 60% of Americans “almost never” raise the topic with those closest to them. And under a quarter report hearing anyone they know talking about climate change.

At the same time, politicians need evidence that their populations support change, so we need to accelerate these conversations. Take the lead on starting compelling, evidence-based discussions – and use your personal, professional and political influence to create change.

So, how can you start a conversation? How can you raise awareness while considering people's sensitivities?



- **Be a role model.** Consider your own lifestyle and try to set a good example. Don't just talk about your values. Live by them. Revealing the things you've done will add weight to the things you know. For example, could you eat less red meat, fly less and use renewable energy?



- **Use your platform.** Consider how you might be able to communicate. Are you on social media? Could you publish tips and articles to a big audience? Perhaps you're an influencer who can create short videos. Decide on your message. Do you want people to make gradual changes in their lives, or to influence those who steer economic policies and businesses?



- **Start conversations.** Raise the climate change topic wherever possible with family, friends and, crucially, your network. Most people can change one or two opinions. But if you're an influential individual, your conversations and actions might change millions of minds.



- **Show respect and demonstrate empathy.** People know when you don't respect them. And individuals often hold on tight to their opinions. Overcoming disinformation and denial takes time, and can be especially difficult with family members. Think months and years, not hours. Start by asking about their views. Find out what they think before you share what you know. “What do you think about climate change? What do you think we should be doing?” And then – crucially – stay quiet and listen. Then consider their position before you respond.



- **Consider your tone.** Being encouraging is more likely to influence people than by being overly aggressive or assertive. Assertiveness isn't necessarily a bad thing, but think carefully about how people might receive and react to your messages. And try to start your communications with facts, followed by information on what people can do. If you're talking to individuals, you might focus on the small but important changes people can make in their lives – such as what they buy and eat, and how they invest.



- **Work with a message of hope.** People aren't good at dealing with doom and gloom. It makes us feel helpless. And nobody feels passionate about no-win scenarios. Talk about solutions, opportunities and projects you're passionate about, rather than old narratives of humanity destroying the planet.



- **Find things you agree on.** Look for common ground on solving the harm of climate change. Facts are good. But connecting with people emotionally is more effective. So find where you agree and work from there.

During these conversations, you're going to encounter skeptics. It's not your job to change their minds. But over time, the things you've said may sink in and change their outlook. If you're trying to influence powerful and influential people, the message is that climate change is happening now, whether they believe it or not. For example, consumers are switching to climate-aware companies,⁷² so to stay competitive, businesses need to change or face commercial failure.

How are others raising awareness

Bill Gates, Al Gore, Ban Ki-moon, Christina Figueres, Sophia Kianni, and Leonard DiCaprio have all used their large and powerful networks to raise awareness and inspire action. In recent years, DiCaprio donated one million US dollars towards paying off the Seychelles' debt⁷³ in exchange for the country creating two marine reserves.

Sophia Kianni, a youth climate activist from the United States, uses social media and her non-profit, Climate Cardinals, to translate documents on climate science. These documents are often not available in languages other than English. A team of over 6,000 volunteers⁷⁴ translate climate information into over 100 languages.⁷⁵

Gore and Gates have pushed for policy changes. Gates has pledged philanthropic capital to complement government spending in climate infrastructure, and Gore has used documentary films and keynote speeches to drive awareness.⁷⁶

⁷¹ Reuters Institute Digital News Report 2020 Newman et. Al (2020) https://reutersinstitute.politics.ox.ac.uk/sites/default/files/2020-06/DNR_2020_FINAL.pdf

⁷² Sustainability & Consumer Behaviour 2021. (2021). Deloitte United Kingdom. <https://www2.deloitte.com/uk/en/pages/consumer-business/articles/sustainable-consumer.html>

⁷³ McCarthy, J. (2018, February 22). Leonardo DiCaprio Helped Pay Off Seychelles Debt to Protect Oceans. Global Citizen. <https://www.globalcitizen.org/en/content/leonardo-dicaprio-helps-pay-off-seychelles-debt-to/>

⁷⁴ Climate Cardinals. (n.d.). ABOUT. Retrieved February 16, 2022, from <https://www.climatecardinals.org/about>

⁷⁵ Newburger, E. (2021, August 12). Bill Gates pledges \$1.5 billion for climate change projects if Congress passes infrastructure bill. CNBC. <https://www.cnbc.com/2021/08/12/bill-gates-pledges-1point5-billion-for-infrastructure-plans-climate-projects-.html>

⁷⁶ Al Gore on Climate Crisis: “We Have the Solutions, But We've Got to Move Faster.” (2021). Hubert H. Humphrey School of Public Affairs. <https://www.hhh.umn.edu/news/al-gore-climate-crisis-we-have-solutions-weve-got-move-faster>

How to build an awareness campaign

STEP 1 Define your goals

Having a clear idea of what success looks like will help you stay focused and measure your progress. Before you launch your campaign, establish your key performance indicators (KPIs - measures of performance towards achieving your goals). You can base these on things like public awareness, social media engagement or a fundraising target.

STEP 2 Identify your audience

The most effective campaigns focus on a narrow group of people at the start. Segmenting your audience, for example, by age, interests, occupation and income will help you tailor your messages and activities. Be prepared to adapt your audience should there be a shift in the economy or social trends. To stay ahead, observe your competitors and be ready to change.

STEP 3 Identify the resources you need

Some campaigns require a lot of resources – and not just money. For example, you may need access to specific media, sources of expertise, and – crucially – time. Mapping your resources and budget will help you identify your gaps and needs, such as funding. At this stage, you might start looking for a partner who can complement your efforts.

STEP 4 Choose the right channels

We're exposed to up to 10,000 advertisements a day, so make sure you choose the most effective channels to capture your audience's attention. The channels you use will depend on your strategy, budget and target audience. Depending on your target audience, using a blend of online and traditional channels will probably be best. Digital channels allow you to reach more people at a lower cost. Traditional channels can add great value, but are more expensive.

STEP 5 Build a network with roles and responsibilities

In most cases, you won't be able to do everything yourself. Depending on your budget, you may have to rely on staff, suppliers and agencies. If you have staff, make sure everyone knows what they need to do. Communication is key, and managing people is a big part of maximizing your impact.



A fresh start

David Yeung
Co-founder and CEO,
Green Monday & UBS
Global Visionary 2022

What inspired you to start Green Monday?

Almost 15 years ago, Al Gore's "The Inconvenient Truth" opened my eyes to the urgency and severity of climate change. It made me realize that businesses and behaviors needed to change from top to bottom. This isn't an option. It's a must.

What does Green Monday do?

We promote sustainable food practices, directly and indirectly. We started as a movement, talking to schools and businesses, educating about the climate crisis, and explaining how Green Monday can help. When we launched our OmniPork series, we partnered with restaurants worldwide, exhibiting the versatility of plant-based food and sustainable diets to the public. People need to know that climate change puts everyone's food and water at risk. Changing our diets will help safeguard our planet and health.

What can we do as individuals?

One of the biggest and easiest steps is to adopt a plant-based diet. Even if you're eating plant-based foods once a day or week, this small step can make a big difference. Lead by example and educate people around you about the benefits of plant-based diets to the human body and environment. With so many options now available, choosing a greener diet has never been easier.

Voices of youth – Fridays for Future US⁷⁷

Fridays for Future is a global, youth-led climate crisis movement.



Ben Clark, 21
Oregon

Gabbie Byers, 19
Montana

Lynetta Chao, 15
Northern Virginia

Katherine Maier, 28
Washington DC

What's the best way to motivate others to get involved?

Katherine: “Share what you do from a place of delight and pride, and invite others to join you. People are much more likely to join if they see how it affects them and that they can make a difference. But they need to make that decision for themselves. Guilt won't work. Whatever you do, talk about it. Most people care deeply about creating a better world and protecting our planet, but societal norms haven't shifted to that way of thinking. That shift starts with each of us being proud and vocal in our actions, and supportive of others' actions.”

Gabbie: “Bring up climate issues in conversation. Where you can, invite people to Fridays for Future strikes or other environmental protests. It's a great way to get others involved.”

Lynetta: “The best way to get involved is to start local. Identify something in your community that's harming the environment. Next, brainstorm ways to help. For example, you might want to limit plastic in your city by finding a way to ban plastic bags, or you could promote climate education in schools. Starting small and building up slowly has worked for me.”

What would you like governments to do?

Ben: “Be transparent. They need to be forthright on the environmental impact of projects and current emissions. My biggest takeaway from reading the IPCC's Sixth Assessment Report was that every gigaton of CO₂ is extraordinarily important. The US projected plan for reducing emissions by half is a good step, but still means that the total emissions of the next ten years will be around 75% of what they would be if we did nothing. We're at a stage where every percentage points matters. Creating an accessible narrative on reducing emissions is key to incentivizing change.”

Gabbie: “I'd like governments to redirect taxpayer money from funding fossil fuels to renewable energy, and help fossil fuel employees transition to jobs in renewable energy.”

Lynetta: “I'd like governments to listen to youth voices and consider those most affected by the impacts of climate change (MAPA⁷⁸). To reverse the damage, we need to move to green energy and protect our ecosystems. And it all starts with listening.”

Katherine: “Governments must take a bold stance on climate action. They must stop the bad and build the good. In the short term, the US government specifically must stop the climate crisis getting worse – and mitigate the harm we can't avoid. On a federal level, the “Build Back Fossil Free” coalition has a list of concrete actions which can be taken immediately. Locally, there's lots that state and local governments can do, which would arguably have a bigger impact on their citizens. The first step to transforming is to create an environment where localities and companies can offer more sustainable solutions.”

“If we can't even talk about climate change, we certainly will never be able to fix it. The most recent reports on the current and forecasted impacts of climate change are clear – we are running out of time. Silence is no longer an option.”

Dr. James McClintock
Professor of Polar and Marine Biology, University of Alabama at Birmingham

⁷⁷ Fridays For Future is an international climate movement active in most countries and our website offers information on who we are and what you can do. (2022, January 25). Fridays For Future. <https://fridaysforfuture.org>

⁷⁸ What is MAPA and why should we pay attention to it? Reyes & Calderon (n.d.) <https://fridaysforfuture.org/newsletter/edition-no-1-what-is-mapa-and-why-should-we-pay-attention-to-it/>

03.2 How to embrace a holistic approach

For many years, humanity has approached the environment, conservation and climate change in isolated ways. Some have championed either climate or conservation. Some have tackled either mitigation or adaptation. Others have focused on either technological or natural solutions.

Today, we know that the best way to win is to work holistically – dealing with the entire issue of climate change. Of course, that's a huge topic. So everyone will need to work together, using a huge variety of different but complementary solutions.



Philanthropists can play a role in all this, maximizing their impact by funding in all-encompassing ways.

Top tip

Look to support programs that build resilience and reduce harm across the environment and society. Think climate, community **and** conservation.

To succeed for the long term, climate mitigation programs need the support of local communities and the foundation of a robust natural ecosystem. Nature and human ingenuity can work wonders together. So we need to scale-up groundbreaking technologies, while implementing nature-based solutions.

Did you know?

In China, the World Wide Fund for Nature (WWF) and tech giant, Intel, are using artificial intelligence to protect wild tigers and other species; store carbon; protect watersheds; and support communities.⁸⁰

Together, we can remove carbon, reduce greenhouse gas emissions and prevent plastic pollution – and all while promoting renewable energy, equity and justice for indigenous communities, and sustainable approaches to agriculture and fishing.



