



Active
Philanthropy

Funding the Future

How the climate crisis
intersects with your giving



Keep life on earth.

Table of contents

Foreword	1
Executive Summary	3
Rationale	6
The global injustice of climate change	7
Intra- and intergenerational injustice	8
The climate crisis	8
The impacts of the climate crisis are already here	9
Global heating	9
Extreme weather	10
Rising oceans	11
Biodiversity loss	11
Climate intersections	13
Just and democratic societies	17
Why should social justice and democracy funders care about climate change?	18
Just transitions to a greener economy	18
Polarisation of societies on a heating planet	19
Climate-induced migration	21
Voices from practitioners	23
Public health	33
Why should health funders care about climate change?	34
Climate change and air pollution - two sides of the same coin	35
Climate change and heat stress	36
Climate change and malnutrition	36
Climate change and the spread of infectious disease	37
Climate change and mental health	37
Voices from practitioners	39
Disadvantaged groups	43
Why should funders that support disadvantaged groups care about climate change?	44
What climate change means for children	45
Climate change's impacts on women, girls and gender	46
Voices from practitioners	48
Education	54
Why should education funders care about climate change?	55
Climate science education	55
Vocational training in a changing climate	56
Education fosters climate resilience	56
Voices from practitioners	58
Nature conservation	60
Why should funders of nature conservation care about climate change?	61
Ecosystem services	61
Nature-based climate solutions	62
Trade-offs between climate policy and nature conservation	63
Voices from practitioners	65
Closing remarks	68
Good climate funding practices for foundations	69
List of figures	71
List of images	71
Bibliography	72



Acknowledgements

This guide has benefited from the expertise of the following researchers who have provided invaluable feedback on individual sections of this document.

Ana de Menezes, London School of Economics

Prof. Andy Morse, University of Liverpool

Antje Brock, Free University Berlin

Dr. Daniel Meierriecks, Berlin Social Science Centre

Frederick Dapilah, Humboldt University Berlin

Dr. Jacob Schewe, Potsdam Institute for Climate Impact Research

Janna Tenzing, London School of Economics

Prof. Jörg Niewöhner, Humboldt University Berlin

Dr. Katja Heubach, Palmengarten and Botanical Garden Frankfurt a. M.

Prof. Kristie Ebi, University of Washington

Dr. Kristin Nicolaus, Institute for Advanced Sustainability Studies Potsdam

Marco Krüger, University of Tübingen

Dr. Michael Jakob, Mercator Research Institute on Global Commons and Climate Change, Berlin

Dr. Montira Pongsiri, University of Oxford

Dr. Stephen Tyler, Institute for Social and Environmental Transition–International, Boulder

Dr. Twila Moon, National Snow and Ice Data Center, University of Colorado

Suggested citation:

Active Philanthropy (2020) Funding the Future: How the climate crisis intersects with your giving, Berlin, Germany

This report is based on Active Philanthropy's independent analyses, and Active Philanthropy is solely responsible for its content. The report does not necessarily reflect the individual views of the funders, advisers, or others listed throughout this report.

Contact:

Dr. Johannes-Georg Lundershausen
Tel: +49 (0)30-120878-420
Email: lundershausen@activephilanthropy.org
Forum for Active Philanthropy
inform, inspire, impact gGmbH
Caroline-von-Humboldt-Weg 8, 10117
Berlin, Germany
www.activephilanthropy.org

Active Philanthropy is grateful for the support of the Children's Investment Fund Foundation, which has made this report possible.



Foreword

By Sandrine Dixson-Declève, Co-President of the Club of Rome

The COVID-19 global health pandemic has exposed the vulnerabilities of health, social, economic, financial and political systems across the world and has tragically propelled us to a critical juncture that will shape our future society. With the convergence of the biodiversity and climate crises, the health pandemic has exacerbated what was already the greatest existential threat to all forms of life on Earth.

We know that the trio of climate-biodiversity-health shocks will weaken our governments, economies and spur social unrest. Therefore, this pandemic must be acted upon not as a singular threat but as one crisis in a series of shocks and long-term risks to human health, livelihoods, economic prosperity and planetary stability. Creating the conditions for all humans to exist and thrive within planetary boundaries will require every actor - from all sectors and regions - to do their part.

More than ever, funders will need to play a central role in helping shift our economic and financial systems to enable greater resilience and wellbeing by design rather than disaster, through well targeted financial capital in climate mitigation and adaption, circularity and sustainable resource use. Civil society and philanthropy have long been pushing and collaborating with public and private sector actors for a more equitable and sustainable world.

The question now is speed and scale in order to build the resilient communities necessary to confront future shocks and stop rampant climate change, biodiversity loss and future human health pandemics. In essence, “building back better” actually means we must design the new foundation from bottom up and top down. What we now need is a broader more strategic and concerted effort from all actors across civil society, academia and foundations in the “Planetary Emergency” space taking into consideration a more holistic approach that bring people on this transformational journey.

Our current economic system, as well as political and regulatory frameworks that guide economic activity, are not fit to induce the change at the scale and pace needed. Decades of neoliberal economic policy have left their mark and contributed to deeply imbalanced societies that lack resilience to cope with the climate impacts to come let alone new health shocks (OECD 2019).

Thankfully, new economic models such as the well-being economy model applied by the ‘Wellbeing Economy Governments’ (Wellbeing Economy Alliance 2020) or doughnut economics implemented at the city level (Boffey 2020) finally give humanity a clear pathway to ensure that we shift the paradigm from a holistic economic “theory of change” to the actual implementation of low carbon, biodiversity rich and equitable economies.

“ More than ever, funders will need to play a central role in helping shift our economic and financial systems to enable greater resilience and wellbeing by design rather than disaster, through well targeted financial capital in climate mitigation and adaption, circularity and sustainable resource use.”



Sandrine Dixson-Declève, Co-President, The Club of Rome

To create the system we need in the time that is left, foundations, in particular, can play a key role, for they are poised like no other actors to focus on long time horizons. Today, only a fraction of foundations in Europe are actively incorporating climate change and systems implications into their programmatic activities and overall strategy - this can and must change.

Active Philanthropy's guide "Funding the Future - how the climate crisis intersects with your giving" is a useful resource for foundations from whichever sector to start thinking about how they can contribute to tackling the climate crisis while delivering on their core mission to effectively ensure that we not only emerge from emergency but we enhance greater resilience, well-being and planetary sustainability.

“ To create the system we need in the time that is left, foundations, in particular, can play a key role, for they are poised like no other actors to focus on long time horizons.”

Executive Summary

The last few decades have been marked by incredible progress in social justice and improved living standards due to the tireless work of many, including the global philanthropic community. But a rapidly heating planet puts these hard won gains at risk.

The climate crisis is no distant threat – its effects are already here. Temperature records are regularly broken, the number of violent storms is increasing, and the rate at which the ice caps are melting is accelerating. While these impacts may seem abstract, they have very real effects on the lives and livelihoods of ordinary people around the world.

But not everyone is affected equally. It is the world's poorest, far less responsible for climate change than their rich counterparts, who bear the brunt. Indeed, the richest 10% of the world have carbon footprints 11 times higher than the poorest 50%, and yet they remain relatively shielded from the worst impacts.

Climate change is already reinforcing existing inequalities and making the grand challenges that societies face harder to solve. This is why philanthropists around the world cannot afford to ignore our heating planet. By only focusing on immediate funding areas, they may miss climate risks that undermine their existing efforts.

Geography and proximity also play a role. European-based philanthropists are one step removed from the coalface of climate impacts in developing countries and might fail to see opportunities for action and cross-cutting benefits. Finally, integrating a climate lens is also a huge opportunity to start addressing problems that will only become more unmanageable the longer they are ignored.

This guide attempts to connect the dots. It illustrates how the climate crisis impacts funding portfolios and highlights where there are co-benefits with taking climate action. It looks at five key areas that we call 'climate intersections':

“ I always think not so much of climate change as of climate justice.”



Mary Robinson, President of the Republic of Ireland 1990-1997, UN High Commissioner for Human Rights 1997-2002, founder of the Mary Robinson Foundation – Climate Justice



Just & democratic societies



Public health



Disadvantaged groups



Education



Nature conservation

The findings and suggestions in this report are meant to shine a light on how you as a funder can increase your impact by applying a climate lens to existing work. You know your portfolio best, and are therefore well placed to think through what these intersections mean for your work. The report is also interspersed with case studies on funders and select NGOs who are already applying this lens to their work.



Just & democratic societies

The decarbonisation of global economies is underway. Done correctly, inclusive and just transitions can uplift regions and economies. Done badly, they can exacerbate existing inequalities or create new ones.

To foster equitable transitions, philanthropists should focus on flashpoints where the poor and working class stand to be negatively affected by the green transition, from the decommissioning of coal mines or power plants, to the implementation of fuel levies and taxes.

Fighting polarisation and populism also needs to be considered. Simplistic arguments and policy solutions offered by populist leaders prevent stakeholders across party lines in building the consensus necessary to drive large-scale reform. At a time where communities, parties and countries desperately need to come together to tackle the climate crisis, populism seeks to divide.

On the ground, the injustice of climate change is that its impacts are felt most by those who have played the smallest role in causing the crisis. This includes the 16.1 million people who were displaced within their own countries in 2018 due to weather-related disasters. Migration is an inevitable response to direct climate impacts. Philanthropic funding should be channelled towards adaptation planning in the global south and decarbonisation of economies in the global north.



Public health

The physical and mental well-being of every person born today depends on rapid climate action.

Air pollution is a poignant example. It goes hand-in-hand with carbon emissions and is already the greatest environmental risk in Europe. It causes millions of premature deaths every year, with levels exceeding WHO guidelines in 83% of the world's cities.

Heat waves affect people's health both in cities where the urban landscape traps heat and in rural areas where temperature control measures are rare. Together with changing precipitation patterns and extreme weather events, high global temperatures also increase the spread and impact of infectious diseases. These already cause 7,000 deaths a year. Heat also causes droughts and a drop in water quality, weakening food security worldwide.

All these aspects contribute towards human displacement and separation, leading to anxiety, trauma and increased interpersonal violence.

“ Climate change poses challenges for prosperous, democratic societies, as it is linked to issues of redistribution and difficult political decisions. Our objective is to pay special attention to the nexus between our topics.”



Sandra Breka,
Robert Bosch Stiftung

“ ...the fact that investing in clean air simultaneously provides an opportunity to tackle multiple other global issues, including health, children's development, equity and climate change, may appeal to funders.”



Bernard Aryeetey,
Clean Air Fund



Disadvantaged groups

Climate change affects everybody – but not everybody is equally prepared to deal with it. Children’s capacity to deal with the hardship of failed harvests, displacement or diseases is limited. And women are hit harder than their male counterparts because they are often responsible for household activities. These include care work or collecting food, fuel and water – tasks made harder by climate change.

With extreme weather events, climate change will not just occasionally affect children, women and other structurally disadvantaged groups in society. It will systematically decrease their ability to help themselves and reinforce dependencies on others. For example, girls are the first to be taken out of school when poor families face hardships, undermining education attainment, which has been shown to be a key driver in bringing down fertility rates.

Philanthropic funding must consider that climate justice and racial justice are inextricably linked, and work to strengthen the voices of disadvantaged groups in decision-making processes.



Education

Climate education is essential if people are to cope in a dramatically hotter and more volatile world. Education enables people of all ages to grasp the complexity of the Earth system beyond the boundaries of different disciplines, to acquire the professional skills needed in the zero carbon economy, and to adapt their values and identities to a changing planet. Only if this education extends from schools to faith-based organisations, community groups, labour organisations, the private sector and other places of learning will transformation be possible.

There is also a need to improve access to education to build the climate resilience of vulnerable groups. In some cases doing so is more effective than building physical infrastructure that protects communities.



Nature conservation

Nature provides innumerable benefits for societies. Healthy ecosystems allow humans to breathe clean air, drink clean water or eat nutritious food.

Environmental protection can also be a cost-effective solution in tackling climate change because wetlands and other ecosystems store high amounts of carbon. Yet only 2% of global financing aimed at addressing climate change is channelled towards nature-based solutions. Philanthropists are well placed to fill this gap.

As this guide illustrates, climate change is already eroding hard won social gains. Yet every one of the outlined intersections are opportunities to increase both the cost-effectiveness and long-term impact of your philanthropic funding. Crucially, supporting these intersections can be explored while still maintaining focus on your core funding area. In the meantime, we encourage any funder to adopt some good operational practices that mitigate climate change such as monitoring your emissions or divesting from fossil industries. We hope this guide will help you see the immense potential of furthering your impact by responding to the greatest issue of our time.

“ More and more strategies to tackle the climate crisis are led by women, but their role as agents of change is often overlooked and they are hugely underfunded.”



Alex Heath & Ursula Miniszewski,
Global Greengrants Fund

“ Climate change ... challenges educators because it focuses on the complex interrelations between ... the environmental, economic and social dimensions of our lives.”



Dr Barbara Filtzinger & Badin Borde,
Siemens Stiftung

“ ...we have to stop thinking of sectors like the environment, education or health as completely separate from climate change, and instead see climate as a cross-cutting issue.”



Marie-Stéphane
Maradeix, Fondation
Daniel & Nina Carasso

Rationale

Funders are increasingly interested in addressing systemic challenges and fostering long-term change to achieve a just world. The 17 Sustainable Development Goals (SDGs) adopted by the UN in 2015 provide a timely framework for such engagement. They encompass a variety of targets relating to everyone on the planet and the planet itself. And in putting sustainability at the heart of human development they highlight how a changing climate envelopes all human activity.

All funders are working tirelessly to achieve a more just and equitable world. Yet climate change risks undermining these efforts. Climate change reinforces existing inequalities on a global and local level, and its causes and impacts have great implications for justice.

On the flip side, successfully tackling climate change will bring significant progress to achieving SDGs like gender equality, peace and zero hunger.

“Climate policy intersects with other societal goals creating the possibility of co-benefits or adverse side-effects. These intersections, if well-managed, can strengthen the basis for undertaking climate action” (IPCC 2014)

The logic of the SDGs is that achieving progress on one of the goals will support progress on all of them. Yet the co-benefits of solving both climate change and other social issues are rarely considered in decision-making (Karlsson et al. 2020). The problem is that many decision-makers lack the tools to connect different thematic areas (Nilsson et al. 2016).

Funders face this problem too. With a focus on immediate funding areas, they might miss climate-related threats that could undermine their efforts, or fail to see opportunities to create co-benefits. Funders need to develop the tools to take a broader view of their social impact grant making and apply a climate lens when planning their giving strategies. This climate-aligned approach is slowly increasing amongst funders, but not fast enough.

This guide provides a first step to overcoming this issue. It highlights funding areas that have co-benefits with taking climate action, shows how and why the climate crisis will affect a range of funding portfolios, and provides practical ideas for “putting a climate lens” on funding policies and portfolios.

This first part of this report lays the groundwork with an overview of the injustices associated with climate change, both between countries and between generations. It then delves into select impacts of climate change, some of which we are already witnessing while others are on the horizon.

The second half of the report discusses what we call ‘climate intersections’ - the points at which issues of social justice meet the impacts of climate change, and where funding areas have co-benefits with climate action.

“ With a focus on immediate funding areas, [funders] might miss climate-related threats that could undermine their efforts, or fail to see opportunities to create co-benefits.”