⁷⁹ Gomez Martin et al 2020 Using a system thinking approach to assess the contribution of nature based solutions to sustainable development goals Science of The Total Environment; Volume 738, 10 October 2020, <https://doi.org/10.1016/j.scitotenv.2020.139693>

⁸⁰ Tech for tigers: WWF and Intel test AI technology for monitoring wild tigers in China; 2019 <https://medium.com/wwftogetherpossible/tech-for-tigers-wwf-and-intel-test-ai-technology-for-monitoring-wild-tigers-in-china-2a5c93ece73c>

Tackling climate change with technology

Christoph Gebald
Co-founder and co-CEO,
Climeworks & UBS Global
Visionary 2022

Climeworks uses a technology called “direct air capture”. What is it, and how does it work?

It’s a technology that captures carbon dioxide straight from ambient air. Our facilities run on renewable energy or energy from waste, draw air into collector containers, and capture CO₂ on a highly selective filter material. Once saturated, the containers are closed and heated to around 100°C, which releases high-purity CO₂. The air-captured CO₂ can then be stored permanently, for example, through underground mineralization. Or it can be reused as a raw material to produce carbon-neutral fuels and materials.

How can it help address climate change?

Reducing emissions is a key priority in solving the climate crisis but climate science clearly states that we also need to actively remove CO₂ from the air to limit global warming to 1.5°C. When combined with permanent storage, direct air capture is a carbon dioxide removal solution. It reduces the concentration of CO₂ in the atmosphere by removing the historic emissions that have built up in our atmosphere, as well as residual emissions that cannot be avoided. This is what Climeworks’ facility “Orca”, the world’s largest direct air capture and storage facility to date, does in Iceland.

How do you plan to take the solution worldwide?

We’ve seen strong market demand for the technology since Orca launched. Our next step is to scale up significantly and supply volume to the market. We’re already working on the next technology stage that will be operational around 2027. Our pioneering customers, both businesses and individuals, as well as increasing political action enable us to realize the scale-up potential of direct air capture. Most new technologies, such as solar photovoltaics, are more costly when they emerge, then fall in price later. There’s no doubt that direct air capture will follow the same path.

How does it complement nature-based solutions?

Different solutions offer different benefits. Direct air capture complements nature-based solutions because it is permanent, scalable and measurable. It removes CO₂ for thousands of years when combined with geological storage. It’s scalable because it uses a relatively small surface area and doesn’t compete with arable land. And because it’s a technology, we can exactly measure how much CO₂ our machines capture.



The natural way to combat climate change

Yishan Wong
Founder and CEO of Terraformation
& UBS Global Visionary 2022

Why did you decide to address climate change?

I spent years in Silicon Valley solving problems at scale. After leaving the tech industry, my mind soon turned to solving the biggest problem facing people today: climate change. As a problem-solving engineer and concerned person, I decided to focus completely on how we can solve this issue.

Why do you focus on nature-based solutions?

As I first began to explore climate solutions, I did the nerdy engineer thing and spent a lot of time researching solutions. That's how I discovered reforestation. In direct comparisons, reforestation is significantly more effective than technology-based solutions.

Its carbon capture potential is enormous. Conservative estimates put the carbon drawdown potential of global forest restoration at over 10 billion tons of CO₂ every year. And that has the potential to be much more. It's low cost (the global average cost of restoring an acre of forest is around 1,000 US dollars), and maintenance costs decrease over time.

It's also very well-tested and low risk. There are about three trillion trees on the planet today. These trees already absorb one-third of all annual fossil fuel emissions. And it's scalable. Reforestation doesn't need sophisticated technology. We've been planting trees for a long time. While there are barriers to massive global reforestation, we now have low-cost tested solutions that can be rapidly deployed worldwide.

How are you achieving this?

Massive global reforestation – at the scale required to reverse the effects of climate change – is an enormous undertaking. We've learned lessons from rapidly growing tech companies and applied them to solving the issues that slow down reforestation. Right now, we're focusing on supplying seeds. To plant a trillion trees, we need two to three trillion seeds. And they can't just be any seeds – they need to be from the right species.

Our focus this year is to build and deploy seed banks around the world. This will enable reforestation projects to work with the right seeds for the local environment, and to scale quickly.

What other factors are important?

We can tell whether a reforestation project will be successful by how involved the local community is from the start of project planning. The key is to understand forests as biological and human systems.

What does success mean to you?

Success is having one trillion new trees on Earth by 2030. But it's also much more than that. Replanting forests globally involves training and employing millions of seed collectors, seed bankers, nursery managers, foresters, researchers, and more. So success also means that we create a flourishing new green jobs sector. This will create new economic opportunities through revenue streams from the forests

(such as agroforestry; sustainably harvesting medicinal products; and new research). To succeed, we need green and regenerative investment opportunities that can provide the capital required to grow and sustain forest projects.

The biggest proof of our success will be the world having very different climate conversations in ten years' time. Instead of gloomy predictions, we'll be having aspirational conversations about just how far we can go to restore our planet.



03.3 How to address the energy transition as a philanthropist

The energy transition refers to transforming the global energy sector from a fossil-based to zero-carbon industry by 2050. To achieve this, we must address many issues – including reducing energy-related CO₂ emissions.

Energy systems can refer to everything from national electricity grids that power homes and businesses to the fuel we use for personal transport, the energy that industry uses, and how people cook in the developing world.

Clean innovative energy technologies will drive the changes. But innovations will also come from unexpected places, such as how we design and build our future cities. What's more, to achieve a sustainable energy transition, many communities in the developing world will first need to address the issues of energy poverty and a lack of access to energy.

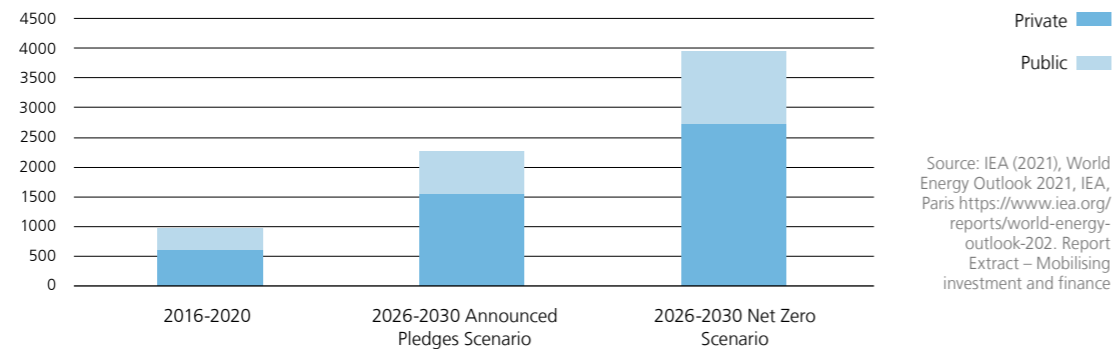
Did you know?

759 million people lack access to electricity – and 75% of them live in sub-Saharan Africa.⁸³

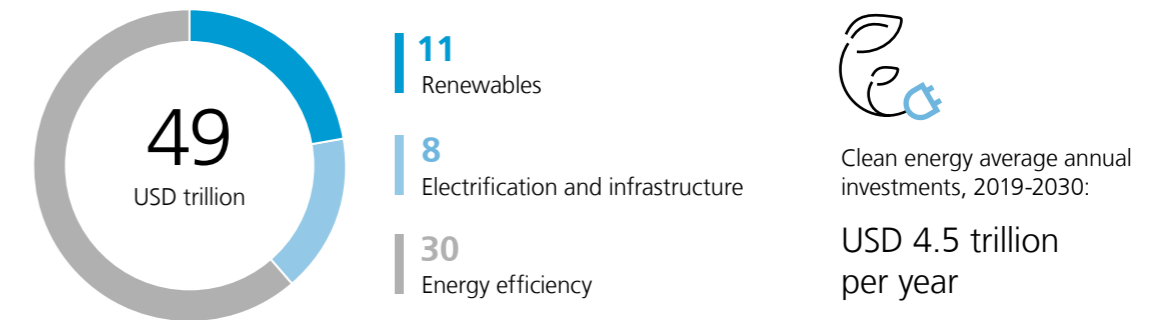
Transitioning to cleaner energy is expensive. The International Energy Agency (IEA) Net Zero Emissions by 2050 scenarios estimate that 70% of clean energy investments over the next decade need to come from private investors, consumers and financiers.⁸¹ Limiting the global temperature rise to 1.5°C by 2030 will require an increase of almost four trillion US dollars in clean energy projects and infrastructure – ever year. And emerging markets and developing economies will need 70% of this extra money to close the gap between the announced pledges and the net-zero goal.⁸²

In 2020, the world spent a record 501.3 billion US dollars on renewable power, electric vehicles and other technologies.⁸⁴

Annual average clean energy financing by source



Cumulative clean energy investments between 2019-2030 in the Transforming Energy Scenario (USD₂₀₁₉ trillion)⁸⁵



The energy transition encompasses many different dimensions. So it's essential that the public and private sectors collaborate on solutions.

Small communities in the developing world benefit when they have access to energy. And their environments benefit when that energy is clean and affordable, thanks to innovations like decentralized solar and off- or mini-grids. These solutions are often overlooked. But they have a big role to play in the energy transition – bringing empowerment, education, income and hope to communities.

⁸³ Goal 7. (2019). United Nations Department of Social and Economic Affairs. Retrieved January 24, 2022, from <https://sdgs.un.org/goals/goal7>

⁸¹ International Energy Agency. (2021). IEA Net Zero Emissions by 2050 Scenario (NZE). Retrieved from <https://www.iea.org/reports/world-energy-model/net-zero-emissions-by-2050-scenario-nze>

⁸² International Energy Agency. (2021b). Report Extract, Executive Summary, World Energy Outlook 2021. Retrieved from <https://www.iea.org/reports/world-energy-outlook-2021/executive-summary>

⁸⁴ Bloomberg – spending on global energy transition hits record 500 billion (2021). Bloomberg.

⁸⁵ IRENA Post-COVID Recovery 2020 - Scientific Figure on ResearchGate. Available from: https://www.researchgate.net/figure/Energy-transition-investment-under-the-Transforming-Energy-Scenario-2019-2030_fig1_342437817 [accessed 21 Feb, 2022]

Supporting the energy transition

Johannes van de Ven
Managing Director
Good Energies Foundation

Why should philanthropists address the energy transition?

The energy transition is at the heart of climate mitigation in order to get a net-zero, nature-positive economy rather sooner than later. In the context of developing countries, access to clean energy is a pre-condition or determinant for sustainable livelihoods, education and healthcare – and a key catalyst to lift people out of poverty.

That's where philanthropists can make a massive difference. A primary role of philanthropy is to accelerate tipping points, to experiment where there is no proof of concept, and to have a holistic view. Philanthropy is also well-placed to raise awareness on the devastating effects of air pollution, train policymakers on the benefits of low-carbon electricity, and build strong leadership.

The biggest stakeholders in a just and fair energy transition are the poor, because they suffer most from climate change. But we often misunderstand their energy needs. So we need to evaluate a just and fair energy transition more from the demand side, and not just the supply side. Governments and firms focus on the supply side by offering products. But philanthropists can focus on developing innovations from the demand side. This is where the role of philanthropy comes in, as it can provide patient capital to help the thinking process change from "business as usual".

How does Good Energies Foundation support the energy transition?

Philanthropy also has a role to play in underserved markets. Nearly one billion people globally have little to no access to electricity, and several billion still rely on dirty cooking methods. Good Energies' Clean Energy Program focuses on addressing the billions who use minimal energy on a per capita basis. Increasing access is part of ensuring that the global energy transition is also a just transition.

Our focus is not on the "what", as if a product can solve a systemic issue, but rather on building the ecosystem – working on the enabling conditions. We serve the people least responsible for, and yet most affected by, climate change. In rural India and sub-Saharan Africa, we support projects that harness renewable electricity to power jobs, education, health and a permanent end to poverty. We seek innovative technologies and work on getting proof of concept on distributed renewables, from small solar systems for a single home or business to mini-grids that power communities. And our non-profit and enterprise partners are providing solutions that people can afford.

For us, technology is a tool, not our ultimate objective. Our focus is primarily on people, starting with the needs and ambitions of people and communities living in energy poverty. We're not interested in solar power, or electrons – we're aiming for the benefits they can bring. This means we don't take a technology-first approach, pushing out machines invented far away from the people who will use them. All solutions – including technological ones – need to start with the ultimate user. When we look to build new businesses, we should challenge ourselves to find inventors and entrepreneurs who come from within the communities that benefit from distributed renewable solutions.



Nearly one billion people globally have little to no access to electricity, and several billion still rely on dirty cooking methods

03.4 How to address climate justice

Climate change will affect countries, communities and individuals differently. This reality has created a link between the climate crisis, human rights, social inequality and the concept of justice.

As the UN's Secretary General, António Guterres, said, "Climate change is happening now and to all of us. No country or community is immune... And, as is always the case, the poor and vulnerable are the first to suffer and the worst hit."⁸⁶

Climate justice once referred to differences between the industrialized world and less advanced regions. Now the term also refers to unequal climate change impacts on groups, such as indigenous people, communities of color, women and the disabled.

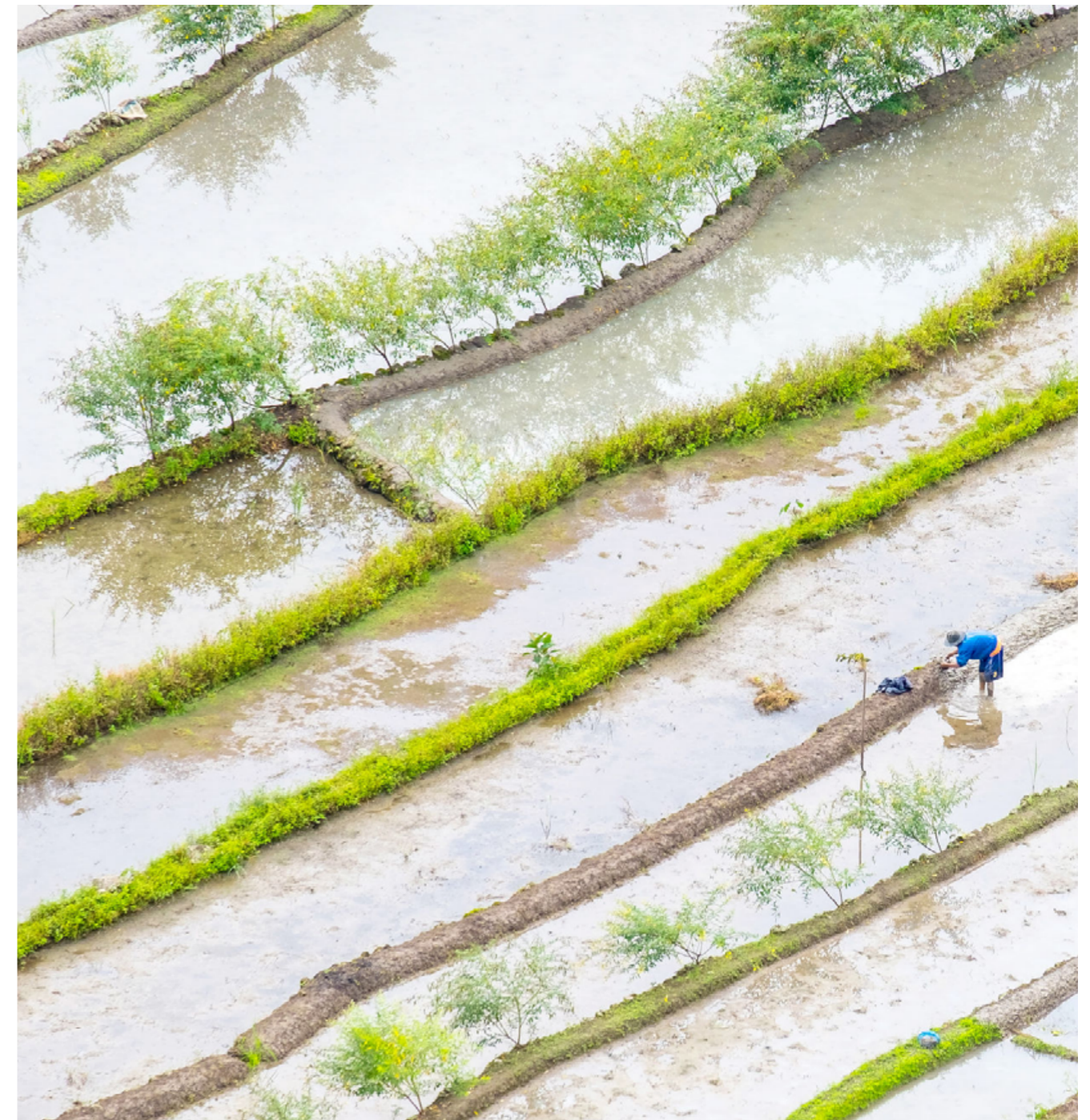
Climate change isn't just about the environment. It touches social systems, privileges and embedded injustices. And it unequally affects people of different class, race, gender, geography and generation.⁸⁷ It doesn't end there. Climate justice also refers to the unfair burden on future generations to solve the climate crisis.⁸⁸

Climate change and rising temperatures have increased migration. As the climate is changing, the regions that can support food production are shifting, and forcing people to move. In Southeast Asia, for example, where unpredictable rainfall and droughts make farming less productive, more than eight million people have already been forced to migrate to the Middle East, Europe and North America.⁸⁹ This highlights the fact that we live in an interdependent system. Just as pollution from one country affects others, all actions taken to abate and adjust to climate change will have consequences elsewhere.

Climate justice requires those who created the problem to fix it. The burden shouldn't fall on poor communities that contributed little to climate change, but are suffering most from its effects – for example, those living next to a coal-fired power plant, or a fishing community in Southeast Asia dealing with polluted waters and depleted fish stocks. This links closely to the concept of human rights: "Climate actions designed and implemented without respect for human rights risk undermining people's rights."⁹⁰

Philanthropists can address climate injustice in many ways, such as

- activism and raising awareness
- educating and providing skills that empower disadvantaged or uninformed communities regarding their rights
- supporting responsible policy making
- creating partnerships that fairly represent various groups.



⁸⁶ M. (2019, May 31). Climate Justice. United Nations Sustainable Development. Retrieved January 24, 2022, from <https://www.un.org/sustainabledevelopment/blog/2019/05/climate-justice/>

⁸⁷ Timperley, J. (2021, November 9). The world's fight for "climate justice." BBC Future. Retrieved January 25, 2022, from <https://www.bbc.com/future/article/20211103-the-countries-calling-for-climate-justice>

⁸⁸ Staff, C. B. (2021, October 29). In-depth Q&A: What is 'climate justice'? Carbon Brief. Retrieved January 25, 2022, from <https://www.carbonbrief.org/in-depth-qa-what-is-climate-justice>

⁸⁹ Lustgarten, A. (2020, December 16). The Great Climate Migration Has Begun. The New York Times. Retrieved January 2, 2022, from <https://www.nytimes.com/interactive/2020/07/23/magazine/climate-migration.html>

⁹⁰ Human Rights and Climate Change. (2020). Mary Robinson Foundation Climate Justice. Retrieved January 31, 2022, from <https://www.mrfcj.org/our-work/areas-of-work/human-rights-and-climate-change/>



Climate justice and women

Katherine Lucey
Founder and CEO
Solar Sister

Why does Solar Sister focus on the link between women's empowerment, energy poverty and climate change?

Climate change is a justice issue. Its impacts fall most heavily on the most vulnerable. While the impacts of climate change touch everyone, research shows they hit women and girls hardest. That disproportionate effect is due to existing vulnerabilities, a lack of economic opportunities, and a higher dependence on natural resources for their livelihoods and survival.

But women are not destined to be victims. Across the globe, women play an essential role in tackling climate change, including the daily choices that drive positive actions and impact. In communities in sub-Saharan Africa, where 600 million people still lack access to electricity, women manage the household energy choices. That can be anything from choosing to replace a kerosene lamp with solar technology, to cooking over a more efficient cookstove. When women control resources, they're more likely than men to use them to protect their families' health and finances. As Mary Robinson, former President of Ireland and renowned climate activist says, "Climate change is a man-made problem with feminist solutions."

How do you address climate justice?

It's one of the most powerful insights from our work at Solar Sister – that by opening up economic opportunities for women and honoring their wisdom, we positively impact women, their families, communities and the wider world. When women have more agency, they make better choices, including when caring for their families and communities. When they have their own income, they invest in better education for their children and healthcare for themselves and their families, and accumulate savings to build resilience.

For example, Nanbet is a young maize farmer and single mum raising five children in a rural Nigerian village with no electricity. There are no power lines there, but there is power. And it's Nanbet who is bringing it. She's one of 6,000 entrepreneurs (83% of which are women) we've trained and supported to run clean energy technology businesses. These entrepreneurs have reached three million people across Tanzania, Uganda and Nigeria with solar power and clean cookstoves.

Since Nanbet started her business, she's brought in enough income to stop laboring on other people's farms. She buys soap and clothes for her children, and says people see her differently. At the same time, she's fighting climate change and lowering household air pollution by convincing her customers to switch from harmful kerosene lamps and cookstoves to clean alternatives.

Local women are enterprising, creative and committed to improving the wellbeing of their families and communities. Centering women as leaders in the growing clean energy sector is essential to eradicating poverty and achieving sustainable solutions to the climate crisis and many development issues.

This is why Solar Sister invests in women's leadership and enterprise in off-grid communities. By engaging with women who deeply understand their communities, Solar Sister reaches people who have been missed by business-as-usual energy models.

How can philanthropy do more?

Only an estimated 0.2% of philanthropic funds goes towards women and the environment. Let's see if we can nudge that number upward.

Renewable energy is the golden thread connecting economic prosperity, social equity and environmental sustainability. Access to energy shouldn't just be for the wealthy. Everyone deserves access to clean energy, for their own wellbeing and the good of the planet.

Did you know?

The number of natural disasters driven by climate change has increased fivefold in the last 50 years. Although better early warning systems have been developed, when climate-related deaths occur, **91% of them are in the developing world, placing the costs in human life and loss of home in the hands of those who can least afford it.**⁹¹

A just transition – climate and social justice

Vivek Maru
Founder and CEO
Namati

What do you mean by climate justice?