Each topic addresses why its corresponding funders should care about climate change, and how philanthropists may apply a climate lens to their giving. By way of illustration, we have included case studies that highlight experiences of funders who are redesigning their portfolios to include climate change.

This guide closes with 10 good climate funding practices to help you on your journey to becoming a climate-aligned foundation.

The global injustice of climate change

Man-made climate change is caused by emissions of greenhouse gases such as carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄) and chlorofluorocarbons (CFC's) (NASA 2020a). These emissions, shown below as CO₂ equivalents (CO₂eq), stem from different human activities and can be allocated to different economic sectors. This makes it possible to obtain an overview of the main drivers of anthropogenic climate change (Edenhofer et al. 2014).

GREENHOUSE GAS EMISSIONS BY ECONOMIC SECTORS

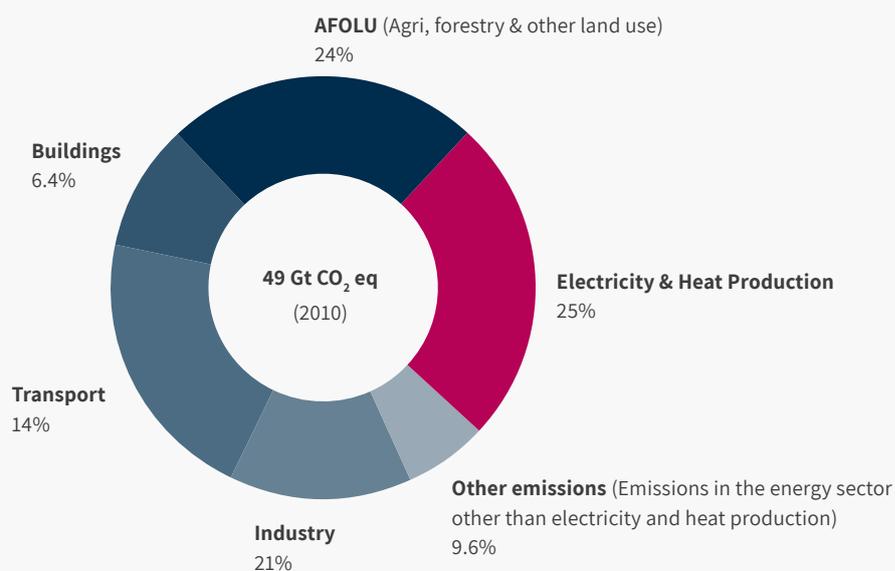


Figure 1: Adapted from 'Total anthropogenic GHG emissions (GtCO₂eq/yr) per economic sector' (Edenhofer et al., 2014)

Regarding the global distribution of greenhouse gas (GHG) emissions, the difference between the Global North and the Global South is striking. The richest 10% of the world, mostly in the Global North, including Europe, have carbon footprints 11 times higher than the poorest 50% in terms of individual consumption (Gore 2015). Taking into account all emissions, including those from governments, investments and international transport, the top 10% of emitters account for 45% of all emissions. Yet the bottom 50% of emitters are responsible for just 13% of global emissions, shown in the graph below (Chancel and Piketty 2015).

“Taking into account all emissions... the top 10% of emitters account for 45% of all emissions. Yet the bottom 50% of emitters are responsible for just 13% of global emissions...”

BREAKDOWN OF TOP 10, MIDDLE 40 AND BOTTOM 50% CO₂e EMISSIONS PER CAPITA

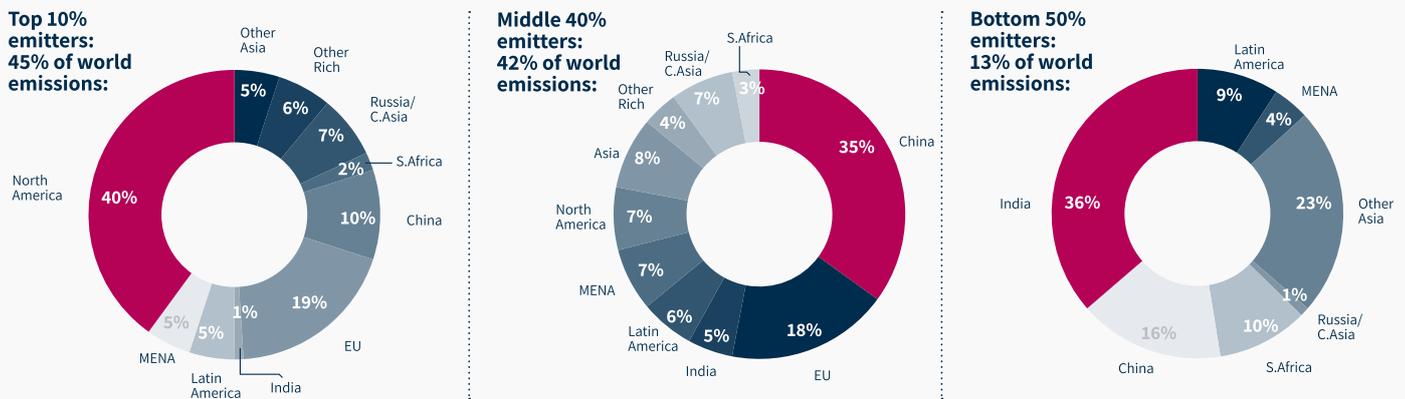


Figure 2: Adapted from ‘Breakdown of top 10, middle 40 and bottom 50% CO₂e emissions per capita’ (Chancel and Piketty, 2015, p. 6)

However, the poorest half of the world’s population, mostly residing in the Global South, is hit first and worst by the impacts of the climate crisis (Gore 2015). This is why the climate justice movement advocates for rich industrialised countries to take responsibility for their historic emissions and the associated climate impacts.

Calls for climate justice therefore not only call on industrialised nations to cut emissions and adapt to climate change themselves, but to also help the Global South do the same through the transfer of finance and technology.

Intra- and intergenerational injustice

A primary aim for climate action must be to address the intra-generational global injustice between industrialised countries most responsible for climate change and developing countries most affected by it.

A parallel disparity exists between generations - what is known as inter-generational injustice. This describes how our current destruction and / or depletion of global commons such as the atmosphere and Earth’s natural resources by those alive today will be a significant burden for future generations. Sustainable development addresses both intra- and inter-generational injustice with one concrete aim: To meet the needs of everyone alive today without compromising the ability of future generations to meet their own needs.

The climate crisis

Leaders at the 2020 World Economic Forum ranked failure to act on climate and to prevent its adverse impacts like extreme weather events as the most important risk in the world (WEF 2020). The reason for this is both the impact and the likelihood of climate change: Not only does a stable climate system envelop all human activities but the lack of effective climate policy threatens this stability.

“ A primary aim for climate action must be to address the intra-generational global injustice between industrialised countries most responsible for climate change and developing countries most affected by it. A parallel disparity exists between generations - what is known as inter-generational injustice.”

In 2015, the landmark Paris Agreement brought together the international community of sovereign nations who agreed to limit global warming to well below 2°C – ideally to 1.5°C (compared to 1990). But current national commitments are insufficient to achieve this aim. While the window of opportunity for staying below 1.5°C is rapidly shrinking, governments’ existing emission reduction pledges fall short even of the 2°C goal and would lead to warming of 2.6 to 3.1°C by 2100 (Rogelj et al. 2016).

The 57 countries that account for 90% of global greenhouse gas emissions have, to date, all failed to put policies in place that are compatible with a 2°C pathway (Burck et al. 2019). Rather than decreasing, global CO₂ emissions are actually increasing (Jordan 2019).

“ The 57 countries that account for 90% of global greenhouse gas emissions have, to date, all failed to put policies in place that are compatible with a 2°C pathway.”

The impacts of the climate crisis are already here

While implementation of the Paris Agreement is slow, scientists highlight significant negative effects on socio-ecological systems even if policymakers are successful in limiting warming to 1.5°C or 2°C. The following impacts of climate change are already being felt around the world and are projected to intensify with every additional decimal place of warming.

Global heating

The Earth has already warmed by around 1°C since the Industrial Revolution around 150 years ago – and the speed is unparalleled in the history of the Earth (NASA 2020b; NOAA 2020; IPCC 2014b). If societies continue to emit CO₂ at current rates, only seven years remain until 1.5°C of warming is unavoidable, and 25 years until the world is locked into a 2°C warmer future (MCC 2020).

“ If societies continue to emit CO₂ at current rates, only seven years remain until 1.5°C of warming is unavoidable, and 25 years until the world is locked into a 2°C warmer future.”

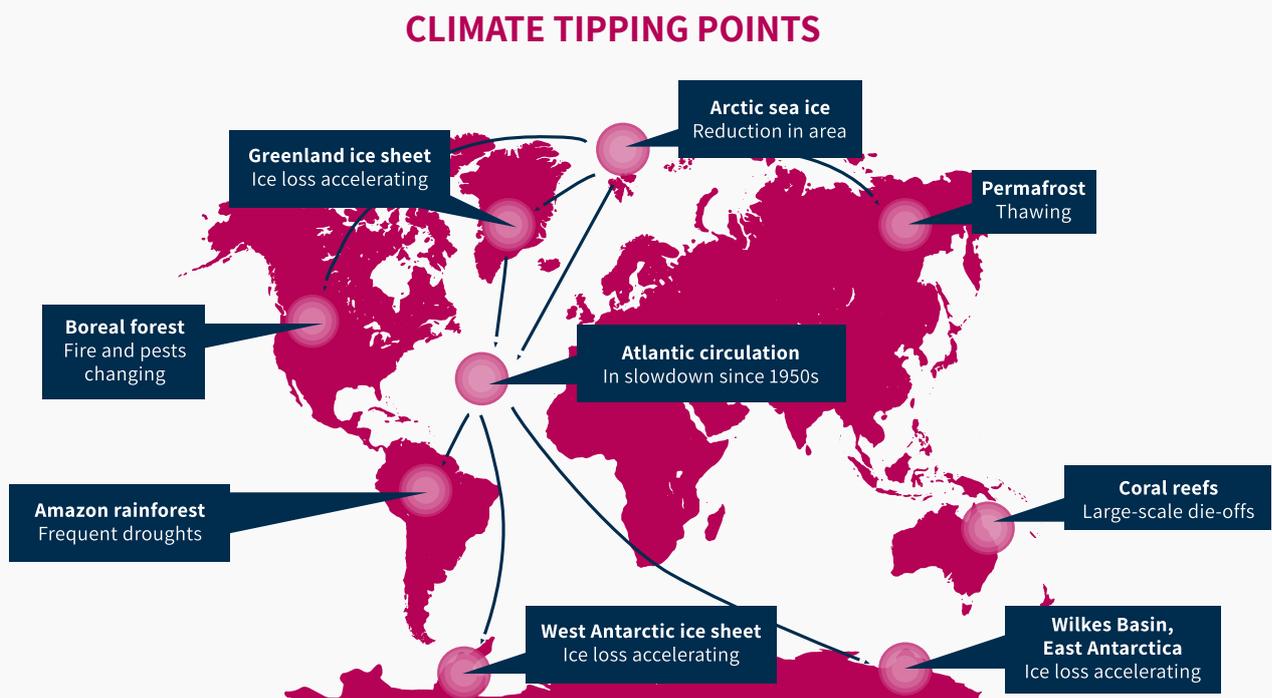


Figure 3: Adapted from ‘Raising the alarm’ (Lenton et al., 2019, p. 595)

To make things worse, feedback loops in the Earth’s climate systems greatly accelerate the warming process once certain tipping points are reached.

Such tipping points include the melt of the Arctic permafrost, the collapse of the West Antarctic ice sheet, and the dying of the Amazon rainforest. Scientists cannot say with certainty when such tipping points will be reached. Some scholars believe it could happen at temperature increases of 2°C and trigger further warming beyond humanity’s control (Lenton et al. 2019).

SELECT SIGNIFICANT CLIMATE ANOMALIES AND EVENTS IN 2019

Europe	Second hottest year on record - only 2015 was hotter
Australia	Hottest year on record
Alaska	Hottest year on record
Mexico	Hottest August on record
South America	Second hottest year on record - only 2015 was hotter
The Bahamas	Hit by hurricane Dorian, the strongest on record, with maximum winds reaching nearly 300km/hr
Africa	Third warmest year on record behind 2016 and 2010
Southern Africa	Cyclone Idai was one of the deadliest and costliest tropical cyclones to emerge from the Southwest Indian Ocean basin
North Indian Ocean	For the first time on record, three cyclones had maximum sustained winds of 100 knots or more in a season

Figure 4: Adapted from ‘Selected Significant Climate Anomalies and Events in 2019’ (NOAA)

Extreme weather

Climate change contributes to more frequent and more extreme weather such as heat, rainfall and winds. This in turn impacts the intensity of droughts, fires, floods and tropical storms (Herring et al. 2019).

Warmer air tends to store more moisture and so produces more extreme precipitation. Moist air also increases the risk of intense hurricanes, which leads to more flooding and, combined with sea level rise, to more intense storm surges (Bell et al. 2018).

These events pose major risks for societies that are simultaneously exposed to extreme weather and the lack of capacity to adequately cope with impacts. Responses to climate change should not just be about mitigating the extreme weather it causes - they must also account for the social and economic context in which exposed communities become vulnerable communities (Forzieri et al. 2017).

“ These events pose major risks for societies that are simultaneously exposed to extreme weather and the lack of capacity to adequately cope with impacts.”

Rising oceans

Sea level rise is a major impact of climate change: Warmer water expands and warmer air melts land ice, which then flows into the ocean. The loss of land ice is particularly acute in Greenland, which sees 2-3 times higher temperatures than the rest of the globe.

Global mean sea level already rose 11–16 cm in the twentieth century (Dangendorf et al. 2017). Even if economies decarbonised swiftly, sea levels could rise another half a meter or more this century; and if decarbonisation is slower, it could be up to 2 meters (Kulp and Strauss 2019).

These events pose major risks for societies that are simultaneously exposed to extreme weather and the lack of capacity to adequately cope with impacts. Coastal areas will erode and some island states such as the Maldives could disappear completely. It is projected that by 2100, 630 million people will live on land areas below annual flood levels (Kulp and Strauss 2019). Even seemingly marginal sea level rise of 50 centimetres has enormous negative effects on the global economy as it puts the biggest port cities such as Guangzhou (China), Miami or New York (USA) at risk (Hanson et al. 2011).

Moreover, potential tipping points exist in Earth's cryosphere (the frozen regions of the world). Passing a certain threshold of warming could lead to significant melting of ice sheets in Antarctica and Greenland and as a consequence, an increase in sea level. If all of the Greenlandic icesheet melted, it could contribute up to 7 meters to global mean sea level (Lenton et al., 2019). The Antarctic Ice Sheet has the potential to raise global sea levels by 57.5 meters (Morlighem et al. 2020).

Biodiversity loss

Biodiversity is the variability of ecosystems and species, but also variability within species and their genes. It strengthens any given ecosystem's ability to respond to and recover from disruptions because a wider variety of species, as well as larger populations, perform different and complementary functions. Resilient ecosystems are more likely to occur in larger, more geographically diverse and well-connected habitats (Oliver et al. 2015).

Despite the importance of biodiversity, its loss can be observed on every ecological level around the world. This is mostly due to changes in land and sea use (e.g. agriculture, forestry and urbanisation) and direct exploitation of resources (e.g. fishing and hunting).