The climate crisis is a justice crisis. In poor countries and rich countries alike, the harms causing climate change – including deforestation, fossil-fuel extraction and pollution – are concentrated in communities that hold less wealth and power, and face discrimination. An organizer and farmer, Hop Hopkins, said: “You can’t have climate change without sacrifice zones, and you can’t have sacrifice zones without disposable people.”

To find our way through the crisis, we must confront the injustice that makes it possible.

How are you solving the issue?

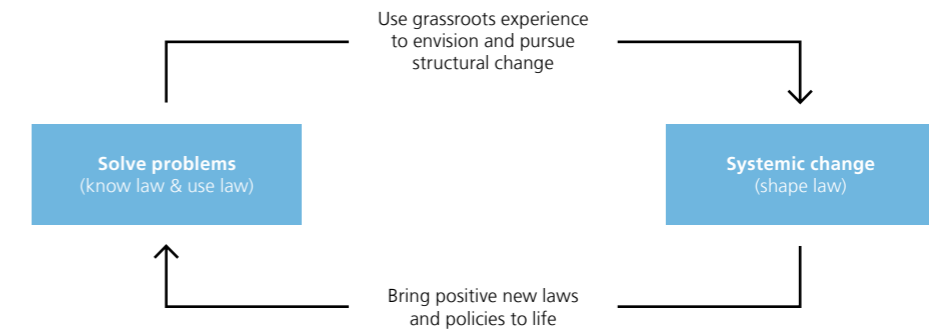
We work with community paralegals – people who know the law and help people exercise their basic rights. In hundreds of cases across five countries, including India, Sierra Leone, and the United States, we’ve seen paralegals and communities reverse environmental injustices. For example, they compelled a massive cement plant to comply with air pollution regulations. And they stopped an oil palm company destroying 75,000 acres of rainforest without the consent of the people living there.

Paralegals and communities come together to fight to improve laws and systems. In Sierra Leone, for example, parliament is considering a groundbreaking law that would grant every community the right to free prior informed consent over any industrial activity on their territory. That bill grows directly out of a decade of grassroots efforts there.

In Maryland, United States, an environmental justice coalition we help convene is now pursuing legislation that would direct investments in environmental clean-up, renewable energy, and climate change adaptation to communities at greatest risk.

When we win reforms, paralegals and communities breathe life into them by invoking them in the process of solving concrete problems. We call this the “legal empowerment cycle”:

Legal Empowerment Cycle: Know, Use, Shape



By supporting communities, we’re strengthening democracy, increasing resilience and accelerating the transition to more sustainable ways of living.

What tips would you give someone starting out on addressing climate justice?

Make sure the businesses you belong to or invest in respect the rights of communities who host their operations. For example, the Interlaken Group has produced practical guidance for companies to respect the land rights of local and indigenous communities.

Get involved with organizations working to advance climate and environmental justice. Namati co-convenes the Legal Empowerment Network, which comprises over 2800 justice organizations across 170 countries.



⁹¹ Weather-related disasters increase over past 50 years, causing more damage but fewer deaths. (2021, August 31). World Meteorological Association. Retrieved January 24, 2022, from <https://public.wmo.int/en/media/press-release/weather-related-disasters-increase-over-past-50-years-causing-more-damage-fewer>

How philanthropy can support resilient and sustainable food systems

Dr. Agnes Kalibata
President, AGRA (Alliance for a Green Revolution in Africa)

The recently concluded UN Food Systems Summit (FSS) and COP 26 emphasized the need for the world to consider food in the context of climate change; make food systems more inclusive and equitable; and address the links between agriculture, energy, nutrition, climate change and livelihoods.

In addition, today – in mid-2022 – we see climate change challenges exacerbated by increasing food and fuel prices and the inability for farmers to access fertilizers in meaningful ways.

Climate change will harm food availability and diminish food quality. The effects of climate change on food systems could push 122 million people – including 43 million Africans – into poverty in the coming decades (2022 IPCC Report). A report from the African Union in early March 2022 painted a bleak picture, with 49 countries not on track to end hunger by 2025, and only 15 countries on track to build resilience to climate change. Despite contributing only a minute amount of global greenhouse gas emissions, the African continent disproportionately suffers from climate change. Agriculture is critical to the continent’s economic growth. Climate change could destabilize local markets, increase food insecurity, limit economic growth, and increase risk for investors in the agriculture sector. By 2030, crop yields across the continent are projected to decrease by varying amounts. Southern Africa, for example, is expected to see rainfall decrease by 20%.

Climate change is not the only challenge that will impact food security in the near to mid-term – especially for the most vulnerable. Increasing food and fuel prices in 2022 have led to fertilizer prices increasing by 80% in the last six months. While the impact of this will have a lag time into next year, it is clear that crop production levels will decrease this year and have the potential to impact an additional 40 million people in sub-Saharan Africa.

To safeguard productivity and livelihoods for the long term, partners and resources must come together to help African countries adopt new systems and technologies and build resilience.

Philanthropy is key to these efforts. It helps boost public and private sector funding for development and can address the challenges we are seeing today.

More than ever, philanthropic organizations can help organizations like AGRA strengthen the resilience of farmers and farming systems.

For example, they can:

- help governments turn food systems pathways into practical solutions and investment
- encourage and unite partners to act collectively and at scale
- drive investments that enable farmers to rapidly adapt to climate change
- invest in equality, especially because climate change most affects the poor and marginalized
- advance market opportunities and strengthen regional trade to make communities and businesses more resilient.

03.5 How to add a climate lens to your philanthropy

Considering the climate in your philanthropy enables you to reflect on how it affects the people you support. These insights can then help you adapt and improve your programs. For example, if you provide educational opportunities for low-income people of color in the United States, you might also focus on areas with particularly high pollution. In those areas, children might be more prone to illness and missing school. This may lead to you looking at environmental solutions.

Climate change also disproportionately affects women, especially in low-income countries, who typically work in agricultural industries and vulnerable environments. If you’re focused on improving the lives of women, considering the climate might magnify your impact.

Did you know?

In April 2021, the United Nations High Commissioner for Refugees (UNHCR) released data showing that the number of people displaced by climate change-related disasters since 2010 has risen to 21.5 million. The report also stated that, “In addition to sudden disasters, climate change is a complex cause of food and water shortages, as well as difficulties in accessing natural resources.”

The Australian think tank, Institute for Economics and Peace, predicts that, by 2050, natural disasters and climate-related events could displace at least 1.2 billion people from their homes.⁹²



⁹² Ida, T. (2021, June 18). Climate Refugees - the world's forgotten victims. World Economic Forum. Retrieved January 27, 2022, from <https://www.weforum.org/agenda/2021/06/climate-refugees-the-world-s-forgotten-victims/>

Considering the climate:
the social enterprise
perspective

**Jennifer Waugaman
and Chris Bessenecker**
Co-founders, AfriScout
& UBS Global Visionaries 2022

Why is it so important for philanthropists to consider the climate?

Philanthropy can deliver the transformative change we need to reverse climate change. But less than 2% of global philanthropic giving goes to solving the issues. If this continues, climate change will exacerbate the problems philanthropists want to solve. Dealing with the problems will be more challenging and expensive. And many new problems will arise.

How did you start considering adding a climate lens at AfriScout?

AfriScout originally started as a climate adaptation tool for pastoralists: the indigenous livestock herders that steward grassland ecosystems in East Africa. The tool helps them become more resilient in the face of recurring droughts and changing climate patterns. We provide them with near real-time visual data on the state of vegetation and water in their lands.

Over the years, we've learned that this information doesn't just help pastoralists find pasture and water – it also helps them make smarter daily management decisions to optimize grazing patterns, restore pastures and fight land degradation. This has shifted our focus beyond climate change adaptation to promoting climate change mitigation.

A huge challenge has been a lack of investment in supportive structures for pastoralism and rangeland management. Misconceptions about pastoral livelihood practices have led to poor policies and investments which push for sedentary livestock production or crop-based agriculture. This threatens biodiversity in the grassland ecosystems that support the continent's most important wildlife.

The African Union considers pastoralism to be the most important and sustainable economic activity in the drylands, where conditions of poverty and vulnerability persist. With climate change threatening to trigger large-scale hunger crises, it's vital that we empower frontline communities like Africa's pastoralists. Climate change has hit them hard – but they are one of our strongest assets for securing food and mitigating the climate crisis.

What are AfriScout's goals over the next five to ten years?

We're increasing our commitment to helping indigenous rangeland stewards in Africa restore their landscapes through intelligent data. We will build more advanced artificial intelligence technology to better support daily herd management decisions that will improve soil and animal health.

For example, we're working towards stronger remote-sensing capabilities to determine the grazing readiness of pasture. These advancements will allow us to advise pastoralists on the areas requiring regeneration and rest, and to recommend optimal stocking rates. Providing more dynamic information like this will empower pastoralists to become smarter ecologists, increase their productivity and boost their livelihoods.

How do you think funders could consider the climate in their philanthropy?

There are many ways. Our top pick would be to invest in organizations that are building solutions for the climate, community and biodiversity. We believe the best place to do this is in the drylands. The International Union for the Conservation of Nature (IUCN) believes that better rangeland management (which includes sustainable pasture management) is one of the most cost-effective ways to mitigate climate change.

Additionally, the United Nations' Food and Agriculture Organization (FAO) has stated that improved pasture management is one of three main ways to substantially reduce emissions from livestock production. In fact, improved grazing management on global grasslands could sequester around 409 million tons of CO₂ equivalent every year – that's roughly 10% of annual carbon emissions generated by human activity (IUCN).



Adding a climate lens – a funder’s perspective

Florence Miller
Director,
Environmental
Fundors Network

Many funders now understand that applying a climate lens to their traditional philanthropy will further their core missions, whether that’s gender equality, health, economic justice, LGBTQIA+ or education. But what is a “climate lens” and why is it so important? Why should funders focused on other issues also care about the climate?

Applying a climate lens means recognizing that the climate crisis is as much a human issue as an environmental concern. It dramatically exacerbates current problems, particularly for those already disadvantaged by our current systems.

In other words, climate change intensifies the problems that philanthropy wants to solve. For example, increased temperatures are making some places hard or impossible to live in, for example, due to extreme weather and reduced food production. Millions are leaving their homes and struggling to access food, water, healthcare, safety and education. Young people, the elderly, women and girls are most affected.

But addressing climate change can tackle all these issues together. What would it mean to put fairness, justice and reverence for life at the heart of every decision we make?

How should funders approach tackling the climate?

Start at the place where the climate impacts on the area you’re passionate about. There’s no need to act alone or reinvent wheels – speak to other funders in that area. Networks like ours for environmental funders can connect you to others, and provide resources and advice. Consider joining one of the funder commitments on climate change (there are international and national commitments for foundations, and a UK commitment for individual donors). They’re motivating and give you frameworks to progress your giving, investments and operations. Most importantly, don’t delay – this is the decade when we must act.

What’s the outlook for philanthropists, foundations and corporate donors dealing with the climate challenge?

It’s shocking that climate giving accounts for only about 2% of total philanthropic giving. Fortunately, funding levels are starting to rise. Our recent research report showed that, after years of stagnation, UK foundation funding for environmental issues almost doubled over three years. There are signs this trend will continue. A mixture of things has increased concern among funders: for example, high-profile youth action on climate change, hard-hitting documentaries, and increasing news coverage of the issues.