Over time, however, climate change is expected to become one of the most significant causes of biodiversity loss (CBD 2018). This is because geographical boundaries and the slow pace of evolution hinder the ability of many species to adapt to and evade climate change (Díaz et al. 2019). As an example, 70–90% of tropical coral reefs will disappear even if global warming is limited to 1.5°C (Masson-Delmotte et al. 2018).

With the high number of man-made extinctions taking place, scientists are saying the sixth mass extinction in Earth's history is already underway (Ceballos et al. 2017). The last one wiped out the dinosaurs 66 million years ago.

“ With the high number of man-made extinctions taking place, scientists are saying the sixth mass extinction in Earth's history is already underway.”

DRIVERS & IMPACTS OF BIODIVERSITY LOSS

DRIVERS

INDIRECT DRIVERS

- Demographic & sociocultural
- Economics & technological
- Institutions & governance
- Conflicts & epidemics

DIRECT DRIVERS

- Land/sea use change
- Direct exploitation
- Climate change
- Pollution
- Invasive species
- Others

EXAMPLES OF DECLINES IN NATURE

47%

ECOSYSTEM EXTENT AND CONDITION

Natural ecosystems have declined by 47% on average.

25%

SPECIES EXTINCTION RISK

Approximately 25% of species are already threatened with extinction in most animal and plant groups studied.

23%

ECOLOGICAL COMMUNITIES

Biotic integrity - the abundance of naturally present species - has declined by 23% on average in terrestrial communities.

82%

BIOMASS AND SPECIES ABUNDANCE

The global biomass of wild animals has fallen by 82% since prehistory. Indicators of vertebrate abundance have declined rapidly since 1970.

Values and behaviours

Figure 5: Adapted from 'Examples of global declines in nature, emphasizing declines in biodiversity, that have been and are being caused by direct and indirect drivers of change (Diaz et al., 2019, p. 25)

Climate intersections

1. Just & democratic societies
2. Public health
3. Disadvantaged groups
4. Education
5. Nature conservation



Climate Intersections

“Although humans are the cause of climate warming, they will also be its victims. The conditions of their environment will change and influence the social and environmental determinants of their livelihoods.” (WWF 2015)

The scale of the changes outlined above may seem abstract, but they have very real effects on the livelihoods of ordinary people around the world. In fact, many of the social and environmental issues that societies have grappled with through time are made more difficult to solve by climate change. In this guide, we outline five such intersections:



Just & democratic societies

Democracy holds solutions for an inclusive, just transition to a green and sustainable economy. It does this by making use of participatory and inclusive tools for decision-making, and by resisting societal polarisation and populist allures.



Public health

While medical progress is fast, it will face serious challenges if heat, pollution, and infectious diseases are not curbed. Public health hinges on climate action.



Disadvantaged groups

Too often, a community's socio-economic status determines its resilience to climate change. If addressed correctly, climate adaptation and mitigation provide opportunities to increase equality by considering and including children, women, and elderly or indigenous people.



Education

Climate education is essential if future generations are to cope in a dramatically hotter and more volatile world. And such education should reach people of all ages and socioeconomic status. There is also a need to improve access to education as a whole to build climate resilience in vulnerable groups.



Nature conservation

Nature provides innumerable benefits for societies. If managed well, environmental protection can also be a key solution in tackling climate change.

In this respect the climate crisis affects the grant portfolios of many private donors and foundations and it risks the fulfilment of their goals in various social areas. In addition to supporting mitigation strategies that help reduce global warming, donors interested in climate change are advised to integrate it into their existing grant areas.

With this guide, we suggest that donors can include climate change into their grant portfolios while maintaining their focus on those people, places and issues which are close to their hearts.

MARY ROBINSON FOUNDATION – CLIMATE JUSTICE



Interview with Mary Robinson, President of the Republic of Ireland 1990-1997, UN High Commissioner for Human Rights 1997-2002, founder of the Mary Robinson Foundation – Climate Justice

‘I came quite late to understanding climate change,’ admits Mary Robinson. Even in 1997, when she was UN High Commissioner, ‘I was in a silo, as happens in big organizations: another part of the UN was dealing with climate.’

In 2002 she decided to found a small NGO called Realizing Rights to work on economic and social rights in African countries. ‘I felt passionately, after my five years as High Commissioner, that we weren’t taking seriously enough the rights that matter so much if we don’t have them, like the rights to food and water, health and education, and also issues around women, peace and security.’

Around 2003, 2004, she says, she became aware of something she had completely missed, the injustice of climate change, which disproportionately affected those who were least responsible in African countries. ‘They weren’t driving cars, they didn’t have major manufacturing, and yet they were suffering from terrible climate impacts. I always think not so much of climate change as of climate justice.’

Robinson outlines five layers to this injustice:

1

There is the injustice that she first became aware of in Africa, of climate change affecting most those who had contributed least to it. ‘It affects the poorest countries, the poorest communities, indigenous peoples, even poor communities in rich countries, disproportionately.’

2

The gender dimension: because of their different social roles, their lack of power, their lack of access to land rights and loans from banks, even a lack of agricultural training, women are more affected than men.

3

Intergenerational injustice: ‘children don’t see a secure future because we’re not taking our responsibilities seriously enough.’

4

Pathways to development: industrialised countries built their economies on fossil fuels, which we now need to wean ourselves off. ‘But developing countries need to develop to take their people out of poverty. Before Paris,’ she says, ‘many developing countries said they wanted to go the way of clean energy’, but they needed investment, technology and training, which they haven’t really got. ‘If they find oil, gas and coal, what do they do – and what’s our responsibility in relation to technology sharing?’

5

Fifth is what we're doing to nature – the loss of biodiversity, species extinctions, the fact that we're not living in harmony with Mother Nature. 'Having been in Greenland last summer with Active Philanthropy, I realized when I sat listening to that glacier calving that I was completely at one and crying because we were putting too much pressure on nature, and that was a very important part of my learning.'

How can philanthropies support the UN, locally and individually, given that it's the central institution to advance and coordinate the global response to climate change? 'We look to the UN and other international organisations for the big frameworks', she says, and in 2015 we got those frameworks. 193 countries negotiated the 2030 agenda with 17 Sustainable Development Goals (SDGs) and there was the Paris climate agreement. Then in October 2018 'we got the interpretation of scientists that we all have to stay at or below 1.5 degrees, and that means we have to reduce carbon emissions by 45 per cent over the next 10 years. And that's the big framework.'

Philanthropy is beginning to help with the SDGs, she says, supporting countries and communities, towns, cities, all of us, to be more aware of the SDGs. 'In many ways Covid-19 has now caused us all to change our habits. We're not buying superfluous, over-consumption, throwaway plastic things because we cannot go to the shops. We're back to basics, and that's an important message for the richer part of the world, that we need to reduce consumption.' Philanthropy can help communities in practical ways to work within these frameworks.

What kind of stories work? Fearmongering isn't helpful, in Robinson's view. That's why the byline of her climate justice book was 'hope, resilience and the fight for a sustainable future'. She was trying to bring out 'the stories of the courage and resilience of those faced with terrible shocks that they were not responsible for. They could well have made us feel more guilty about it. But that wasn't what they were doing. They were actually just trying to help their communities and build more resilience.' These stories can be inspirational, she says, particularly now because Covid has made us a little bit more compassionate.

“ What kind of stories work? Fearmongering isn't helpful, in Robinson's view. That's why the byline of her climate justice book was 'hope, resilience and the fight for a sustainable future'.”

What have we learned from Covid-19? She spells out several key points:

PEOPLE'S BEHAVIOUR MATTERS: That's what's protecting us from this virus. We have to protect the more vulnerable and health workers and care workers. There are also key lessons for us as consumers: 'to consume less, to be more choosy about what we're going to buy because of how it's produced, etc, etc.'

SCIENCE MATTERS: Governments were not listening to climate scientists, but we are now listening to health experts. 'Hopefully there will be a crossover to climate scientists.'

GOVERNMENT MATTERS: Harsh judgements will be made on countries that failed to protect their populations, she says, leading to increased deaths.

COMPASSION MATTERS: We are seeing empathy for our neighbours and for people that are less well-off in our countries. Empathy will help us to find solutions to problems connected to the virus.



In the following sections, we describe five Intersections in detail and share some examples of how existing grant portfolios can be adapted to climate change.

CLIMATE INTERSECTION:

Just & democratic societies

Why should social justice and democracy funders care about climate change?

The climate crisis exacerbates social inequalities within and between countries as well as between generations. This is because the people climate change most affects differ from those most responsible for causing it.

Such growing inequalities combined with increasing resource scarcity carry the potential for conflict within and between societies. Hence, reconciling the needs of different groups facing climate change is paramount. Democratic societies have the potential to meet this challenge by involving affected people or their representatives in participatory decision-making processes (Burnell 2012). In this way, different groups can answer questions about how we want to live and how we should allocate resources to get there.

At the same time, existing democratic systems need to meaningfully transform in order to pave the way for sustainable development. They must think beyond short-term economic growth and electoral cycles to account for planetary boundaries and the time lag built into the Earth system (FSDS undated).

Best practice examples already exist: In Wales for example, the “Well-Being of Future Generations Act” has made it a statutory duty for every council to take a long-term view in their decision-making and consider the needs of future generations.

To kick off our segment on climate intersections, we present three areas in which democratic processes and systems are crucial when dealing with climate change:

- Democratic transitions
- Polarisation of societies
- Migration

Just transitions to a greener economy

When aiming for emissions reductions, industrialised countries require major transitions in their energy, agriculture, industry and transport sectors, to name a few.

Many of the associated changes can, in the short term, lead to higher costs for consumers. These costs affect poor and disadvantaged groups the most, even though rich people emit more CO₂ in absolute terms. This is because people in lower income brackets spend a higher proportion of their income on emission-intensive goods such as food and energy (MCC 2017).

As a result of these dynamics, sustainable transitions are often seen to spur social inequality and cater only to the interests of the rich who can adopt sustainable lifestyles without financial consequences (Future Earth 2020).

Yet climate policy and related transitions can benefit disadvantaged groups if they account for issues of justice. A simple and effective measure is to combine a carbon tax with an annual pay-out to every individual, including those without income (MCC 2017). Those who emit less CO₂ will then ultimately gain more financially than those who emit more.

“Hence, reconciling the needs of different groups facing climate change is paramount. Democratic societies have the potential to meet this challenge by involving affected people or their representatives in participatory decision-making processes. In this way, different groups can answer questions about how we want to live and how we should allocate resources to get there.”

Alternative but more complex measures include fiscal reforms that recycle environmental tax revenue in progressive ways (Klenert et al. 2018). Revenue generated through higher prices for emission-intensive goods, for example, could be used to lower income tax for people on small incomes.

Some major policy initiatives have taken the issue of just transition into consideration. In Germany, federal plans to phase-out coal by 2038 have raised demands for a socially-just transition. This includes ensuring structural adjustments to prevent economic disruption and social hardship for communities in affected coal regions.

A plan by the German Coal Commission includes compensation to consumers for higher energy prices, early power plant closures, and labour market policies for employees of the hard coal and lignite industries (Agora Energiewende and Aurora Energy Research 2019).

The issue of social justice is also addressed by the EU's Sustainable Europe Investment Plan, which is expected to mobilise 1 trillion euros until 2030. It includes the Just Transition Mechanism, which will direct 100 billion euros in the next decade towards fossil-fuel dependent sectors, workers and regions vulnerable to a green economy transition (EC 2020).

Polarisation of societies on a heating planet

Populist movements have gained support in democracies around the world since the 2008 financial crash, and most share a damaging mix of anti-immigration rhetoric and climate denial. Both US president Donald Trump and Brazil's president Jair Bolsonaro have described climate change as a liberal hoax that threatens jobs.

The effects of populism on climate change is striking: According to estimates based on the World Resources Institute's emissions data, about 30% of global emissions come from countries with populist leaders (Dibley 2019).

“The greatest impediment to taking action will not be technological know-how or even raising the money required. Instead it will be the lack of enough political will, given the obstructionism of right-wing populists in power around the globe” (Calland 2020).

Populists deny climate change because it challenges two arguments central to their politics: plain solutions and anti-elitism.

Firstly, climate change's complexity makes it an easy target for populists, who seek to provide simplistic policy answers to complex questions (Future Earth 2020). Climate change and its effects are perhaps the epitome of complex, interlinked social, political, and physical forces. Given the uncertainty, long timeframes and global nature of climate change, moreover, the relationship between climate policy action and outcomes is often opaque (Lockwood 2019).

Secondly, populists claim to advocate for the interests of ordinary people against an established urban elite that dominates democratic processes and institutions (Haas 2020). For them, this makes climate change the ultimate elitist concern - driven by scientists and policy makers at supposedly 'out of touch' international institutions such as the UN (Gardiner 2019).

“ The issue of social justice is also addressed by the EU's Sustainable Europe Investment Plan, which is expected to mobilise 1 trillion euros until 2030. It includes the Just Transition Mechanism, which will direct 100 billion euros in the next decade towards fossil-fuel dependent sectors, workers and regions vulnerable to a green economy transition.”

PERCENTAGE OF VOTE TO POPULIST PARTIES

across 32 Western societies

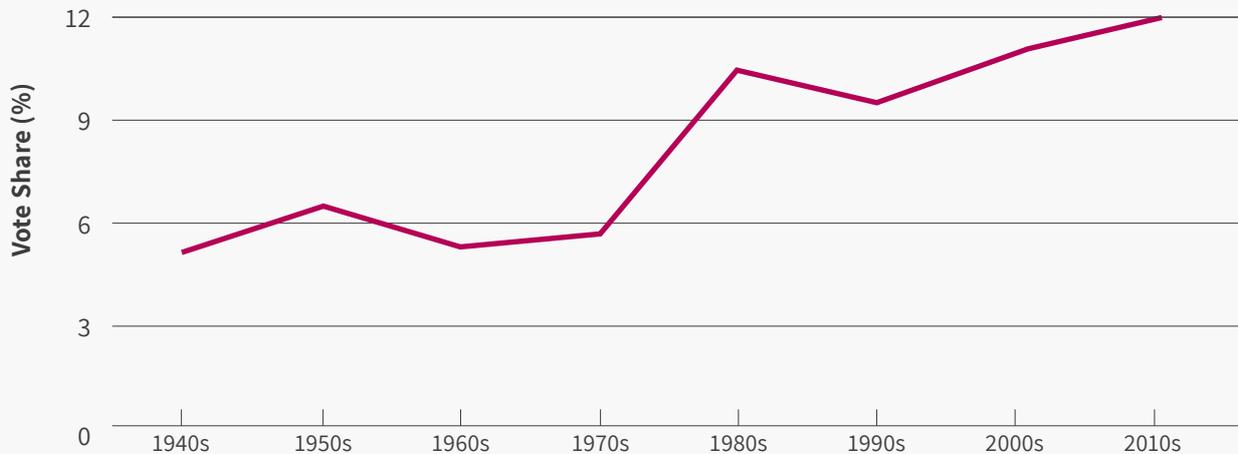


Figure 6: Vote share for populist parties across 32 western societies (1946-2017) (Future Earth 2020, p. 32)

By arguing against elites and for simple solutions, populism directly inhibits climate action. Seeking to dismantle multilateral organisations such as the UN or European Union, populists weaken the international cooperation that is desperately needed for effective climate policy (Future Earth 2020).