Because of the closing window for effective action, I believe that the money funders spend on climate action now will be worth many times that amount in ten or twenty years’ time. We need every funder to recognize how climate change is harming their causes, and commit to taking action.



Building from the ground up

Harriet Lamb
CEO, Ashden

Only 5.8% of all UK philanthropic giving goes to climate and the environment combined. So while we have positive solutions to the issues, we lack the finance to scale them.

Philanthropy can be the spark that ignites grassroots change, supporting initiatives from young people, women or indigenous people, and building coalitions.

03.6 How to support policymaking and enforcement

Researchers have been monitoring climate change for decades. So there's ample evidence to help policymakers create effective environmental policies and laws. Philanthropists can also use this data to push for policy changes and government action. But how can you get involved in changing policies and laws for the better?

1. Support climate initiatives and campaigns.

Several global campaigns bring partners together to work towards a common goal. For example, the "Breathelife" campaign connects cities, promotes new solutions and helps local governments implement those solutions in their own cities.⁹³

2. Support advocacy groups.

Advocacy groups help community members change policies and laws by directly lobbying government and policymakers. For example, Climate Action Network has more than 1,500 civil society organizations in over 130 countries driving change collectively.⁹⁴

3. Support coalitions and networks.

Coalitions and networks bring diverse people together to focus on issues. For example, the Climate and Clean Air Coalition brings governments, intergovernmental organizations, businesses, scientific institutions, and civil society organizations together to improve air quality and protect the climate.⁹⁵

4. Support local organizations.

Local non-governmental organizations help communities understand the climate change risks they face. They also use powerful and persuasive evidence to influence new policies and compel governments to act.

5. Make your vote count.

Your vote elects the official you think will act on climate change. So choose carefully and make sure you're picking a leader with the policies and determination to make a difference.

"Government policy is one important means of system change – including laws, rules, regulations, standards and incentives. But many climate change policies, from the local level to the global level, flounder on the lack of "political will" – the unwillingness or inability of government officials to enact policies that will reduce carbon pollution at the scale and speed required. Public will, especially as expressed through citizen activism, is an important influence on the policymaker process. Strong public demand increases the likelihood that governments will prioritize climate change action."⁹⁶



⁹³ Breathelife2030. (n.d.). Breathelife2030. Retrieved February 16, 2022, from <https://breathelife2030.org/about/>.

⁹⁴ Climate Action Network. (n.d.). Climate Action Network. Retrieved February 16, 2022, from <https://climatenetwork.org/>

⁹⁵ Climate and Clean Air Coalition. (n.d.). Climate and Clean Air Coalition. Retrieved February 16, 2022, from <https://www.ccaalition.org/en/content/about>

⁹⁶ Leiserowitz. (2020). Building Public and Political Will for Climate Change Action. Yale School of the Environment. <https://environment.yale.edu/news/article/building-public-and-political-will-for-climate-change-action>

Change at warp speed

Peggy Liu

Chairperson of Joint US-China
Collaboration on Clean Energy
(JUCCCE)

What can philanthropists do to act on climate change?

My biggest piece of advice is to select and support future-oriented nurturing people who can collectively create a better future. For example, you might invest in three-year scholarships to support working fulltime on-the-ground with a mentor like me. Like in venture capital, I would shift the focus from supporting projects to investing in people who can lead transformative change.

What is “Tornado Leadership”?

It’s the title of my second book, which I’m currently writing. It involves making a shift in societal culture to bring in a better future faster. As an environmentalist in China, I’ve catalyzed six country-wide shifts with my team at JUCCCE. Each societal shift reached a trigger point in three years. I’ve seen that warp-speed change as a collective is possible – if we use my framework of treating movements like forces of nature.

With disrupters like pandemics, climate change and droughts threatening our civilization, we don’t have time to build brick by brick, or even to rely on the exponential problem-solving speed of machines. We need warp-speed change in our collaboration culture.

How is China working towards changing its environmental policies?

China has done in 20 years what some countries do in 200. The country thinks about the future it wants, then works backwards. China doesn’t just incrementally build on the past or get stuck in debates. It leapfrogs. For example, in 2015, China threw out a past environmental law that was not much of a deterrent, and put in place a law that not only charges large daily fines for polluting enterprises, but holds executives liable for criminal neglect. Since its first major climate change policy plan in 2007, China has frequently and continuously released new environmental policies, and made trillions of dollars of investments and incentives towards a greener China. It shows courage and will of the leadership.

Could you give an example of how Tornado Leadership works?

Ancient Hawaiians had a sophisticated ecosystem of shared stewardship (Ahupua’a) before colonialists took the land and privatized it into puzzle pieces. Consider rain falling on a mountain, then flowing to the sea. In this system, nature was abundant. You never worried about how much water you take from the streams. You were only concerned with how much water you’ll give to your neighbor downstream. I’m an advisor to the head of state for the Nation of Hawaii, which is an indigenous and sovereign nation on 45 acres of land in Oahu. We’re building the nation from scratch. Our work starts at a higher level above policies, economy, housing, agriculture and energy. We tap into indigenous wisdom to embrace a greater purpose: “Aloha Spirit”.

I help the Nation of Hawaii accelerate its development – basically launching a “multi-vortex tornado”. I bring in particles to the tornado: world-class experts who are aligned with the future vision of the Ahupua’a. And I teach the team how to keep the tornado spinning to reach our vision faster. Tornado Leadership

shifts culture in many ways. People learn how we are interdependent. They see their roles in co-creating the future as an energetic “tornado spinner”, rather than part of a logical planning process.

How do you work with people and the government?

All groups, whether business, government, or communities, need to acquire tools to keep up with the pace of change. The systemic changes I led in China were at “gigascale” (1.4 billion people) and happened at “gigapace” (within single-digit years). This was unimaginable a couple of decades ago. Tornado Leadership teaches future-oriented people how to lead change, rather than to be affected by change.

There are 12 steps that need to be taken over the course of three years, covering “Launching the Tornado Movement”, “Strengthening your Movement”, and “Harnessing Tornado Energy for Societal Shift”. In China, the national slogan “China Dream” was a JUCCCE project that encompassed many workshops, advertising and press to build momentum of a concept that our reimagined prosperity should build in environmentally friendly living.

In Pakistan, I worked with a couple of government think tanks to lead a workshop on reimagining the “Pakistani Dream” for 2047. I’ve also led projects for Danone and Unilever to create products and campaigns that inspire societal shifts.

What’s the biggest challenge we’re facing right now?

Launching a “Tornado Movement” requires a future-oriented, courageous person to dream fully, like James Cameron creating Avatar’s Pandora world, or Willy Wonka and his Chocolate Factory. That’s audacious and boundless dreaming. But many communities and countries are so traumatized (especially indigenous), they’ve forgotten how to dream. They don’t think people will listen or help. They don’t believe their dreams matter. So they stop dreaming altogether.

With Tornado Leadership, I show how the shortcut to the future actually lies in immersing yourself in the future and reverse-engineering the path – in full technicolor detail.

What’s the one thing the world needs right now?

Awareness of how we are all interconnected and interdependent. People now have the illusion that we can isolate and protect ourselves from the dangers of the world by living in a gated community, in our own house, and not socializing with people outside our tribe. The truth of reality is that we are much more influenced by the emotions of people than we know.

Making better policies

Glenn Pearce-Oroz
Senior Director of International
Relations and Special Projects
Sustainable Energy for All

Many countries have announced net-zero targets or made political commitments to climate action. The next step is to put the right policies in place to achieve those targets. Advocates should tie their efforts to governments’ publicly stated political commitments and help them succeed. But, especially in developing countries, a lack of data limits the ability to inform new policies. So it’s vital we fill that gap. Providing credible on-the-ground partners that governments trust will help put policy reforms on the right track.



How Bangkok is tackling the crisis

Singh Intrachooto Ph.D.
Head of Creative Center for Ecodesign, Kasetsart University Architecture and Chief Advisor, Research & Innovation for Sustainability Center (RISC)

How is climate change affecting Bangkok?

We've had flood problems for decades, and for the past three to four years, salt water intrusion, which impacts beyond fish habitats. For example, plant nurseries in central Thailand are struggling. To make a living, plant nursery owners and farmers need to buy fleets of tanks to store fresh water, and technologies like reverse osmosis purifiers.

Businesses in inner Bangkok are also suffering from salt water intrusion, such as coffee shops which lack access to fresh water. Businesses are using reverse osmosis machines and investing in technologies to sustain their business. International companies are moving away from flood-prone areas in central Bangkok – often to other countries.

Flood is now common with every rainfall. And we're losing land around the gulf of Thailand to sea level rises.

How is this all affecting the population?

The population is unhappy. People are complaining about the constant flooding. Many are moving away. And street demonstrations are happening more often. In recent months, Thailand's temperature has sunk to 15 or 16 degrees, while the normal temperature during this period should be around 25 to 29 degrees. We also recorded unusually high rain fall during February. All this is due to climate change.

How can Bangkok mitigate those risks?

The government launched a new development policy focused on a bio circular green (BCG) economy. This will involve universities, academia and the private sector working together on the issues. Many industries are also creating frameworks to address climate change. For example, in real estate, some companies have developed resilience frameworks to address the impact of climate change.

Today, home owners have many environmental concerns. Property developers need new flood-protection plans, air-filtration systems, energy-recovery systems and more. However, despite these investments, property prices aren't increasing.

What will this mean economically for Bangkok?

Businesses are suffering. People are suffering from losing their incomes. Food prices are rising – and will continue to rise until people can't afford to pay for basic needs and housing.

What can the government do?

The government should base its decisions more on environmental needs than economic feasibility. For example, the BCG policy involves creating a circular economy hub. But there are no concrete steps to make that happen. It's essential we have one, if the government wants to put the circular economy at the heart of Thailand's future. We also need more funding to develop innovative technological solutions.

What else needs to be done?

We need a long-term national plan for combating climate change. It should highlight the key problems – and direct innovations and funds towards solving those problems.

Industry is taking charge and addressing climate change on its own. Everyone has to play a role in their own way. For example, the real estate sector is making sure future properties can withstand climate shocks and stresses. Academia is educating people about sustainability and developing novel solutions. Governments must support these efforts, and focus on larger plans to protect the environment, such as national parks and biodiversity.



03.7 How to support climate education and research

The World Health Organization said, “Climate change is the single biggest health threat facing humanity”.¹⁰⁰ However, many people find the risks meaningless to them, which results in a lack of action. So educating and researching the issues will be vital in the fight against the global climate crisis. But where to start?

1. Support climate literacy.

Campaigning and advocacy from Fridays for Future’s dynamic global student movement has spurred over a million young people to push for immediate action on climate change. It’s essential for everyone to understand their role in climate change and take informed actions. For instance, education can teach children about best environmental practice and sustainable consumption, and help them appreciate why it’s so important to protect nature.

2. Support the science.

Delays in reducing pollutant emissions will mean we fail to maintain global warming below two degrees, and result in consequences like rising sea levels, insufficient nutrition, and poor access to healthcare.⁹⁷ Governments need to create supportive frameworks for climate action, and to encourage businesses and individuals to implement climate-friendly processes. Scientists and research institutions need more support bridging the gap between their research and new government policies.⁹⁸ Research agencies must pool their resources to maximize results. These results will inform policies, programs and practices – and ensure research underpins everything we do.