Populists also foster anxiety amongst poor and politically disenfranchised people by arguing that climate policy would harm middle- and lower-income earners. In traditional mining regions in eastern Germany for example, the right-wing AfD-party is gaining support by challenging federal plans to phase-out coal by 2038 (Haas 2020).

Furthermore, it damages climate action most by fostering polarisation. Rather than uniting societies to face future challenges, populism divides societies along lines of ethnicity, religion, nationality or social status (Castanho Silva 2018).

At the political level, polarisation hampers states' capacity to govern and to implement reforms. Rising political polarisation has meant most OECD and EU states have narrowed their scope for stakeholder consultation and failed to communicate their objectives coherently, according to the 2018 Sustainable Governance Index (Bertelsmann Stiftung 2018). As a result, they have been increasingly unsuccessful in building consensus around facts, a necessary condition for large-scale reforms associated with climate change.

The effects of polarisation on environmental policy can be seen in the US too. In the 1970s, Republicans and Democrats in Congress would vote along the same lines on environmental issues but started to diverge in the 1990s. According to an analysis by the League of Conservation Voters (2019), they now occupy opposite ends of the spectrum. Since Trump's election, Democrats have voted for pro-environment legislation on average 92% of the time, compared with a mere 5% for Republicans.

“ By arguing against elites and for simple solutions, populism directly inhibits climate action. Seeking to dismantle multilateral organisations such as the UN or European Union, populists weaken the international cooperation that is desperately needed for effective climate policy.”

DEMOCRAT VS REPUBLICAN VOTES for pro-environment legislation

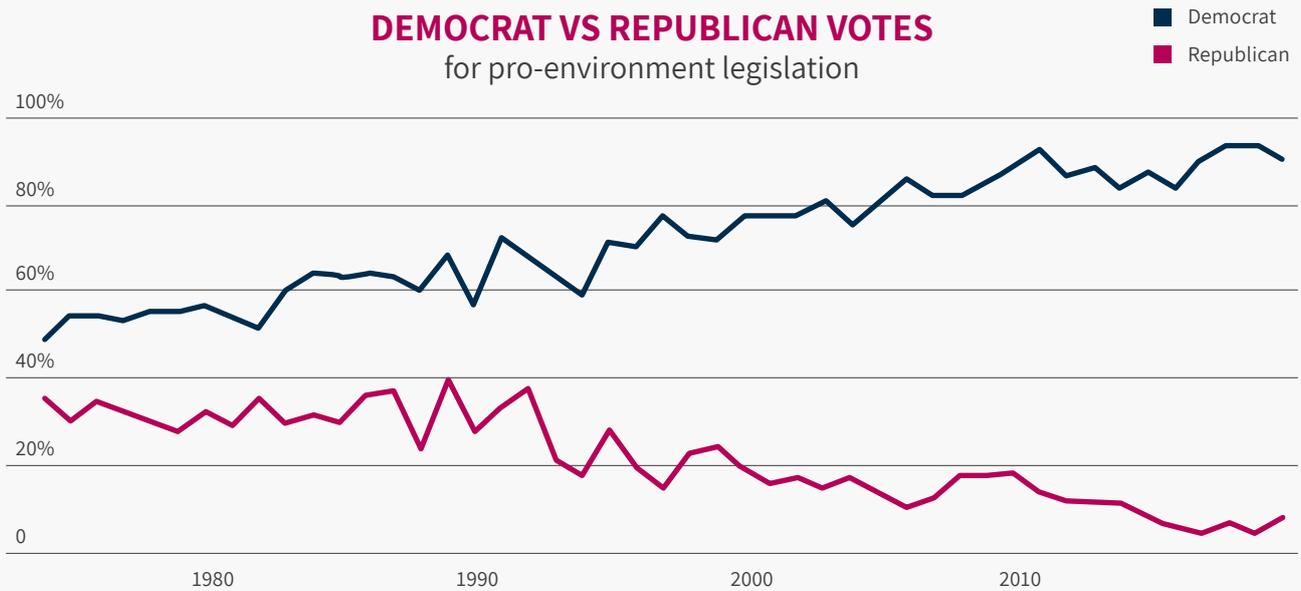


Figure 7: Democrat and Republican votes for pro-environment legislation (The Guardian 10/11/2019)

Climate-induced migration

Climate change is aggravating and multiplying both gradual environmental changes and sudden natural disasters. 16.1 million people were displaced within their own countries in 2018 due to weather-related disasters such as extreme heat, storms and floods (IDMC 2019).

Slower impacts of climate change like sea level rise or indirect effects like the spread of disease (see health intersection) also affect people's ability to sustain their livelihoods in their towns or villages of origin. The extent of future devastation and the number of people affected will depend on our ability to lower carbon emissions today as well as adaptation measures implemented over time (Hauer et al. 2020).

The recent mass migration from Central America to the US is an example of such climate-induced displacement. Climate change has made this region significantly hotter and dryer in recent decades (IPCC 2014a). This has contributed to prolonged drought conditions and associated crop failure, which 30% of migrant households have stated as the main reason for leaving their homes (WFP 2019).

If emissions continue to rise unabated, climate change and other environmental events could force hundreds of millions of people to migrate on a temporary or permanent basis by 2050 (Flavell and Chazalnoël 2014). Unmitigated, climate change may lead to at least another 60 million internal migrants in Sub-Saharan Africa, South Asia and Latin America by 2050 (World Bank 2018).

Climate-induced migration, even if people do not cross international borders, has enormously negative consequences on people's lives and livelihoods. It also brings the tragic irony of making them even more vulnerable to further impacts of climate change. For example, informal housing

“The recent mass migration from Central America to the US is an example of such climate-induced displacement. Climate change has... contributed to prolonged drought conditions and associated crop failure, which 30% of migrant households have stated as the main reason for leaving their homes.”

built on flood plains provides inadequate protection from extreme weather events or sea level rise (Satterthwaite et al. 2020).

Working at the nexus between climate and migration opens up several parallel areas of engagement: mitigating migration pressure by reducing CO₂ emissions, assisting adaptation of livelihoods in affected regions, responding to incidents of climate-forced displacement, and facilitating managed migration as a successful form of climate adaptation.

An issue cutting across these dimensions is the recognition of climate change in international law as a legitimate reason for forced migration. Legally, climate migrants hardly ever qualify for traditional refugee status and the rights associated with it (Warren 2016).

The 2018 Global Compact on Refugees recognised environmental changes as a driver of migration for the first time, but it entails no legally binding responsibilities for states. The International Organisation for Migration thus advocates the development of all existing bodies of laws and instruments to enable regular migration strategies in response to environmental factors (IOM Undated).

Focussing on the international dimension of climate-related migration is not enough because most migrants are displaced within their own countries. Their loss of livelihood remains largely invisible to international attempts to address the issue.

Internal climate migration to areas with better opportunities for work, such as cities, will significantly increase demand on infrastructure and social support systems. It therefore needs to be addressed in future development planning (World Bank 2018).

As internal migration increases and people are pushed across state borders, this type of migration should be given greater attention by the international community.

In this first group of intersections, we looked at how countries must protect disadvantaged groups as the world transitions to a green economy, how populism is slowing down climate action, and how climate change is already forcing people from their homes.

We also revealed some impactful areas where funders may respond, for example by responding to incidents of climate-forced displacement. In the next section we explore some of the severe impacts of climate change on health.

“ Focussing on the international dimension of climate-related migration is not enough because most migrants are displaced within their own countries. Their loss of livelihood remains largely invisible to international attempts to address the issue.”



Sandra Breka,
Member of the Board of Management

Realigning our work to meet new global challenges

The Robert Bosch Stiftung has over 55 years' experience in promoting international understanding. During this time we have adapted our funding in an evolutionary way. The massive changes in the global context require new answers – hence our decision in 2018 to fundamentally review our activities, focus our strategy and ultimately increase our impact.

The foundation's Board of Trustees decided that, from January 2020, we would concentrate on four topics in the newly named 'International Understanding and Cooperation' area: Conflict, Climate Change, Migration and Inequality.

These new topics are the result of a comprehensive strategic review involving foundation employees and numerous international experts. The realignment builds on the legacy of our founder. Today, peaceful coexistence depends on finding solutions to global challenges that can only be addressed together. International cooperation is necessary to identify and promote effective solutions within and between societies.

Climate Change is a global challenge that requires immediate multilateral action. At the same time, migration, conflict, climate change and inequality are closely interrelated. Among others, climate change reinforces structural inequalities that already exist. Wherever climate change encounters scarcity of resources, economic weakness and weak political structures, it can become a risk multiplier and driver of conflicts; the same is true with climate change and migration.

Climate change poses challenges for prosperous, democratic societies, as it is linked to issues of redistribution and difficult political decisions. Our objective is to pay special attention to the nexus between our topics. Examples include dealing with climate-induced migration or with the question of how new and old inequalities can be reduced through a more just transformation of land use in pursuit of climate goals.

There are also interrelations between climate change and topics in the other areas the foundation supports, such as Active Citizenship, Science and Research, Health, and Education. Especially in the area of Science and Research, climate change played a role even before our strategic realignment.

“ Wherever climate change encounters scarcity of resources, economic weakness and weak political structures, it can become a risk multiplier and driver of conflicts; the same is true with climate change and migration.”

Furthermore, we want to become more sustainable in the way we work. At the 2019 annual conference of German foundations (Deutscher Stiftungstag), we joined the initiative for more sustainability and climate protection and supported the Association of German Foundations' decision to include sustainability and climate protection in its principles of good foundation practice.

Our international work has been completely restructured as we started to implement our new strategy. Since January 2020, all colleagues have been working in new topic areas and team structures. We have to develop expertise and networks in the field of climate change. It requires time and patience; it is enriching, incentivising and challenging at the same time.

Recommendations for funders

- Exchange with and learn from funders that already have experience with climate funding.
- Seek advice and support from specialist climate philanthropy organisations.
- Involve as many external experts as possible.
- See your strategy as an emergent strategy to be adjusted over the years.
- Review your own working methods according to sustainability criteria.
- Apply a holistic approach to issues and take the many perspectives of the climate crisis into account – science, education, health, culture, democracy and many other 'classic' funding areas.

PORTICUS & LAUDES FOUNDATION



Leslie Johnston,
CEO, Laudes
Foundation



Melanie Schultz
van Haegen, CEO,
Porticus



George Kabalt, Special
Advisor (Climate),
Laudes Foundation &
Porticus

Mainstreaming climate change mitigation into core philanthropic strategies

The work of Porticus and Laudes Foundation build on six generations of entrepreneurship, responsible business ownership and private philanthropy, and stands alongside the business activities of COFRA. The value of human life, working together for the common good, looking after the planet and treating others as you would like to be treated – these are the ethical values at the heart of the Brenninkmeijer family owners' commercial and philanthropic endeavours.

Building on a long history and commitment to tackling the challenge of climate change, and further accelerated thanks to the IPCC report on global warming of 1.5°C in late 2018, it was decided to embed an even deeper climate focus at Porticus and Laudes Foundation for the future.

A small team of the philanthropies' executives, external experts and senior employees were given the mandate to focus on developing a future forward definition for climate-related giving with a focus on climate change mitigation rather than adaptation.

An open-ended investigation commenced to work out the best way to foster climate action and all topics, regions and philanthropic levers related to tackling climate change were evaluated for their potential to create positive impact. A list of criteria were applied to help narrow down the thematic and geographic areas. These criteria included the biggest potential to mitigate CO₂ emissions; resonance with the family mission and vision; and the fit with the philanthropies and their existing strategies and funding areas. After each step, the project sounding board reflected on the findings to see how the results resonated. Further, the group organised two closed-door convenings at the Marshall Institute with experts, other funders, and some family members to enable deeper discussion on the priority areas.

“ ... criteria to help narrow down the thematic and geographic areas... included the biggest potential to mitigate CO₂ emissions; resonance with the family mission and vision; and the fit with the philanthropies and their existing strategies and funding areas.”

As a result of this process, two strategies for the group's philanthropies were approved. The first was to continue the best of what the foundations were already doing, e.g. Good Energies' work on forest protection, or the former C&A Foundation's work to effect change through industry (and in this case via the Built Environment industry). The second was to focus on accelerating the transition to a post-carbon society, including aspects like just transition, financial incentives and innovation.

Once the strategies were approved, the team was asked to develop a plan for integrating them into their work at Porticus and Laudes Foundation. Although not all employees were involved, each strategy was communicated to the full foundations teams, and given the urgency around climate mitigation, the employees very much welcomed the new focus on what is one of the most critical challenges of our times.

Having a shared theory of change with shared outcomes and outputs across Porticus and Laudes further enhanced collaboration. Working with the external parties was essential, because they ensured they helped to objectify the findings and preferences and keep a neutral, entity-agnostic way of thinking.

“ Having a shared theory of change with shared outcomes and outputs across Porticus and Laudes further enhanced collaboration.”

Recommendations for funders

- Advocate climate action to other foundations.
- Help accelerate a just transition, e.g. by reaching out to people and telling them why a post-carbon society will be good for them, and why they should be part of the transition. Private foundations have much more freedom than public players to support such movements.
- Fund research or help change the narrative around climate.
- And while this is not an option for all foundations, given the urgency of the climate emergency, philanthropists should consider accelerating the spend-down of their endowments.

In the end it is a matter of choice, rather than optimisation, because all topics, regions and levers of climate action need more support.

EDGE FUNDERS ALLIANCE EUROPE



Tobias Troll,
Director

Addressing climate change as a systemic question

Founded in the US in 2012, EDGE (Engaged Donors for Global Equity) Funders Alliance is a global network of foundations and individual philanthropists with more than 50 members each in Europe and the US as well as additional members around the globe. EDGE Funders Alliance Europe was founded in 2015.

At EDGE we believe that equity and justice are critical to advancing sustainable, global wellbeing. We therefore work to increase awareness and understanding of the interconnected economic, environmental and social crises threatening our future, and to mobilise resources for systemic alternatives that support justice, equity and the wellbeing of the planet. We are united by the belief that it is necessary for all organisations to leave their topic-focused silos and to inspire each other to build a community that develops and promotes a just transition for systemic change. Only through collaboration can we transform current extractive systems and effectively tackle the climate crisis.

Our approach stems from the anti-globalisation movement which in the 1990s opposed neoliberal economic integration, and grassroots supporting organizations. In Europe it gained momentum in the context of the 2015 COP21 in Paris where we formed a European alliance of foundations, today EDGE Funders Alliance Europe.

EDGE Funders Alliance works closely with social movements and activists to ensure that no one is left behind. We believe that we can manage a just transition only if we give a voice to people on the ground and enable them to be part of the discussion – usually, those who must implement solutions will understand them best.

One initiative we are very proud of is FundAction. This highly participative fund is managed completely by activists and members of social movements. The only representative of a foundation in the fund's "facilitation group" is not even entitled to vote – and the system works well.

To advance awareness around climate change among other funders, EDGE Europe has been involved in the discussion around the Association of Charitable Foundation's Climate Pledge.

“ We believe that we can manage a just transition only if we give a voice to people on the ground and enable them to be part of the discussion – usually, those who must implement solutions will understand them best.”

It is also supporting efforts to launch a climate initiative through the PEX (Philanthropy Europe Networks) Community, formed in January 2020 by leaders and experts from national, regional and European philanthropy networks. We at EDGE Europe feel that funders can no longer ignore issues of justice including climate change.

Recommendations for funders

- Regardless of your purpose, a good way for foundations and philanthropists to start engaging with climate change is to look at your investments. Divesting from fossil fuels and carbon-intensive industries and investing in sustainable, climate-friendly solutions can have a huge impact.
 - Climate change cannot be discussed solely from a technical perspective since it is rooted in our social and democratic systems. Helping to link climate change with economic and social issues could make a valuable contribution to preparing for a sustainable future.
 - The danger and opportunities of climate change need to be understood throughout society. Grassroots movements have access to individuals, so supporting them can play a crucial role in promoting a change in mindset around climate.
-

SCHÖPFLIN STIFTUNG



Hans Schöpflin,
Founder & Chairman
of the Executive
Board



Tim Göbel,
Executive Director

Integrating climate change into our work to create a vibrant democracy

Interview with, and TFounded in 2001 and based in Lörrach, Schöpflin Stiftung's overarching goal is to help create a vibrant democracy. Although climate change is not an explicit funding area, since last year we have been increasingly addressing the issue. In 2019 climate change was the topic of our annual "Forum for the Future". This is a one-day conference bringing together people from different walks of life in order to strengthen the culture of participation and civil society involvement in Lörrach. The forum resulted in various climate-related projects. In cooperation with the city of Lörrach, we have also established a roundtable on climate change to coordinate civic projects and public activities in the field and initiated climate projects in schools.

We are currently considering how we can integrate climate change more closely into our work without compromising our overall objective. As a first step we analysed our grant portfolio and learned that about a third of our current grantees are already addressing climate issues. For example, Kiron Higher Education (www.kiron.ngo) is addressing climate migration, and the non-profit newsroom CORRECTIV has established an editorial office on climate issues (www.correctiv.org). We are now consulting with our program officers to see which of our funding areas and programmes could address climate change more.

At the same time we are considering integrating food systems, with a focus on agriculture and nutrition, as a funding topic, and getting more involved in the Omega Resilience Funders Network. This is a group of European and US funders looking for systemic answers to global challenges affecting people's and planetary health and wellbeing. We are also working towards becoming carbon-neutral in our own operations by the end of 2020.

The Fridays For Future movement certainly triggered our involvement in climate issues. We supported the movement at an early stage as it fits well

“ We are currently considering how we can integrate climate change more closely into our work without compromising our overall objective. As a first step we analysed our grant portfolio and learned that about a third of our current grantees are already addressing climate issues.”

with the way we work as a foundation. We strongly believe in the power of bottom-up people's movements to initiate change.

A lot of work remains to be done, of course. We need to communicate through our website our ambitions for the future. One challenge with climate change is that we must get active before we directly feel the impacts. To date most of us are addressing only those problems that are clearly visible. Furthermore, climate change has long been considered an issue of science. To get more funders involved, we need to focus more on the social aspects and appeal to people's emotions.

Recommendations for funders

- An internal portfolio analysis is a helpful first step to detect interconnections between climate change and other issues and where these can be strengthened.
- Support civic movements: we are convinced that change only happens bottom up, when the citizens of a society put pressure on the government.
- Help to make the urgency of tackling climate change more tangible by connecting the scientific facts to pictures and emotions. Learning journeys to places where climate change can already be seen and felt are a good tool because pictures and emotions move people, facts do not.



Christoph Bals,
Policy Director

Working on climate change and global justice

Germanwatch is a German-based development and environmental NGO with a focus on global justice. A key insight for us is that we must keep the opportunities and limitations of our actual democratic system in mind when seeking solutions for climate change.

It's the basic principle of a functional democracy, that those who are affected by political decisions need to be an active part of the decision-making process. But this principle does not hold in the case of climate change, which severely affects children, future generations and poor people, especially communities in the global south. None of them are adequately represented in the democratic system of those countries most responsible for climate change.

That is why Germanwatch supports climate litigation cases brought by poor and young people. We are convinced that successful litigation will not only bring justice to individuals – e.g. a Peruvian farmer at risk of losing his livelihood due to climate change effects caused in rich countries – but also, potentially, speed up the course of global climate policy.

The short-sighted horizon of the political system – driven by the election cycle – is another major problem. Given that results from climate decisions taken today will take decades to be seen, while the burden of transformation is visible today, there is no incentive for today's political leaders to act.

The perpetual nature of foundations gives them just the right horizon to seriously engage on climate change. They can invest for the long term as well as making grants for short-term projects with long-term benefits.

Climate change can itself pose a threat to democracies: if we don't limit global warming below 2° – or far better 1,5°C – future generations' individual liberty will shrink dramatically. And the longer we wait with transformative actions, the higher the risk of political panic reaction which reduces or ignores human rights. Our Climate Change Performance Index shows a clear correlation between a weak civil society and high greenhouse gas emissions. This is of course partly because of the strong nexus between dependency on fossil fuels and authoritarian regimes.

“ The perpetual nature of foundations gives them just the right horizon to seriously engage on climate change. They can invest for the long term as well as making grants for short-term projects with long-term benefits.”

Civil society has a crucial role to play in positioning climate work in national and global discourse. Groups like Fridays For Future are the renewable energy for a society and push climate change on to every political agenda.

Unfortunately, foundations are not yet sufficiently engaged when it comes to climate – though this is beginning to change. For Germanwatch, cooperating with foundations is extremely important. For example, it was foundation support that allowed us to initiate an EU business pressure group for strong climate action at the UN Climate Negotiations as an alternative to the – at this stage – only other active lobby group, which was mainly driven by Big Oil, coal, and car manufacturers.

“ Unfortunately, foundations are not yet sufficiently engaged when it comes to climate – though this is beginning to change.”

Recommendations for funders

- Fund well-designed climate litigation. Litigation cannot be funded by government and it is difficult to motivate individual donors and keep up their interest over periods of several years.
- Fund relevant legislative and regulatory work. Supporting climate-friendly trade agreements or emissions trading without loopholes is complex work that is hard to explain to individual donors.
- Support successful, well-established work. Understandably, most funders like to develop new projects and approaches, but it is also vital to support existing projects with a proven track record, for example our flagship project, the Climate Change Performance Index.
- Integrate marginalised people. This is challenging and difficult and often requires an effort that cannot be aligned with many institutional funders' requirements.

CLIMATE INTERSECTION:

Public health



Keep life on earth.

Why should health funders care about climate change?

The climate crisis is one of the greatest threats to human health in the 21st century, with hundreds of thousands already likely to be affected within the next 10 years (Goering 2018; Dunne 2017). The life of every person born today will be impacted by climate change from infancy to old age (Watts et al. 2019). Ignoring the impacts of climate change on wellbeing can result in significant adverse health outcomes incurring additional costs for the health sector (Prüss-Ustün et al. 2019).

“The life of every person born today will be impacted by climate change from infancy to old age.”

In this second section of intersections, we lay out how climate change poses a serious threat to health in five key areas:

- Air pollution
- Heat stress
- Malnutrition
- Infectious diseases
- Mental health

HEALTH RISKS OF CLIMATE CHANGE

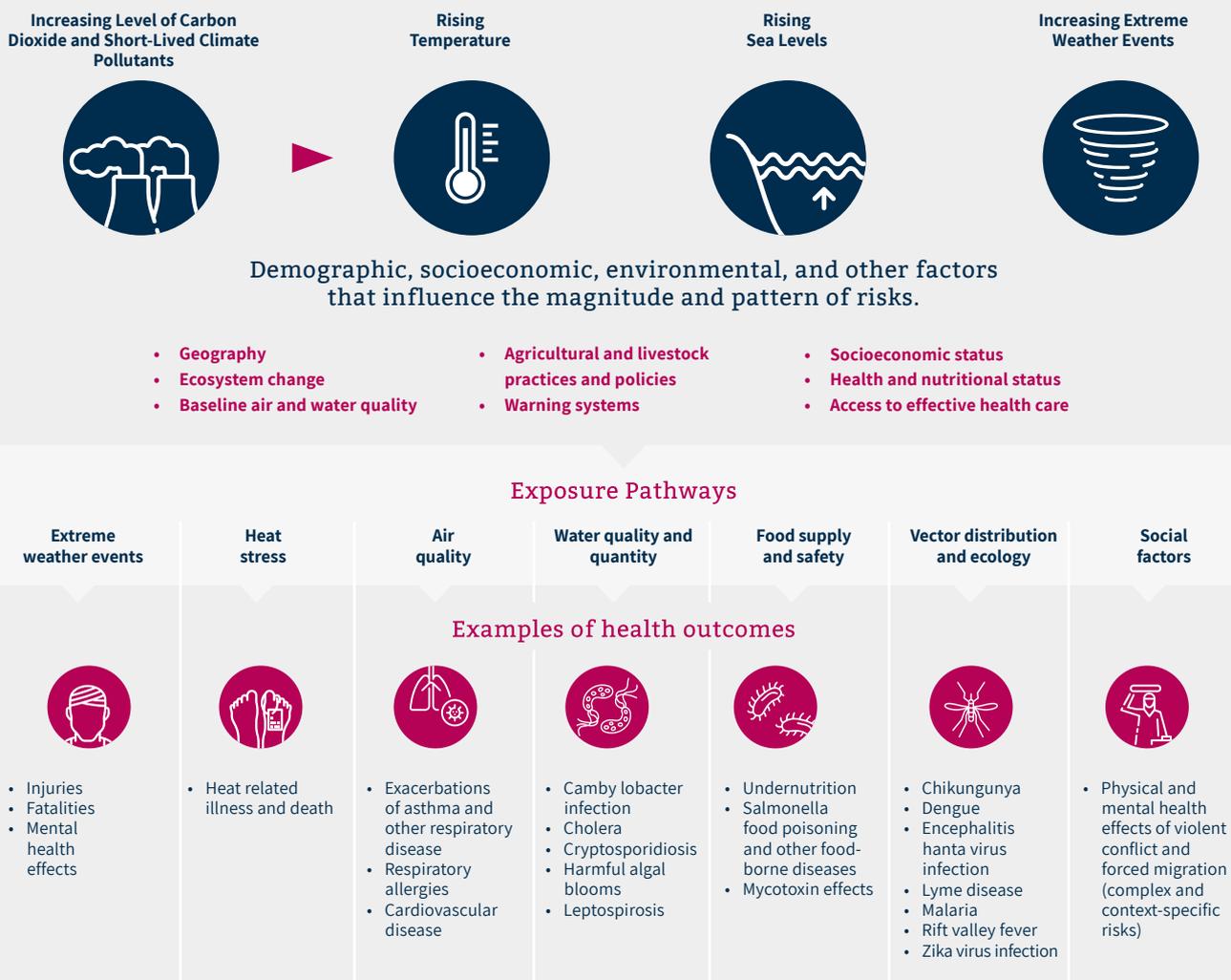


Figure 8: Adapted from ‘Major health risks associated with climate change’ (Haines and Ebi, 2019, p. 267)

Climate change & air pollution - two sides of the same coin

Fighting climate change often equals fighting air pollution. The substances that cause air pollution come from many of the same sources as greenhouse gas (GHG) emissions, or are GHGs themselves (González Ortiz et al. 2019).

The Covid19 pandemic starkly reminds us of the negative health effects of these substances. Research already shows that Covid-19 patients exposed to high levels of air pollution are more likely to die (Wu et al. 2020). Poor air quality damages the upper respiratory tract, which allows the virus to move more easily into the lower respiratory tract and cause lung inflammation (Conticini et al. 2020). The crisis should make us pay more attention than ever to respiratory diseases and related prevention measures.

Fine particulate matter is the strongest and most consistent predictor of mortality of long-term exposure to air pollution (UNEP 2017). Particulate matter can damage the lungs, heart, and other vital organs, leading to cardiovascular and respiratory diseases. This causes millions of premature deaths every year.

Particulate matter levels exceed WHO guidelines in a staggering 83% of the world's cities. In Europe, where air quality is slowly improving, particulate matter concentrations were responsible for more than 422,000 premature deaths in 41 countries in 2015 (EEA 2018).

83%

The number of global cities where particulate matter exceeds WHO guidelines

Air pollution currently poses the greatest environmental risk to health in Europe (Forzieri et al. 2017). And it hits the poor the hardest because they have limited access to health care and often live in heavily polluted areas. Air pollution therefore highlights the extent to which climate, health and social problems are intertwined (Clean Air Fund 2018).

“ Air pollution... hits the poor the hardest because they have limited access to health care and often live in heavily polluted areas. Air pollution therefore highlights the extent to which climate, health and social problems are intertwined.”

Climate change and heat stress

Rising global temperatures and more intense and longer heat waves are the most immediate health impact of climate change. Heat exposure can lead to hospitalisation, strokes, breathing difficulties, kidney injuries, worsening of heart failure and premature death. It also heightens the risk of interpersonal and collective violence (Watts et al. 2019).

Young children and people aged over 65 are most vulnerable, especially if they have pre-existing medical conditions like cardiovascular or respiratory diseases and diabetes. In Europe, which is characterised by an ageing population, 2,700 people died annually between 1981-2010 in relation to heat. This number is expected to rise exponentially due to climate change, reaching 151,500 per year between 2071-2100 (Forzieri et al. 2017).

EUROPEAN HEAT-RELATED DEATHS

Actual annual deaths
between 1981 – 2010

2 700



Projected annual deaths
between 2071 – 2100

151 500

Heat stress can be more prevalent in cities as urban areas tend to trap heat and produce heat islands (Patz et al. 2005). But rural populations are also severely affected since they have less access and are less able to afford temperature control measures such as air conditioning and thermal insulation (Burgess et al. 2017).

Climate change and malnutrition

One out of nine people, or 820 million, currently suffer from hunger, according to the UN Food and Agriculture Organization (FAO). The number of people who are undernourished or suffer from hunger has been increasing since 2015, after a prolonged decline (FAO et al. 2019). Climate change is one driver of these increasing numbers. Yields of crops like soy, maize, rice and wheat, sources of two thirds of the global human caloric intake, are estimated to decline by 3.1 to 7.4% with every degree of global mean temperature increase (Zhao et al. 2017). Together with this drop in caloric output, heatwaves combined with changing precipitation patterns and extreme weather events cause droughts, affecting agricultural output in many regions (EC 2018).

Another crucial issue is water quality and scarcity. Climate change is expected to increase water quality degradation. Higher temperatures mean less dissolved oxygen, which reduces the capacity for freshwater bodies to self-purify.

“ The number of people who are undernourished or suffer from hunger has been increasing since 2015, after a prolonged decline. Climate change is one driver of these increasing numbers.”

For each

1°C

of warming

=

3.1 – 7.4% decrease in yields of staples such as soy, maize & rice



Water scarcity, intensified by climate change, could deprive some regions of up to 6% of their gross domestic product (UN Educational, Scientific and Cultural Organization 2020). Farmers in the Global South are hit first and hardest by such changes. But in recent years European crop yields and livestock productivity have also suffered from such changes (EC 2018).

Climate change and the spread of infectious disease

Among all infectious diseases, 17% are transmitted by ‘vectors’, which are living organisms like ticks, mosquitoes or snails that can transmit pathogens (such as viruses) to humans. Vector borne diseases alone cause 700,000 deaths every year (WHO 2020). Rising temperatures, changing precipitation patterns and extreme weather events are influencing the geographic range, seasonality and abundance of these vectors.