3. Invest in research.

This might seem unglamorous compared to practical solutions like planting trees, building solar plants or protecting nature reserves. But research is the foundation of all our efforts to create a sustainable world. To help you decide where to focus your efforts, it’s worth looking at research in your area of interest.

Did you know?

“The climate crisis threatens to undo the last fifty years of progress in development, global health, and poverty reduction, and to further widen existing health inequalities between and within populations.”⁹⁹

¹⁰⁰ Climate change and health. (2021, October 30). WHO. <https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health>

⁹⁷ Why we need to act now. (n.d.). Climate & Clean Air Coalition. <https://www.ccacoalition.org/en/content/why-we-need-act-now>

⁹⁸ Independent Group of Scientists appointed by the Secretary-General, Global Sustainable Development. (2019). Report: The Future is Now – Science for Achieving Sustainable Development. Retrieved from https://sustainabledevelopment.un.org/content/documents/24797GSDR_report_2019.pdf

⁹⁹ Climate change and health. (2021, October 30). WHO. <https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health>



Creating a climate breakthrough

Prof. Koh Lian Pin
National University of Singapore

What's been your breakthrough discovery on the climate?

I think my work on the potential of nature-based climate solutions was particularly important. Our team showed that forest carbon projects financed through nature-based carbon credits could significantly protect biodiversity and mitigate climate change – while providing a return-on-investment of 46 billion US dollars a year. Most of those profitable sites are located in the Asia-Pacific region.

Efforts to preserve natural ecosystems have often struggled against intensive agriculture, forestry and other lucrative land uses. But carbon finance is slowly shifting economic tides. Not cutting down trees makes increasingly good business sense from a carbon-finance perspective.

Why is climate action research so important?

Addressing climate change requires far-reaching changes in human societies and economies. It requires us to overhaul food systems; how we manage natural environments; and how we make, use and transport energy and goods.

Solutions to avert the most dangerous impacts of climate change exist today. But how can countries and businesses adapt those solutions to their local needs, and avoid widespread disruption?

Solid science is the answer. Research plays a vital role in finding workable solutions and exploring how to implement them in socially acceptable, environmentally responsible and economically viable ways. For example, science can explore how best to reskill fossil-fuel industry workers to ensure they're not left behind. As industries start their journey to net-zero, science will find novel and innovative technologies. And research can help countries protect and restore their precious natural ecosystems.

Which areas should research focus on to find new solutions?

To encourage action, we need to research all areas, such as energy, waste, transport and agriculture. But nature-based climate solutions are arguably an area where research can make a huge difference.

Research has estimated that these solutions can provide over one-third of the cost-effective climate mitigation needed by 2030 to achieve the Paris Agreement's goal of limiting the global average temperature rise below 2°C. The solutions provide multiple benefits to society, including clean air and water, flood protection, food security, and livelihood opportunities. However, less than 3% of global climate finance currently flows towards these solutions, largely due to challenges setting them up. Research will help overcome those barriers and unlock nature's potential.

How to engage with children and students on climate change

Angela Serratore
Program Manager Climate School
MYBLUEPLANET

How to engage with teachers, so they can address climate change with their students

Djian Sadadou
Communications & Communities Officer
Office for Climate Education

Why is climate education important? And from what age should we teach children?

Angela Serratore: Climate education is essential to prepare society for the challenges, and to show people how to adopt sustainable lifestyles. The climate school program provides children in kindergarten with experience-oriented educational activities. It's an important age to start, because young children usually have a very strong connection to nature.

Djian Sadadou: The international community recognizes that educating the next generations on climate is a priority (for example, article 12 of the Paris Agreement). We focus on educating young people aged 9 to 15.

How can education systems make citizens more aware of the climate? And what role should parents play?

Angela Serratore: Education and awareness drive behavioral change. So the education system must raise students' and teachers' awareness, transfer knowledge and know-how, and anchor it all in school structures. We can use creativity and innovation to create solutions which ultimately become part of the whole system. Parents also need to support and encourage their children and school in tackling these topics.

Djian Sadadou: Education systems are essential for awareness because they train the next generations. Teachers have the balancing act of teaching children about climate-change challenges while promoting a positive vision of their future. We need to help teachers learn more about climate-change issues and familiarize themselves with specific approaches: for example, inquiry-based science education, critical thinking and project-based learning. Parents play an essential role too. They're powerful allies in amplifying the learnings their children acquire in school.

What results have you seen? How do you measure them?

Angela Serratore: Children and juveniles are curious and enthusiastic. Using head, heart and hand in harmony, we can create a lasting impact. Our practical and experience-oriented activities enable young people to enjoy unique experiences and make memories that last a lifetime. Through interviews and questionnaires, we've found they appreciate this approach and the practical relevance to their lives.

Djian Sadadou: We're always in contact with teachers on the ground. We've seen that teachers and students are eager to use our resources on climate change. For teachers who often lack time and a scientific background, our resources are a trustworthy source of scientifically sound and ready-to-use class activities. Students feel empowered by the knowledge they gain, which is essential in helping them develop what we call "a critical mind with a hopeful heart."

What challenges do you face? And how do you overcome them?

Angela Serratore: The big challenge is breaking down complex topics to a level that's clear and exciting. However, our project team believes that there's not necessarily a lack of knowledge, but a lack of action in society. So we need to listen to individual needs, motivate, and create opportunities for people to take action. We achieve this through practical and experience-oriented activities – and they're a lot of fun.

Djian Sadadou: The first challenge is the absence of climate-change topics in most school curricula. Secondly, school systems are often organized according to disciplines, especially at secondary level. But we know that climate change education needs an integrated interdisciplinary approach. Lastly, students can sometimes develop "eco-anxiety." To overcome these challenges, we:

- help education systems and policymakers integrate climate change into school curricula
- develop educational resources and activities that promote active teaching methods, and an interdisciplinary approach to climate change education
- propose concrete projects and actions for classes that help the next generations think about and build towards a resilient future.





04 Looking beyond traditional philanthropy

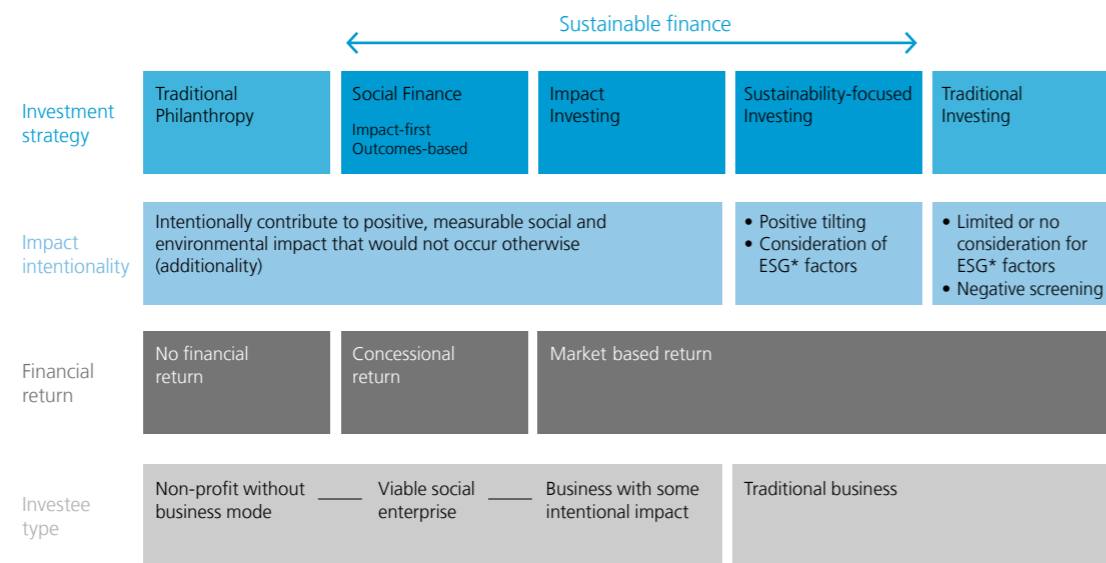
Philanthropy alone can't solve the problems addressed in the UN's 17 Sustainable Development Goals. To spark transformational change, scale innovative solutions and fill the climate funding gap, we need to mobilize capital across many sectors and funding channels, including philanthropy, public financing, and private investments.

This section looks at some of the ways innovative financing can address climate change.

04.1 Innovative financing

Social finance is all about investing to achieve measurable positive social and environmental outcomes – while generating financial returns for the investor. It incentivizes and rewards results. And it's becoming increasingly popular among investors who want to make a difference.

Its rise is driven by a growing recognition that to solve the world's most complex social and environmental challenges, traditional investors need to focus more strongly on impact. Significant climate and environmental results often require long-term funding to achieve long-term goals. Philanthropic capital can act as a catalyst, launching new businesses and solutions, and attracting more funding from the private and public sectors once results are proven.



*Environmental, Social and Governance

Early-stage start-ups with innovative ideas might not qualify for traditional funding. However, they might be eligible for a **program-related investment (PRI)** from a foundation. A PRI allows funders to invest in innovations with the possibility of making a big impact and receiving financial returns. For example, you might invest in an entrepreneur who wants to build a prototype machine that converts compostable food supplies into clean fuel.

Development impact bonds help proven programs scale up their solutions. Private investors provide the capital, then when a program achieves its goal, private donors pay out an agreed sum. Philanthropists can also use tools like **loan guarantees** to help entrepreneurs secure capital. Additionally, there are opportunities for philanthropists to work with the public and private sector to bring solutions to market.

How does innovative financing work in practice?

Costa Rica's Payments for Environmental Services Program (PES), for example, is a financial mechanism that conserves forest ecosystems and combats land degradation. It's an example of blended financing – because it's funded through Costa Rica's fuel tax and water charge, its own initiatives, carbon credits, and alliances with the public and private sector.¹⁰¹

Another example is the C40 Cities Finance Facility (CFF), which provides access to finance for transformative urban infrastructure projects. The CFF is helping cities in developing and emerging economies develop finance-ready infrastructure projects. Twenty projects are projected to cut over 1.8 million tons of greenhouse gas emissions over 30 years, and will leverage 650 million US dollars of investment in climate-proof urban infrastructure.¹⁰²



¹⁰¹ United Nations Climate Change. (n.d.). Payments for Environmental Services Program | Costa Rica. United Nations for Climate Change. Retrieved January 27, 2022, from <https://unfccc.int/climate-action/momentum-for-change/financing-for-climate-friendly-investment/payments-for-environmental-services-program>

¹⁰² C40 Cities Finance Facility. (n.d.). C40 Cities Finance Facility. Retrieved February 16, 2022, from <https://www.c40cff.org/>

Switched on to innovative financing

Bill Tai
Venture capitalist and founder,
ACTAI Global

How did you start working in innovative financing?

I've been a venture capitalist since 1991. Before that, I was involved in a silicon chip startup in the formative wave of Silicon Valley in the 1980s. I spent decades applying a simple formula of leveraging technology to make solutions easier to use, highly replicable, and highly scalable. I wanted to apply that formula to benefiting our planet and the environment.

What role can innovative financing play in climate philanthropy?

Current models are broken because it's hard to see immediate results. I believe the best approach is to build companies that align profit with positive social and environmental outcomes.