For example, disease transmitting ticks and mosquitoes are expanding northwards, and in their traditional habitats they have become more active earlier and for longer periods of time (Watts et al. 2019; USGCRP 2016). Another example is an increased vulnerability to dengue fever in the Western Pacific and South-East Asia since 2014. Finally, extreme events such as floods not only cause direct injuries but also assist in the spread of vector-borne and water-borne diseases (Watts et al. 2019).

Climate change and mental health

The connection between climate change and mental health is difficult to quantify because it strongly depends on the social and cultural context (Watts et al. 2019; Berry et al. 2018). But the psychological toll of climate change on health is as important as the physical toll.

Disasters, separation, and displacement, which climate change is making more likely, cause trauma, post-traumatic stress, anxiety, depression, interpersonal violence and even suicide (Clayton et al. 2017).

Eco-anxiety, or “chronic fear of environmental doom”, has become more prevalent since October 2018 when the Intergovernmental Panel on Climate Change (IPCC)’s report said we only had until 2030 to stave off climate disaster (Arcanjo 2019).

Indigenous groups and communities who rely on the natural environment for sustenance are at greater risk of adverse mental health effects (USGCRP 2016). Not only are they losing the basis for their livelihood, but also their cultural identity and feeling of self-worth, as traditions that have defined their lives can no longer be followed.

“ Vector borne diseases alone cause 700,000 deaths every year. Rising temperatures, changing precipitation patterns and extreme weather events are influencing the geographic range, seasonality and abundance of these vectors.”

THE MENTAL HEALTH COST

Causes

- Disasters
- Separation
- Displacement



Impacts

- Trauma
- Post-traumatic stress
- Anxiety
- Depression
- Interpersonal violence
- Suicide

In the above section we explored five ways climate change is harmful to health. We saw how fine particulate matter in dirty city air is the most lethal form of air pollution and how exposure to intense heat can be deadly.

We also looked at how climate change is reducing yields and the caloric content of crops while pushing vector-borne diseases into new territories. We closed by describing why it is important to address climate change's impact on mental health.

CLEAN AIR FUND



Bernard Aryeetey,
Director of External Affairs

Tackling air pollution and the climate crisis together

The Clean Air Fund is a global philanthropic initiative with a mission to tackle air pollution around the world, improve human health, and accelerate decarbonisation. We bring together funders, researchers, policy makers and campaigners to find solutions that will provide clean air for all.

Air pollution and climate change are inextricably linked. These two global challenges share many causes, such as transport, the power sector, industrial emissions and crop burning.

Tackling air pollution contributes to climate change mitigation as well as improving public health. In the UK, for example, our work resulted in Birmingham, Manchester and Bristol committing to new Clean Air Zones. Although plans are currently on hold due to COVID-19, these CAZs will substantially reduce air pollution from transport, simultaneously contributing towards climate change mitigation.

We believe the Clean Air Fund is best placed to tackle the climate crisis from the angle of combating air pollution. We are building the clean air movement by leading a coalition of funders interested in climate change, global health, children and transport/mobility. Together, we identify, fund and support a multinational portfolio of clean air programmes.

We currently centre our efforts in four core countries: India, Poland, Bulgaria and the UK. We also have projects in China and Brazil. We have identified six strategic pillars for sustainable air quality change: data, impacts, communications and awareness, policy and politics, field-building, and implementation.

Despite growing interest from funders in climate change, the proportion of philanthropic giving to climate issues is still small. Climate change is often still seen as a contentious topic. Additionally, the cost-effectiveness of climate funding can be difficult to quantify, so it may seem less attractive than investments that result in more obvious, short-term wins. However, the fact that investing in clean air simultaneously provides an opportunity to tackle multiple other global issues, including health, children's development, equity and climate change, may appeal to funders.

“ the cost-effectiveness of climate funding can be difficult to quantify... However, the fact that investing in clean air simultaneously provides an opportunity to tackle multiple other global issues, including health, children's development, equity and climate change, may appeal to funders.”

Given the limited funds available to climate issues, funders should aim to be as strategic and collaborative as possible to maximise their impact. Identifying key gaps, coordinating efforts, and sharing knowledge and expertise will support the rapid scaling and replication of successful solutions. Innovative, cross-cutting solutions will be particularly needed as countries try to recover from the impacts of COVID-19.

Recommendations for funders

- **Fund neglected areas:** Our Clearing the Air report highlights that less than 0.05% of global philanthropic funding on air quality is going to Africa and Latin America. This is an important gap to fill to address the inequitable burden of disease and meet global climate goals.
 - **Support research:** To date, more than 60% of investments have focused on policy and communications. We also need investments that improve our knowledge of the impact of air pollution, expand data networks, and promote the implementation of solutions.
 - **Build capacity:** As the number of stakeholders working on air quality increases, forward-thinking foundations can be at the forefront of building capacity, collaboration and coordination.
-

GEGM – HEALTHY PLANET - HEALTHY PEOPLE



Dr Eckart von
Hirschhausen,
Founder



Kerstin Blum,
CEO

Addressing climate change by linking planetary and human health

The Healthy Planet - Healthy People foundation was created in 2020 to add the voices of medical professionals to the debate on climate change. Climate change is the biggest threat to human and planetary health in the 21st century. Why is there so little effective action to address it?

One reason is that the narrative of homeless polar bears, atmospheric chemistry and future sea-level rises is psychologically distancing. Healthy Planet - Healthy People focuses on a topic most people care about: their own health and the health of their families. Climate change is already directly affecting human health in many ways: through heatwaves, air pollution, emerging infectious diseases and allergies. It will also endanger our food safety and water supply and lead to major conflicts and massive migration.

Covid-19 has shown that one virus jumping from an animal to a human being can cause enormous damage. Climate change is a much bigger threat. There will never be a vaccine or 'herd immunity' to a hothouse earth. Planetary health must become our first priority.

Addressing climate change from a health perspective has three distinct advantages. First, it moves an abstract scientific problem into the centre of people's everyday lives. Second, we can talk about the immediate and individual benefits. Changing to a plant-based diet, for example, is equally beneficial for one's personal health and in reducing greenhouse gas emissions. Third, the concept of 'one health' integrates the wellbeing of ecosystems, animals and humans.

Our new foundation builds on the skills and networks of the founder Eckart von Hirschhausen. As a medical doctor, he is known throughout Germany for his unique way of communicating about health on primetime public television, in best-selling books and in stand-up comedy shows. In

“ Climate change is the biggest threat to human and planetary health in the 21st century. Why is there so little effective action to address it? One reason is that the narrative of homeless polar bears, atmospheric chemistry and future sea-level rises is psychologically distancing. Healthy Planet - Healthy People focuses on a topic most people care about: their own health and the health of their families.”

collaboration with the medical consultancy Die Brückenköpfe (The Bridgeheads) and drawing on ten years of experience of von Hirschhausen's other foundation Humor Hilft Heilen (Humour Helps Healing), we should be able to quickly create a meaningful impact.

The overall goal is to use the natural authority of doctors, nurses and other health professionals to reach new target groups. We need to move away from scientific language to a more accessible, even humorous, motivational style. Everyone needs to understand that a positive contribution is possible and required on the individual as well as the political level.

Foundations are the 'venture capital' of civil society. Should they not be more daring and outspoken when it comes to the biggest challenge facing mankind: our own survival?

“ Foundations are the 'venture capital' of civil society. Should they not be more daring and outspoken when it comes to the biggest challenge facing mankind: our own survival?”

Recommendations for foundations

- Check if your goals are connected directly or indirectly to human and planetary health. The Healthy Planet – Healthy People approach can be applied to many other activities.
- Invest in professional communication, political networking and online visibility. The best way to move others is with positive narratives and best practices. We need to make sustainability the new 'normal'. Political advocacy is the biggest lever for change.
- Support research and action in the underfunded field of mental health. Climate change, war and migration can trigger helplessness, trauma and depression in adults and children alike. It's hard for people working on complex global problems to avoid burnout.



CLIMATE INTERSECTION:

Disadvantaged groups

Why should funders that support disadvantaged groups care about climate change?

Disadvantaged groups are less able to participate in social and economic systems due to factors such as geographical location, ethnicity, gender and age. The interplay of access to resources, governance, knowledge and information on climate change are particularly important for understanding the vulnerability of these groups to climate change (UN Climate Change Secretariat 2018; Zagorac 2016). As they are less powerful and often cannot raise attention to their needs and aspirations, they face bigger challenges in adapting to changing realities (Voss 2008).

In the context of climate change, disadvantaged groups are also vulnerable groups. Given their marginal positions – socially, economically or even geographically – disadvantaged groups are disproportionately affected by climate change (Eckstein et al. 2019; UN Climate Change Secretariat 2018). They are more likely to be affected, they will suffer more, and they will not recover as well as others – reinforcing and exacerbating existing social inequalities (Islam and Winkel 2017).

Disadvantaged groups, like others, have strategies to cope with climate stress: They cut back on health care expenses, sell assets like goats, or make use of social networks in the neighbourhood. But they remain structurally disadvantaged due to exclusion from decision-making processes.

And so climate change will not just briefly threaten livelihoods for a limited period during a storm or while recovering from a flood. Instead it will systematically decrease their ability to help themselves, and reinforce dependencies on others. Philanthropic and other responses must become transformative rather than just treating the symptoms of such dependencies.

Climate change will put an extra burden on global development goals as a result, and will endanger progress linked to improving human rights and decreasing inequality – both in the Global South and the Global North (UN Human Rights Office 2019).

In this section we focus on children as well as women and girls to illustrate how certain groups are particularly vulnerable to climate change. Others, such as elderly or indigenous people, are also particularly vulnerable due to certain characteristics or their position in society.

Many funders have extensive experience in targeting their work at specific groups. This can also be an asset for philanthropic engagement on climate change. Including past experiences of working with disadvantaged groups in funding strategies to fight climate change can enhance the visibility and empowerment of these groups. It can also increase access and speed up interventions.

When working with disadvantaged groups on climate change, special attention should be paid to participation in project design and implementation. Only if these groups can make their voices heard will projects generate lasting and equitable results.

At the same time, climate risks need to be incorporated into existing initiatives linked to disadvantaged groups to ensure progress is not endangered.

“ ...disadvantaged groups are disproportionately affected by climate change. They are more likely to be affected, they will suffer more, and they will not recover as well as others – reinforcing and exacerbating existing social inequalities.”

In the section below we explore how climate change exacerbates the social issues that two vulnerable groups face:

- Children
- Women and girls

What climate change means for children

Globally, one in four people is below the age of 15 (World Bank 2019). These children are not only highly vulnerable to the effects of climate change but they will have to live with climatic changes far into the future. Furthermore, while powerful movements like Fridays for Future have raised the youth climate voice, children's and young people's voices are still excluded from official decision-making processes such as voting (UNICEF and Save the Children 2011).

1 IN 4 OF GLOBAL POPULATION IS BELOW THE AGE OF 15



- Are vulnerable to the effects of climate change
- Will live with climatic changes far into the future
- Voices are excluded from official decision-making processes

Children are considerably more vulnerable than adults to climate risks such as extreme weather events, diseases or malnutrition. The WHO estimates that 85% of the global disease burden caused by climate change occurs in children under 5 (Venton Undated).

Extreme weather events are much more likely to affect children because they can't protect themselves as much as adults can. In Nepal, for instance, flood-related mortality for children is double that of adults, with pre-school girls five times more likely to die than adult men (Bartlett 2008).

Furthermore, failed harvests from changing weather patterns or salinized soil caused by rising groundwater levels will hit children hardest and will significantly influence their physical and personal development (Pelletier et al. 1995).

In terms of mental health, an increasing number of young people are at risk of climate anxiety or climate grief, which can lead to long-term mental health problems (Clayton et al. 2017). And the mental health of children living through humanitarian emergencies or natural disasters is even more at risk. In order to prevent, manage and recover from mental illness, helping young people build mental resilience is recognized as increasingly important (WHO 2018).

The good news is that many existing interventions supporting children also contribute to climate adaptation. Building schools, investing in water and

“ The WHO estimates that 85% of the global disease burden caused by climate change occurs in children under 5.”

sanitation projects, or distributing mosquito nets benefit children generally and become critical in the face of climate change. This makes integrating climate change into existing projects both opportune and straightforward.

Ignoring climate change is a violation of many children’s rights as guaranteed under the UN Convention on the Rights of the Child because not acting will deny children their rights to survival, development, protection and participation in society (Guillemot and Burgess Undated).

To implement this guarantee on the ground, however, we need to prioritise measures that prepare children and their families for upcoming risks. One such measure is education, which is covered in the next section of this report. It increases children’s chances of upward mobility and so decreases their socio-economic vulnerability to climate change.

Climate change’s impacts on women, girls and gender

Women and girls are more vulnerable to the adverse effects of climate change than their male counterparts. Many negative consequences of climate change are interlocked with issues of gender equality (Röhr 2007).

One reason for this is the gender division of labour. Globally, women often carry out the care and reproductive work in families, including housekeeping and child rearing. As these activities prevent them from pursuing education, well-paid jobs and financial independence (Guzmán 2009), they have fewer possibilities to respond to the impacts of climate change.

Women’s roles are also tied to the food-energy-water nexus in many developing countries. They have the primary responsibility for agricultural labour but also for collecting food, fuel and water (Nellemann, C., Verma, R., and Hislop, L. 2011). These activities will become harder as changing climate patterns reduce fresh water supply, food security and food quality (Zhao et al. 2017). This can have greater knock-on effects for gender equality – more work for women in the household means less participation in decision-making processes and raising the issues important to them.

“ Women and girls are more vulnerable to the adverse effects of climate change than their male counterparts. Many negative consequences of climate change are interlocked with issues of gender equality.”

WOMEN’S ROLES IN SOCIETY



Many other cultural norms that discriminate against women are likely to have knock-on effects in the face of climate change. For example, many women and girls do not learn coping strategies or lifesaving skills like swimming or climbing trees that could be crucial in the case of extreme

weather events. And in some communities they are often not allowed to evacuate their homes without consent from their husbands or elders (Nellemann, C., Verma, R., and Hislop, L. 2011).

The pressure of care work is also likely to increase as climate change negatively affects the health of family members. The ongoing Covid-19 pandemic highlights the impact of health crises on women and especially single mothers, who face an increase in unpaid care work and losses in income (ILO et al. 2020).

Climate change also puts recent achievements in gender equality in education at risk. As climate change affects livelihoods and incomes of families around the world, they are likely to send their boys to school, with girls staying at home (UNESCO 2019b).

Women are not only victims of climate change but also a key part of the solution. However, many of the ideas and approaches discussed today are highly technical and market driven, and still come from male-dominated areas, running the risk of again excluding women (Flegel et al. 2009). If women are not part of the solution today because there are fewer female engineers, for example, then we run the risk that existing stereotypes and hierarchies will prevail.

In this section of intersections we shed some light on the myriad ways that children are considerably more vulnerable than adults to climate risks. We also looked at how the many cultural norms that put women and girls at a disadvantage are likely to become more pronounced in the face of climate change.

Having touched on education in the context of climate and gender equality, in the next chapter we move onto the important connection between climate change and education as a whole.

“ Climate change also puts recent achievements in gender equality in education at risk. As climate change affects livelihoods and incomes of families around the world, they are likely to send their boys to school, with girls staying at home.”

GLOBAL GREENGRANTS FUND



Alex Heath, Officer
of Philanthropic
Partnerships



Ursula Miniszewski,
Director of Gender
and Equity

Addressing climate change by supporting women's environmental action

Founded in 1993, Global Greengrants Fund is a global network of activists and donors supporting communities to protect their way of life and our planet.

Too often, international funders approach grantmaking from the top down, either by only funding well-established organizations or by only funding those community projects that fit a specific goal or preconception about effective strategy. Technical solutions to climate change often take years before they help reduce emissions, and can reinforce inequitable systems and unsustainable development.

Alternatively, grassroots organizations are developing and implementing equitable solutions for mitigating and adapting to climate change every day. We believe that when local people truly have a say in the health of their food, water, and resources, they are forces for change. We therefore support grassroots movements and solutions led by indigenous peoples, youth, women, and people with disabilities.

We work with a network of about 145 advisors around the world who act as our eyes and ears on the ground. Our advisors are activists, experts in their fields, and respected environmental justice leaders who have strong ties to local grassroots organizations and a deep understanding of the context in their region. Because of their local knowledge, we are able to connect to promising solutions and groups, channel funds to where they are needed most, and to assist our grantees after they have received a grant by providing them with other resources and connections.

The majority of our grants are small, between USD 1,000 and USD 5,000, but these sums can make a great difference for the groups we work with. In June 2018, for example, we awarded a small grant to an indigenous community in Ecuador that allowed them to replace the engine in their dugout canoe. They needed the canoe to monitor about 70 cases of illegal mining, fishing

“ We believe that when local people truly have a say in the health of their food, water, and resources, they are forces for change. We therefore support grassroots movements and solutions led by Indigenous Peoples, youth, women, and people with disabilities.”

and hunting on their ancestral land. Thanks to their documentation and evidence, a provincial court in Ecuador stopped 52 gold-mining projects along the river where the community lived.

Our experience shows that movements, if truly built from the grassroots, are the most important force to counter environmental degradation and injustice and to bring about lasting change in our societies and institutions. Local investment of time, resources, and knowledge lies at the heart of every successful movement, and often small amounts of money can encourage this investment by helping communities get noticed, voice their concerns, and propose their own solutions.

In the last five years, Global Greengrants Fund has focused on supporting women's environmental action. We know that women are disproportionately affected by climate change, especially in rural communities, and we also know they play a key role in defending planetary health. More and more strategies to tackle the climate crisis are led by women, but their role as agents of change is often overlooked and they are hugely underfunded.

Now more than ever, and in the current context of COVID-19, strategies and solutions have to be built by communities who know what is best for them and their environments, which will then have a ripple effect throughout the world. The following are some starting points funders can use for immediate action.

“ More and more strategies to tackle the climate crisis are led by women, but their role as agents of change is often overlooked and they are hugely underfunded.”

Recommendations for funders

- Work with and support grassroots funders like Global Greengrants Fund. Partnering with grassroots women's and environmental funders is a way for foundations based in the Global North to channel resources directly to people and communities most impacted by climate change, and to support their decision-making power.
- Examine grantmaking portfolios and identify gaps and opportunities to develop a gender and environmental lens, and work in partnership with grantee partners to understand how to build and act on this analysis.
- Initiate and support opportunities for environment and gender justice program officers within and among foundations to meet and understand one another's approaches, and seek to build common investment agendas.

MARY ROBINSON FOUNDATION – CLIMATE JUSTICE



Interview part 2 with Mary Robinson, President of the Republic of Ireland 1990-1997, UN High Commissioner for Human Rights 1997-2002, founder of the Mary Robinson Foundation – Climate Justice

Bringing women's voices to the table

When Mary Robinson first talked about the injustice of climate change and small island states and least developed countries, people's response tended to be that all this had nothing to do with them. This has changed since COVID-19, she thinks. It is exacerbating injustices and emphasising the intersectionality between poverty, race, gender, being a migrant, being indigenous, being a person with a disability. 'But we have more empathy for suffering than we used to because we are all suffering to some extent, and this has opened up a space for compassion.'

When Robinson went to her first climate conference, Copenhagen in 2009, human rights and gender were not part of the discussion. Instead, the discussion was technical, largely male, and very scientific. The following year, at the Cancún COP, a group on Women Leadership on Gender and Climate was formed.

Their first success came at Doha in 2012, where the group pushed for changes to introduce gender parity in COP delegations, and started to bring the voices of grassroots, indigenous and young women to the table. This made a great difference because the delegates, mainly city-based and technicians, didn't have a feel for what was happening on the ground, nor did they understand the importance of women's issues. These frontline stories bring out the different and worsening impacts of climate change on women. They also show that women are not just victims; they're also actors for change.

Again, there are lessons to be learned from COVID-19:

- It's largely women, many among the lowest paid, who are helping us address the critical COVID crisis: as care workers, health workers; as cleaners in our hospitals and care homes.
- It's largely women who are giving good leadership in the crisis: Angela Merkel in Germany, Jacinda Ardern in New Zealand, the president of Taiwan, the prime ministers of Norway, Denmark, Finland and Iceland. These women are ready to listen to the science and to take tough decisions. They also have a strong instinct to protect their people from a terrible crisis like COVID.

“ ... the group pushed for changes to introduce gender parity in COP delegations, and started to bring the voices of grassroots, indigenous and young women to the table. This made a great difference because the delegates, mainly city-based and technicians, didn't have a feel for what was happening on the ground, nor did they understand the importance of women's issues.”

Previously, big environmental philanthropies were not all that focused on communities on the front line of the impacts of climate change, so only a small proportion of funding was going to women on the ground – though they were key agents for change and resilience in their communities. Then a constituency began to be built up around climate justice. The Oak Foundation, for example, set up a climate justice resilience fund. The amount of money going into it was still very small, given the importance of building resilience, but it was a start.

Recommendations for funders

- Make sure the voices of women are heard – grassroots, indigenous and young women, migrants, women with disabilities.
 - Make the case to other foundations that money should be going to grassroots projects led by women.
 - Advocate for more gender equality – something the world badly needs.
-



Sonia Medina,
Executive Director,
Climate Change

Integrating a climate lens is vital for foundations working with children

The Children’s Investment Fund Foundation (CIFF) is a London-based philanthropy with offices worldwide. Established in 2002 by Sir Christopher Hohn and Jamie Cooper, its mission is to improve the lives of children in developing countries who live in poverty.

The climate crisis is the single biggest threat to children, today and in the future. This is not simply about future generations. The climate crisis is already with us. Children in developing countries are particularly exposed, both to direct risks related to agricultural production and diseases and to indirect risks such as war or conflict. A family under economic or social pressure is more likely to flee (increasing immigration), take their kids out of school (reducing educational attainment) or marry them off (increasing the incidence of child marriage). More and more evidence suggests that this type of pressure can be a result of phenomena related to climate change.

CIFF has reached the conclusion that it must combine its work on children’s issues with minimising the risk of climate impacts. Integrating a climate lens into CIFF’s portfolio has therefore become critical to fulfil our mission.

Ten years ago CIFF started funding climate change issues with a grant in the UK, even though its children’s portfolio was, and continues to be, focused on South Asia and Africa. This first grant supported a campaign against plans for a new coal power plant in the UK. But coal is a global problem and we need alternatives. CIFF’s portfolio has grown organically over the last decade to include not only power sector reform (replace coal with renewables) but also air quality, clean and livable cities and low-carbon agriculture.

One challenge with working on climate change is measurement. Making impact tangible is crucial. CIFF invests a lot in monitoring and tracking performance of its grants so that impact can be maximised by course-correcting quickly and as necessary.

CIFF is committed to addressing its own impact on carbon emissions. We started measuring our carbon footprint annually a few years ago. We compensate for our emissions by buying EU allowances and Gold Standard offsets. From 2020, we will also adopt our own emission reduction targets.

“One challenge with working on climate change is measurement. Making impact tangible is crucial. CIFF invests a lot in monitoring and tracking performance of its grants so that impact can be maximised by course-correcting quickly and as necessary.”

Few foundations work on climate yet. The street protests by Fridays For Future and others, and the wildfires in Australia and California, have raised climate in the public consciousness.

The COVID-19 pandemic has also underlined society's unpreparedness for a crisis and the need to build resilience in communities. There are many opportunities, throughout Europe and in the rest of the world.

Foundations that do not want to build up their own capacity to work on climate can partner with others, pooling or aligning funds. In general, collaboration is to be encouraged.

“ Foundations that do not want to build up their own capacity to work on climate can partner with others, pooling or aligning funds.”

Recommendations for funders

- The European Green Deal has the potential to be a cornerstone in the European response to climate change and significantly influence policymaking throughout the decade. Decisive support from foundations and funders to shape and push the Deal will create a strong and lasting impact.
- Many foundations are already operating in Africa but interventions on climate change are rare, especially when it comes to mitigation. Working with existing structures and networks to add a climate 'lens' to any charitable work can help create more resilient communities for the continent.
- The electrification of transport is reaching a tipping point. This is an area where targeted investments can have a significant impact and philanthropy can play a unique catalytic role.

CLIMATE INTERSECTION:
Education



Keep life on earth.

Why should education funders care about climate change?

Whether one chooses to focus on health, the environment, or decarbonisation, all action on climate change requires knowledge. But knowledge on its own is not enough; it needs to be translated and disseminated by way of education. Education can enable people to make decisions regarding climate change and adapt to its impacts across intersections.

Youth movements like Fridays for Future can be seen as education as they foster consciousness and knowledge that drives young people to act. In the UK, a lack of knowledge about climate change has even been identified as the most important barrier to engagement in climate action (Otto et al. 2020). Enhancing education has positive effects for other sustainable development goals (Nilsson et al. 2016) and is particularly important for meeting the challenges of climate change (Monroe et al. 2019).

As we discuss the intersection of education in more detail, we look at three core areas:

- Climate science education
- How vocational training can address climate change
- Access to education as a way to foster climate resilience

Climate science education

There is a need for enhanced understanding of the causes, impacts and underlying processes of the Earth system. Science education, a traditional subject in most education systems, needs to include climate change as a central part of the curriculum. Beyond enabling climate action, climate education has positive spillover effects as it can contribute to the relevance and quality of science education generally (Mermer 2010).

However, a challenge in advancing climate education is that it does not fit easily into discipline-based science curricula or assessments. Different methodologies are needed to fill this gap and equip learners with skills and the motivation to work towards a desirable future.

Here, inquiry based, participatory and interdisciplinary real-world and problem-oriented forms of learning are needed (UNESCO Office Bangkok 2012). One way of approaching this challenge is to involve the scientific community in the development of teaching resources and the professional training of teachers to ensure they are enabled to deliver climate change education (IAP 2017).

“It is not only about studying climate change, but also about understanding it. [...] It is not just another course; it is about how everything else we study or do is affected by climate change. It is about understanding the transformation to be able to act on it.”

– Christiana Figueres, Executive Secretary of the UNFCCC 2010-2016 (UNFCCC 2015)

“ There is a need for enhanced understanding of the causes, impacts and underlying processes of the Earth system.”

Vocational training in a changing climate

People have to act on climate change at all stages of their lives, so learning should extend from science education at schools to places of work and daily life. Philanthropic engagement in climate education may address social and emotional aspects of learning, concerning values and identity, and a behavioural element to help people act effectively and responsibly (UNESCO 2019a).

An exemplary but often neglected field of education is vocational training. Germany for example has a long history of such training, but climate change is rarely covered (Schmitt 2014).

Climate change needs to become an integral part of developing the skills, knowledge and attitudes needed for the world of work because these skills shape opportunities for economic, technical and social transformations (Mermer 2010).

Vocational training that incorporates climate change will prepare young people for the future and the challenges of mitigating and adapting to a rapidly changing environment. At the same time, climate change education should encompass learning activities for people of all ages. Acknowledging that learning is a lifelong endeavour highlights institutions other than schools as vital places for climate education. These could be faith based organisations, community groups, labour organisations and the private sector (UNESCO 2016).

“ Vocational training that incorporates climate change will prepare young people for the future and the challenges of mitigating and adapting to a rapidly changing environment.”

POTENTIAL SITES FOR LIFELONG CLIMATE LEARNING



Schools



Vocational training institutions



Workplaces



Community groups



Labour organisations

Education fosters climate resilience

Education funders who do not explicitly target climate education or education for sustainable development can still contribute to the resilience of communities facing the impacts of climate change. Improving access to quality education is an effective measure to combat climate change because it improves the livelihood opportunities and health prospects of affected communities.

Education can reduce vulnerability particularly in poor countries most at risk from climate change. And it can, in some cases, do so more effectively than infrastructure built to help communities adapt to climate change, such as sea walls or irrigation systems. (UNESCO 2016). Yet the education

infrastructure itself needs to be made climate proof so learning can continue through climate-induced disasters (UNESCO Office Bangkok 2012).

As we have seen in this penultimate section of intersections, education's role within climate action is paramount in three main ways. Firstly, incorporating climate science education into curricula is critical to paving the way for greater climate action. Secondly, climate change needs to become an integral part of developing professional skills. And thirdly, improving access to education reduces vulnerability in poor countries who face the biggest climate risks.

For the final segment on intersections, we move away from issues of social justice and delve into the link between climate change and nature conservation.



Dr Barbara Filtzinger,
Head of Education, and
Member of the Strategic
Board of the Office for
Climate Education



Badin Borde, Education
Project Manager and
Member of the Scientific
and Pedagogical
Committee of the Office for
Climate Education

The importance of climate education

Established in 2008 by Siemens AG, Siemens Stiftung's overarching goal is promoting sustainable social development. The three working areas of the Foundation are Education, Culture and Development Cooperation. Within this spectrum, climate-related issues are an integral part of our project work.

For example, the project [Design Thinking in STEM](#) combines STEM (science, technology, engineering, mathematics) education with critical thinking and creative problem solving around the UN Sustainable Development Goals (SDGs). With the Office for Climate Education (OCE) and the European Capacity Building Initiative we co-organise an [annual conference in Chile on Climate Change Education](#). In 2019, together with the Little Scientists' House (Stiftung Haus der Kleinen Forscher), we ran the [International Dialogue on STEM Education](#) to explore how STEM education can empower children to contribute to creating sustainable societies.

We have been focusing on STEM education for years, and it was our positive experience with our international STEM education programme Experimento that led to our support for the OCE. We were actively looking for ways to scale the approach, and discussions with the French Fondation La main à la pâte suggested that getting involved in OCE would be an ideal fit for us. We have now entered into a cooperation agreement with the other OCE partners: climate change is a global challenge that can be addressed effectively only if we work together.

The Office for Climate Education

Preparing young people for living in today's world requires education on the underlying processes and impacts of climate change. This challenges educators because it focuses on the complex interrelations between climate change and the environmental, economic and social dimensions of our lives. To address this gap, a group of nearly 20 foundations and scientific institutions from France, Germany, Ireland, the Netherlands, Uruguay

“Preparing young people for living in today's world requires education on the underlying processes and impacts of climate change. This challenges educators because it focuses on the complex interrelations between climate change and the environmental, economic and social dimensions of our lives.”

and the USA established the OCE in 2018. As one of the founding partners, Siemens Stiftung supports the OCE financially and operationally. We have one seat each on OCE's Strategic Board and on the Scientific and Pedagogical Committee, which is responsible for the content of the teaching materials.