What's the role of technology in climate action?

Around 10 years ago, my non-profit, ACTAI Global (www.actai.global) started a tech competition that's become the world's largest startup competition focused on positive impact and sustainability – the Extreme Tech Challenge (www.ExtremeTech-Challenge.org). It leverages the United Nations Sustainable Development Goals (SDGs) and draws thousands of companies and a lot of resources for the winners to fuel and grow their impact-driven businesses. Tech can lower the friction to great solutions and scale them rapidly.

How do you decide which projects to invest in?

The word "sustainability" means many things to me. I want to see companies providing products and solutions that are "sustainable" for the planet – but that can also grow commercially and be "sustainable businesses" for the long-term, without having to rely on handouts. So I look for great entrepreneurs with products and services that can meet current market needs and become big along the way. If they succeed commercially, have "positive impact" as a goal or byproduct, and scale up, they maximize that impact.

Nature for climate:
Investing for a better world

Marianne Kleiberg
Regional Managing Director Europe
The Nature Conservancy

Right now – today – we have a critical opportunity to take bold action against climate change and biodiversity loss, and shape a brighter future for people and our planet. Philanthropists, impact investors and private enterprise all have essential roles in this transformation.

Whether forests, freshwater, arable land or oceans, nature is an asset we can invest in and create benefits for our communities, businesses and economies. New approaches that leverage science, policy and finance can make impacts at far greater scale, launch new collaborations and influence how others contribute to a healthier, more sustainable world.

04.2 Investing to address climate change

Investing can mobilize private capital at scale to combat climate change. Sustainable investing has emerged as a preferred way for people and businesses to align their investments to personal values. It takes two main forms: impact investing and sustainability-focused investing.



Impact investing

Impact investing aims to help fill the financing and resource gaps to achieve the UN's Sustainable Development Goals. Investors often add sustainable and impact investments to their diverse portfolios, which aim to achieve financial returns and sustainability goals.

The approach aims to intentionally contribute to positive, measurable social and environmental impact that wouldn't occur otherwise. The investor engages directly in helping a business achieve impact by delivering capital, stewardship, engagement, networks and expertise. Impact investors look for viable businesses focused on solving climate change challenges. They also seek to influence change by becoming active shareholders or bondholders in natural-resource-intensive businesses.



Sustainability-focused investing

Sustainability-focused investing differs from impact investing in that the investor isn't engaged in driving impact. However, they send a powerful signal to other market participants that sustainability matters, for instance, by investing in businesses that actively address environmental, social and governance issues in their operations, supply chains and products. Investors might look for businesses in resource-intensive sectors that aim to reduce their carbon footprint or get energy from renewable sources. Investors can also focus on technology and industrial companies that provide climate solutions.

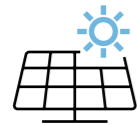
Sustainability-focused investing and impact investing are still investing: they both aim to earn financial returns that are comparable to the overall market. This means that not every climate solution might be eligible for investments. For example, a technology that doesn't scale or a company that doesn't have a sound for-profit model would likely be better financed from philanthropic or social finance capital aimed solely at achieving impact.

Investing in renewable energy and carbon capture



Investing in renewable energy and carbon capture is vital. Renewables reduce carbon emissions and provide future generations with stable clean-energy infrastructure. The cost of wind and solar-generated electricity has decreased over the years, making it more accessible to companies and households. New technologies, such as biofuels and green hydrogen will minimize our reliance on fossil fuels for transport and industrial power. Carbon capture technologies are showing promise. Although they're not necessarily at scale today, they could prove invaluable in tackling unavoidable greenhouse gas emissions.

Investing in energy efficiency



According to the International Energy Agency (IEA), energy efficiency could contribute as much as 48% to global emissions reductions by 2030. In recent years, various academic studies have indicated that energy efficient power generation, heating and transport solutions can help limit global warming to 1.5°C. Improving energy efficiency has far-reaching impacts beyond energy savings. These include improved air quality, health and wellbeing; reduced costs; and greater productivity.

Investments often address technologies for “smart” energy-efficient buildings (for example, those with intelligent systems that manage lightning, heating and cooling); smart grids; improved industrial process technologies that minimize energy waste; cloud computing; and information technologies that aggregate and minimize electricity consumption.

Investing in smarter mobility



Sustainable transport in cities can:

- improve safety, for example, reducing deaths through autonomous driving
- reduce local pollution through electrification and more fluid traffic flow
- improve social inclusion through autonomous driving
- reduce resource use and pressure on road infrastructure through shared mobility.

Sustainable investments often focus on real-time traffic systems, electric vehicles, battery storage technologies and car-sharing business models.

Investing in tackling waste



We currently waste around 30% of all food globally. This costs one trillion US dollars a year, and consumes a vast amount of natural resources in growing, producing and transporting food. Plastic packaging volumes are expected to more than quadruple by 2050. We will have more plastic than fish in the sea, jeopardizing biodiversity and the whole environment.

Investments to address the issue of waste include:

- waste minimization technologies (such as smart meters for electricity, water and food waste) that help change behaviors
- equities and bonds of waste management and recycling companies
- solutions for efficient agriculture (for example, vertical farming and smart irrigation systems).

Investing in green bonds



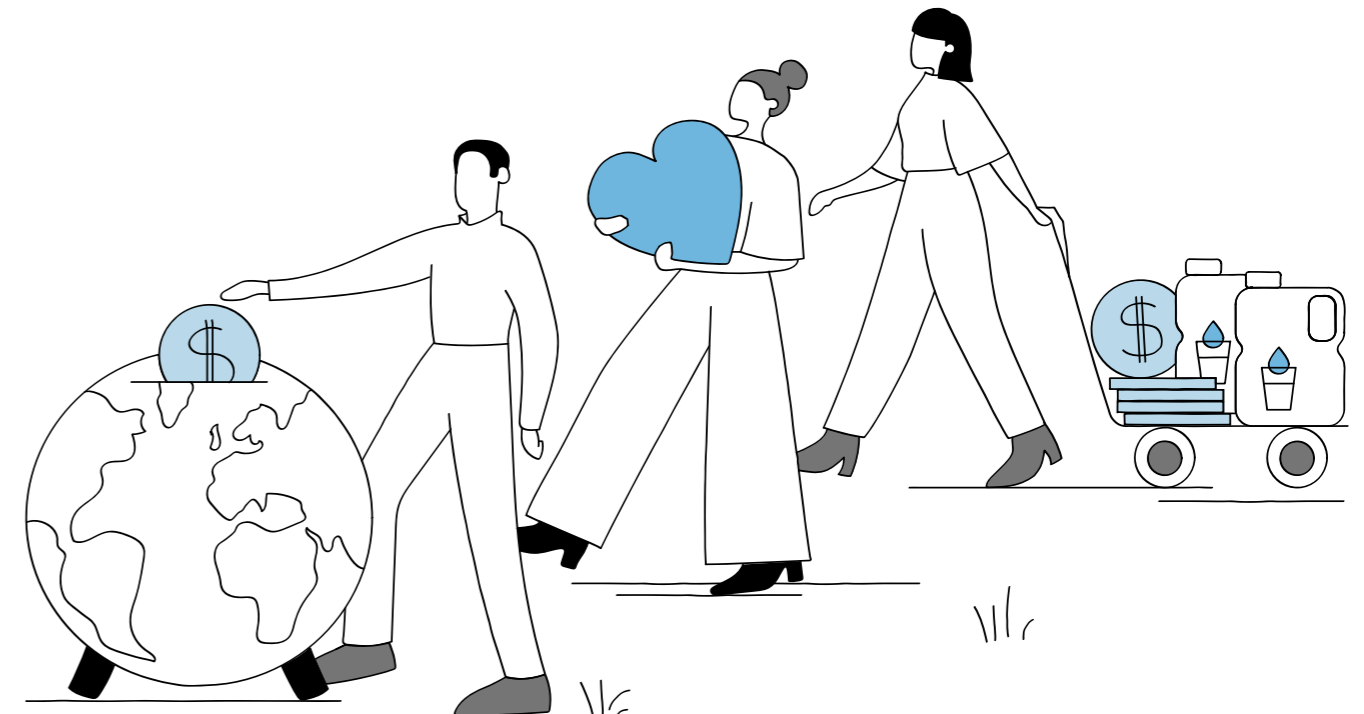
Companies and governments issue green bonds to attract finance for projects with environmental objectives. The proceeds of green bonds are used exclusively for the project, and investors receive regular reports on their investments. They provide companies with the capital they need to transition to a low-carbon path.

Engaging on environmental objectives



Investors can use their influence as shareholders and bondholders to drive positive environmental change in companies – particularly those that are economically important but polluting. When it comes to encouraging change, engaging with polluting companies has become more popular than divesting from them. For example, a conventional energy company might already have the expertise, resources and networks it needs to diversify into renewable energy.

Private investors typically use fund vehicles to engage with such companies. Asset managers often have the significant resources needed to own more of the companies, and dedicate entire teams to engage with them.



On a mission

Justin Rockefeller
Rockefeller Brothers Fund
and The ImPact

What does the Rockefeller Brothers Fund do, and why did you get involved in mission-aligned investing?

My grandfather and his four brothers created the Rockefeller Brothers Fund (RBF) in 1940. Its mission is to advance social change and create a more just, sustainable, and peaceful world.

About half of our charitable giving fights climate change. Step one was divesting from fossil fuels, and step two is ongoing: aligning our endowment with our mission. We were fighting climate change, but 7% of our endowment was invested in fossil fuels, which was contradictory. We felt that the nearly unique tool of the surname attached to the foundation and its historical ties to the fossil fuel industry afforded us the opportunity to bring attention to the divest-invest movement.¹⁰³ And symbolism matters: when a foundation fighting climate change invests in fossil fuels, it's akin to a foundation fighting cancer investing in tobacco. It was a good financial decision, but we also did it for symbolic and moral reasons.

How important do you think collaborations are in protecting the planet?

They're vital. The primary reason homo sapiens emerged as the dominant species is because of our ability to collaborate. It's like the old expression: "If you want to go fast, go alone; if you want to go far, go together." For every problem that bothers you, there are talented people already working on it. Rather than reinventing the wheel, trade notes with families on a similar journey.

A few families and, I thought, impact investors needed their own version of "the giving pledge": a safe place for families to collaborate and share resources. That's what The ImPact is: a non-governmental organization that enables people to collaborate, and to make more impact investments more effectively. Our collective purpose is to increase the probability and pace of solving social and environmental problems by increasing the flow of capital to investments that generate measurable impact. Our members work collectively to influence the behavior of institutions to raise standards for sustainable investment activity throughout the market.

Rockefeller Brothers Fund supports sustainable development initiatives. How do you see the blending of business and philanthropy as critical to bringing change in the climate?

The private sector needs to be a big part of the conversation. Most governments have been too slow to react, and the non-profit sector doesn't have the scale to address the problem fully; however, it has a real role in proving models and filling gaps in the market. Capitalism, while largely responsible for exacerbating climate change, is now the only tool with the agility and scale to address the issue. Depending on the nature of the challenge one is trying to address, capital allocators can invest, donate, or both.

What's a good first step for someone looking to align their investments with their values?

The first step is to know what you own, which is more difficult than it sounds for those with complex portfolios. The second is to reflect on your values and preferences. Ideally you'd assign percentages to how much you care about various causes, impact sectors, and sustainable development goals. The more you do this, the more you'll see discrepancies between your investments and your values, and then start to align them.

Then it becomes a dialogue and a journey with your wealth advisor. You aren't alone. There are peer networks, families, and other UBS clients who can help.



¹⁰³ John D Rockefeller was America's first billionaire, and his fortune was created in the oil industry. More info on: <https://www.rockefellerfoundation.org/about-us/our-history/>

UBS analysts have estimated that transitioning the world's energy system alone is going to take a cumulative investment of between 120 and 160 trillion US dollars between now and 2050. That means green capital markets must grow globally at unprecedented speeds and scale.

To put it another way, the total green investment needed over the next 30 years is around the same size as the current global stock market capitalization. It took us 150 years to build existing equity markets. We've got just a fraction of that time to build a similarly sized green market.

Michael Baldinger, Chief Sustainability Officer, UBS



05 Working together

Traditional efforts to solve the issues facing our planet are often fragmented and short-term. Only by working together will we create a new system that can solve the complex challenges.

We need to understand the issues and what's causing them. Because unless we deal with the root causes, we'll always be trying to solve problems in malfunctioning systems – and nothing will change.

Together, we can change the system for good.

05.1 The power of collectives

Tips to make a bigger impact

1. Understand the big picture by:

- identifying how the key players and structures currently operate, and how they might work together
- assessing how each player can change the system
- exploring whether they want to maintain or change the system
- checking if someone has already responded successfully to the problem – and whether you could replicate and build on what they've done.

2. Start changing the system by:

- bringing players together to plan a new strategy and actions
- changing processes to achieve your goals
- making sure everyone involved is jointly accountable for achieving goals and advocating solutions.



Collectives are groups of key players from different sectors working together to solve issues on a big scale.

Starting a new collective isn't always the quickest, easiest or best approach. Many quality collectives already exist. So why not join forces with them?

This will allow you to:

- get the most from their resources and expertise
- invest in scaling up solutions that have already proven to be successful.

Taking part in collective philanthropy enables you to:

- achieve more with your money. Because it's pooled with other funds, it's more powerful – and can reduce your reporting duties
- feel confident you're investing in quality projects – because collectives more effectively find and assess projects, and measure their impact
- exchange views and insights with others, which can guide your future giving
- better manage risks, compared to acting alone in a new area – there's also less chance of people duplicating their efforts
- feel sure that everyone involved is accountable for, and committed to, achieving the goals
- have fun together.

The five ingredients of successful collectives

1. Common agenda – everyone shares and understands the same goals.
2. Strategic learning – the collective shares measurements and insights, so everyone learns and makes better decisions together.
3. Mutually reinforcing activities – the collective shares everyone's skills and talents.
4. Strong and trusted engagement with stakeholders – by creating strong relationships with partners, everyone can work together to achieve the same goals.
5. Backbone support – dedicated staff who can challenge and coordinate the different participants.

Combining climate philanthropy and sustainable investing

John Bernstein
Partner at Generation Investment
Management, Board Member,
The Nature Conservancy

Why should philanthropists get involved in both climate philanthropy and sustainable investing?

We're at an unprecedented time where every action in the next 10 years counts. There is a time value of carbon, and a time value of sustainability. What we do now means more than what we do in 10 years.

To me, what I do in my work life and my philanthropy are not separate, they are simply two different ways to tackle the same issue. I think where people have agency, they should take action. There are enormous opportunities now to invest sustainably.

The same applies to philanthropy. There are opportunities to get big returns from philanthropic capital. It's the best time to take action because we're closer to a tipping point with both economies and societies. The pace of change is there to gather momentum, and there are more things we can do because we're not pushing up against as many fixed obstacles. The science, knowledge, and financing are better than they've ever been. The tiers of capital are more sophisticated and offer more structures.

Often philanthropists hesitate to jump into climate action because they aren't sure where to start. How did you get started in this field?

I've always been interested in nature; I did a project on pollution at school. That's an underused word. We talk about 1.5 degrees too much, and not enough about pollution and waste dumping. It's hard to know what to do about 1.5 degrees. But it's easy to know what to do about pollution and dumping – stop doing it. In air, seas, and on land, there is so much pollution and destruction, so when you start addressing it, it can become infinitely scalable. You start with your street, your beach, your park, your country, and the land you love. Then you come together with others who also love the land, the ecosystems, and life, and it's empowering. We have a system which over-rewards financial values and under-rewards the value of nature, so we've allowed everyone to trash the world without being held to account.

When I started looking at philanthropy, I wanted to find something where my actions could be meaningful, so I focused on nature. The nature problem is just as big as the climate, but less understood. But there is a huge impact when you take a step back and work where nature, climate and people intersect. Nature interventions often tackle all three.

It's not enough to stop eating meat or to use a bamboo toothbrush. Everyone should be thinking: How do I change with optimal leverage to create the maximum impact on underfunded strategies?

You've been a member of several climate collectives, funding with other philanthropists. Why is it necessary for people to work together?

When I created my first, I had never heard of the term "collective". I just brought together a group of smart people to share insights and learning. A small group of people make better decisions than an individual. When choosing where to fund and focus, there are challenges and emotional stresses that are better to share with others. Ultimately, it's networking, and everyone should network as much as they can. However much we think we know, there's always more to learn.

What advice would you give to someone interested in collective philanthropy?

Find people with similar interests and work together. I encourage people to join me all the time. Don't think of philanthropy as a gift from you. It's a gift to you. There's no bigger gift than discovering meaning and mission. It's such a fulfilling way to learn, experience new things and forge great friendships.



05.2 Championing a new collective

You may want to champion a new project that tackles an issue in a place where a collective doesn't already exist. Here are some pointers on starting a collective:

1. Explore the issue and work out how ready you are to start:

- Find and recruit similarly focused champions.
- Build a strong and trusted relationship with the local community.
- Create a plan to launch the collective.

2. Launch the collective:

- Create a steering committee to champion the effort.
- Identify key issues and gaps at the start and measure your progress against them.
- Engage community stakeholders on your findings.

3. Organize for impact:

- Create a common agenda together, including the collective's vision, goals and ways of measuring progress.
- Review and test the common agenda with community stakeholders.

4. Develop strategies:

- Design the backbone of your collective (people who manage the collective and ensure participants are engaged).
- Create strategies for change, and form working groups for each change area.
- Devise an approach for sharing measurements and learning strategically.

Collective Action

Our philanthropic foundation, the UBS Optimus Foundation, also focus on environmental and climate issues. We've launched UBS Collectives, an innovative social impact initiative that connects our clients and mobilise their capital to fund initiatives that address climate change, child protection, health and education-related issues. Our climate collective is fighting the climate crisis through a collective impact in Southeast Asia.

- Together, 8 clients have committed \$8 million and have taken part in a 3-year learning journey on strategic climate philanthropy since October 2021.
- Financing of a programme to strengthen carbon absorption capacity in South-East Asia
- The collective has the potential to help repair a failing financing system and enable carbon credits to finance effective nature-based solutions



06 Where next?

The climate crisis threatens every living thing on our planet. To fight climate change, we need to reassess everything we do – how we live, work, play, invest, travel, buy and eat.

But just as humanity created this crisis, so can we fix it. Human ingenuity is a remarkable thing – people, and the innovations we develop, are a constant source of amazement and hope. We can carry our people and planet through the worst of climate change, and build a better world for our children.

So now it's over to you. As a philanthropist or an investor, you can combat years of pollution and poorly managed natural resources. Start by identifying what's most important to you. Explore how it connects to the climate, and how you can best create lasting impact. Connect with others, build relationships and take risks. Take your fight to the world. Learn from your failures and shout about your successes.

No one's saying it will be easy. The climate crisis is a complex issue, but there's no time for delay. There are things everyone can do, right now. Every action matters. We need to think about the issues as a whole, not as isolated problems, and to find long-term solutions.

It's time to take responsibility. It's time to step up.

To find out more about how you can help fight climate change and protect our planet, please contact sh_philanthropy@ubs.com.



Suzy Amis Cameron

Author and environmental advocate
OMD founder & UBS Global
Visionary 2022

My desire and passion to help move the needle on climate change is directly related to the love I have for children, respect for our planet and our overall health. Anyone can join me in moving the needle on climate change, whether you are five or ninety. The environmental savings can create positive impacts on water, trees, greenhouse gas emissions, and even helping endangered animals. Climate change is real, and if we don't take action now, there will not be a thriving planet for future generations. I encourage each of you to discover your "why" and join me in this easy movement to make a real difference.

Thank you

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About UBS

Changing the world needs leadership. At UBS, we want to be the financial provider of choice for people seeking to mobilize capital towards achieving the United Nations' 17 Sustainable Development Goals (SDGs), and the orderly transition to a low-carbon economy.

We believe people's desire to make the world a better place will continue to grow. People will increasingly seek to do good by choosing sustainable investments and philanthropic solutions. We can help you do just that.

Together, we'll explore your purpose and help you make a difference with your wealth through giving, investing, connecting and leading the change you want to see. We're recognized globally for our philanthropy services and expertise. With over 20 years' experience, we can help you and your family maximize your impact locally, nationally and globally.

We're proud to be among the founding signatories of the Principles for Responsible Banking (PRB) of the United Nations Environment Programme Finance Initiative (UNEP FI). This global program provides a framework for a sustainable banking system with the aim of aligning the industry with the SDGs and the Paris Agreement. We were among the first banks to shine a light on the SDGs and what it takes to make them investable for clients. Today, we're always seeking to develop solutions that direct investments towards those goals.

Our philanthropic foundation, the UBS Optimus Foundation, focuses on environmental and climate issues. We've also launched UBS Collectives to help you collaborate with other philanthropists and take your solutions to the world. We cover the costs of running your collective, match investors' funding, and provide a valuable learning experience over three years.



What does UBS do to protect the climate?

In 2021, companies and governments worldwide made many climate pledges and commitments. The world called for solutions – notably to reach net-zero emissions by no later than 2050 and achieve the Paris goal of limiting global warming to 1.5°C above pre-industrial levels.

As a leading global bank, we recognize our unique ability to mobilize capital and help our clients, employees, investors and society move to a net-zero economy.

Why is combating climate change so important to us? Aside from being the right thing to do for the planet, we believe it's the right thing to do for our business. To maintain our leading approach, it's vital we protect our clients' and firm's assets from climate change, while seizing on the opportunities of moving to a low-carbon world.

We launched our first climate strategy 15 years ago. In the 2010s, we expanded our focus beyond our own operations, to encompass protecting our assets and those of our clients, and mobilizing capital to tackle climate concerns. We refined our strategy by including and disclosing a growing number of climate-related metrics. And we're going further in the 2020s. In April 2021, we published our ambition to reach net-zero greenhouse gas emissions across our entire operations by 2050 (scope 1, 2 and 3 emissions). Since then, we've developed a comprehensive and ambitious climate roadmap. Today, our climate strategy covers two main areas: managing climate-related financial risks, and taking action on a net-zero future.

Currently, no bank can perfectly quantify its climate risks. Emissions figures are a blend of official data, expert views and information shared between organizations. But we aim to lead by example, by:

- continuously developing and refining our sustainable products and services
- focusing on climate risks in our company-wide risk management framework and operations
- sharing best practice with stakeholders, such as authorities, central banks, policymakers, academia and peers.



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