The teaching materials are based on recent climate research and follow a multidisciplinary approach, including subjects from natural, human and social sciences. Their content follows publication of the IPCC reports, breaking down the findings into manageable and easy-to-understand lessons. All resources are made available to teachers in digital format free of charge. The OCE also offers professional training, especially for teachers in developing and emerging countries. This takes the form of field trips and face-to-face or online workshops, conferences and symposiums.

Recommendations for funders

- Connect climate change education and education in science, technology, engineering and mathematics education. These are often seen as separate areas, but they are closely interlinked.
- Support communication on climate science. This involves translating complex scientific knowledge into simple words, objectively considering the facts from all sides. Communication around the COVID-19 pandemic shows that this is possible.



CLIMATE INTERSECTION:

Nature conservation

Keep life on earth.

Why should funders of nature conservation care about climate change?

Changes in ecosystems are some of the most illustrative impacts of climate change. A rise in global mean temperatures becomes visible, for example, when melting glaciers flood river ecosystems, altering their species composition, or when warming oceans lead to the bleaching of entire coral reefs.

For many environmentalists and sympathetic philanthropists, the conservation and restoration of nature is an end in itself. In the context of climate change, existing measures for environmental protection will need to also consider mitigation efforts that reduce its impacts.

One example is restoring entire coastal ecosystems – as opposed to conservation efforts that target a specific species. This type of approach is effective for both nature conservation and tackling climate change effects. Ecosystems such as mangroves, seagrasses and salt marshes remove carbon from the atmosphere and store it in sediments and plants. Simultaneously, they protect people from storm surges and prevent coastal erosion.

Ecosystem services

The effects of climate change on ecosystems not only affect plant and animal life. They influence human well-being just as strongly. Nature provides essential benefits for societies, so called ‘ecosystem services’. These are either components or processes that humans consume directly or that regulate or support the environmental conditions in which we live. Thanks to these services, humans breathe clean air, drink clean water or eat nutritious food – based on the ecosystems’ ability to regulate and maintain soil fertility, pollinate crops and effectively control pests, amongst others.

“Most of nature’s contributions to people are not fully replaceable, and some are irreplaceable” (Díaz et al. 2019).

Human societies depend on functioning ecosystems which, in turn, are entirely dependent on biodiversity, i.e. the totality of existing ecosystems, their species and the range of genetic material therein. Biodiversity supports ecosystems and ecosystem services in two critical ways (Quijas and Balvanera 2013).

Firstly, the more diverse species an ecosystem hosts, the more their functions complement each other. Secondly, the more species exist, the greater the chances that one species will be highly efficient in fulfilling a specific ecosystem function. The importance of a single species is best illustrated with ‘keystone’ species – species with an extensive impact on the whole ecosystem (Thompson 2015).

The reintroduction of grey wolves in Yellowstone National Park (Farquhar 2019), for example, stops elks grazing so intensely on willows. This allows beavers to feed on the willows in winter and grow in population. Beaver dams in turn increase water reservoirs, providing more diverse habitats for fish and songbirds. And the remains from wolf kills now nourish scavengers, from grizzly bears to beetles.

The observed global decline in biodiversity (see chapter on Biodiversity loss) means that ecosystems can no longer provide the range and quantity

“ Nature provides essential benefits for societies, so called ‘ecosystem services’... Thanks to these services, humans breathe clean air, drink clean water or eat nutritious food – based on the ecosystems’ ability to regulate and maintain soil fertility, pollinate crops and effectively control pests, amongst others.”

of services they used to. More than 23% of global land areas have experienced a decline in productivity since 1970, and the tremendous loss of pollinators such as bees is risking crop output of up to 577 billion USD per year globally (Díaz et al. 2019).

Loss of ecosystems might be felt in the medical field too. More than 50% of prescription drugs stem from natural compounds (Saker et al. 2004). A great share of antibiotics come from tropical fungi, and many plants produce toxins useful in medicine for pest and disease vector control. Diminishing biodiversity deprives us of naturally evolved, perfectly adapted defence mechanisms against pests and diseases. This is of great concern in light of increasing antibiotic resistance in bacteria (Saker et al. 2004).

The Covid-19 pandemic is a strong reminder of the connection between healthy people and a healthy environment. As humans encroach natural habitats, they not only drive species declines but also increase human-to-wildlife contact. This encourages viruses to spillover between species: many recurrent and newly emerging infectious diseases that threaten humans originate in animals (Johnson et al. 2020). For example, Covid-19 was most likely transmitted to humans from wild bats (FAO 2020).

Nature-based climate solutions

Protecting and restoring healthy and diverse ecosystems directly supports and ensures human life. Intact ecosystems are extremely important to climate change mitigation and adaptation - consider that two thirds of all man-made greenhouse gas emissions since the Industrial Revolution have been stored in either the oceans or plants and soils (IUCN 2018).

“ More than 50% of prescription drugs stem from natural compounds. A great share of antibiotics come from tropical fungi, and many plants produce toxins useful in medicine for pest and disease vector control.”

INTACT ECOSYSTEMS SEQUESTER CARBON



The amount of man-made greenhouse gas emissions that have been stored in either the oceans or plants and soils since the Industrial Revolution

This adaptive capacity of ecosystems is captured in modern conservation approaches called ‘nature-based climate solutions’. They aim for both an increase of natural carbon sinks like forests and a reduction of emissions from land-use changes such as agriculture. It is estimated that they will potentially provide over one third of the global emission reductions needed by 2030 to limit global warming to below 2°C (Griscom et al. 2017).

Philanthropists interested in activating this potential may support actions ranging from sustainable forest management, afforestation or limiting deforestation, to sustainable agricultural practices, restoration of peatlands, protection of coastal wetlands or the establishment of green roofs and urban spaces, to name just a few.

Many nature-based climate solutions are also very cost-effective because they provide robust measures to tackle climate change and, at the same time, preserve healthy ecosystems to deliver both ecosystem services and habitat for non-human species. For example, 350 million hectares of restored landscape could not only store up to 3 billion tonnes of CO₂ per year but also generate \$170 billion per year in other ecosystem benefits for humans (IUCN 2018).

Yet only 2% of global financing aimed at addressing climate change funds nature-based climate solutions (IUCN 2020). In the Nationally Determined Contributions to mitigate climate change impacts, natural climate solutions remain underrepresented (Beasley et al. 2019). Philanthropists are well placed to fill this gap.

“...only 2% of global financing aimed at addressing climate change funds nature-based climate solutions.”

Trade-offs between climate policy and nature conservation

Although climate policy and nature conservation goals often go together, their aims can also diverge. Trade-offs often emerge because mitigation or adaptation measures have land-use implications. Wind farms, free-standing solar energy installations and energy crops in Germany, for example, occupy more than 2.3 million hectares of land (Wüstemann et al. 2015).

When land is converted to build infrastructure for renewable energy or for adaptation measures such as the construction of dikes, biodiversity and the provision of ecosystem services tend to be negatively affected (Wüstemann et al. 2015).

Yet many of the trade-offs can be solved upon closer analysis. One illustrative concern is the transformation of land for renewable energy systems. Given that climate change is a driver of biodiversity loss, an expansion of renewable energy technologies that reduce emissions will benefit ecosystems. But this benefit needs to be balanced with the damage caused by their construction, installation, and operation (Gawel et al. 2019).

Peatlands, for example, are one of the most efficient carbon sinks nature has to offer. But they are regularly drained and converted into arable land. If such land is used to grow maize for biogas production, the conversion becomes inefficient because the process of draining emits more greenhouse gases than the biogas production saves (Wüstemann et al. 2015).

Another example is the tension between reforestation and the need to increase food production. But a large portion (42%) of reforestation's mitigation potential can come from reducing pasture for beef production through improved efficiency measures and dietary shifts (Griscom et al. 2017).

Nature-based solutions for climate change must focus on the synergies of conservation and climate policy. For this purpose, institutions exist in some countries that help mediate such trade-offs. In Germany, it is the Competence Centre for Nature Conservation and Energy System Transformation, set up with the philanthropic support of the Environmental Foundation Michael Otto (Umweltstiftung Michael Otto) (KNE 2020).

Where there is a conflict between emissions reductions and biodiversity preservation, the focus should be on the latter. This is because prioritising emission reductions can, in some cases, lead to a loss in biodiversity.

Conversely, prioritising biodiversity is more likely to create win-win situations that reduce emissions too (Reside et al. 2017).

A crosscutting solution to halt biodiversity loss and mitigate climate change is the restoration and protection of natural habitats. There needs to be an increase of current targets for protected areas – from the present 10% of all seas, and 17% of all land, to about 30% of each (Roberts et al. 2020).

Investing in ecosystem services and biodiversity provides a promising avenue for philanthropists seeking to work through established funding streams for nature conservation, while creating co-benefits for tackling climate change.

Conversely, nature-based solutions provide a clearer focus on climate change for philanthropists who are mainly concerned with climate but wish to incorporate a conservation element. In both cases, environmental investments are necessary and cost-effective, often have positive side-effects, and are highly visible.

If decisions are taken with different stakeholders to mitigate trade-offs, working on natural habitats and biodiversity will become a crucial intervention in climate change mitigation and adaptation.

Our final section on climate intersections showed how protecting and restoring ecosystems is a powerful way to address both biodiversity loss and climate change. However, we also saw that measures to mitigate climate change can have negative impacts on biodiversity, and looked at ways to mediate that trade-off.



Marie-Stéphane Maradeix,
Executive Director

Accelerating the transition to sustainable food systems

Marina Nahmias founded the Fondation Daniel & Nina Carasso (FDNC) in 2010 in memory of her parents, Daniel Carasso, founder of the Danone Company, and his wife Nina. From the beginning, sustainable food has been in its DNA, as well as arts, the family passion. One of the foundation's first activities was to establish the Daniel Carasso Prize, which honours outstanding multidisciplinary research on sustainable food.

In 2019, following an 18-month process to realign the foundation's strategy and programmes under a common vision of a more sustainable, just and equitable world, a new 5 years strategy has been implemented. Climate issues are addressed throughout all our programmes.

Our work on sustainable food is focused all along the value chain ("from seeds to waste") and has three main objectives:

- Spreading the vision of sustainable food systems through promoting research and shaping the global debate;
- Promoting food democracy to ensure the right to safe, nutritious food that has been justly produced and the right to participate in decisions determining access to food for all, with a specific focus on local food governance;
- Accelerating the transition to agroecological practices and systems.

An important milestone has been the creation of 'The International Panel of Experts on Sustainable Food Systems' (IPES-Food) to promote sustainable food systems around the world. The group consists of about 30 international experts as well as experienced practitioners from civil society and social movements. One of IPES-Food's first reports advocates a paradigm shift from industrial agriculture to diversified agroecological systems. Today, IPES-Food is an independent organisation and an influential voice in policies on food and nutrition in Europe.

Through requests for proposals, Fondation Carasso also supports smaller initiatives. To scale their impact, this year we have decided to target more traditional farmers who would like to make the transition to sustainable practices, providing them with advice and know-how through peer exchange with farmers who have already managed the transition successfully.

“ In 2019, following an 18-month process to realign the foundation's strategy and programmes under a common vision of a more sustainable, just and equitable world, a new 5 years strategy has been implemented. Climate issues are addressed throughout all our programmes.

There seems to be a big mismatch between awareness of the climate crisis in the discourse among international foundations and philanthropists and their actual commitment. To increase foundations' funding of climate issues, we have to stop thinking of sectors like the environment, education or health as completely separate from climate change, and instead see climate as a cross-cutting issue. Together with other foundations networks and with DAFNE (Donors and Foundations Network in Europe), we are supporting a climate pledge by foundations in Europe.

Working on climate issues also means aligning your investments with your charitable objectives. This is possibly the most powerful tool foundations have to tackle the climate crisis. Fondation Carasso joined the DivestInvest initiative in 2015. Since then we have developed an investment charter and decarbonised our investments. We have also put 15% of our capital into impact investments, with a minimum of 6% related to climate issues.

“ There seems to be a big mismatch between awareness of the climate crisis in the discourse among international foundations and philanthropists and their actual commitment. To increase foundations' funding of climate issues, we have to stop thinking of sectors like the environment, education or health as completely separate from climate change, and instead see climate as a cross-cutting issue.”

Recommendations for funders

- Ensure that the way your endowment is invested is aligned with your philanthropic commitment.
- Raise awareness about sustainable food systems among citizens and decision-makers. Foundations focusing on education could educate consumers on healthy and sustainable diets or advocate for better food labelling.
- Support research on solutions that will allow us to mitigate the impact of climate change and build resilience.
- Use your convening power to facilitate cross-sectoral dialogue and cooperation to develop new solutions.



NO
NATURE
NO
FUTURE

Closing remarks

Closing remarks

The aim of this guide is to show that in a world as complex as ours, and with a topic as broad as climate change, it is worthwhile to keep an eye out for synergies and overlapping impacts. Intersections, interconnectedness, network thinking – these are all different expressions for opportunities to increase both the cost-effectiveness and absolute impact of philanthropic funding.

Climate change holds many of these opportunities because it envelopes all human activity. More importantly, it is an irrefutable truth that has to be dealt with – and therefore requires the attention of as many stakeholders as possible. Indeed, when it comes to climate, we are all stakeholders.

It is true, however, that other problems cannot wait. Social injustice is an age-old problem, as is protection of physical and mental health. Providing essential education and enforcing the rights of disadvantaged groups are important steps towards a more liveable world for all, and protecting the environment ensures the sustainability of life on earth. Of all the pressing environmental and social needs that funders could address it is difficult to decide which challenge must be addressed first. This begs the question whether a choice must be made at all – or if it is possible to take on two, three or even four challenges at the same time.

We believe the latter holds true, as long as we know the critical points at which these challenges intersect. These intervention points can be used to apply the lever of philanthropic action and get solutions in motion. These are solutions which are directed at a particular topic but benefit other areas in a strategically planned manner.

You can keep focusing on the topic close to your heart – while making use of spillover effects in adjacent areas. These spillovers happen, whether planned or not. Only you can choose to harness them – or let them go to waste. We hope this guide has helped you see the immense potential of taking the former route.

“Of all the pressing environmental and social needs that funders could address it is difficult to decide which challenge must be addressed first. This begs the question whether a choice must be made at all – or if it is possible to take on two, three or even four challenges at the same time.”

Good climate funding practices for foundations



Information management: Climate change is a fast-changing and complex topic. Allocate enough resources to stay updated on emerging challenges and solutions. Link your knowledge system to your decision-making through regular feedback and exchange.



Funding strategies: Even if climate change is not the central concern of your foundation, it should be addressed when developing new strategies. It is likely that there will be a positive reinforcement between your own funding goals and climate mitigation and adaptation.



Engaging grantees: When granting funds to project partners, you are in a unique position to discuss climate change with your grantees. You can encourage them to mainstream climate action throughout their own organisations, to develop policies on climate change, and to reduce their emissions.



Project work: When discussing and approving grants, it is a good opportunity to put a climate lens on the work you are supporting. This can be done for example by supporting grantees in offsetting their emissions, encouraging them to reduce travel, or motivating them to be responsible consumers.



Communication: If you and your team care about climate change, talk about it with your stakeholders. Set an example for other foundations, donors, and grantees. Let others know this is important to you and why. Climate change is a good opportunity to inspire others and lead by example.



Monitor your emissions: Set up a system to identify and monitor your foundation's own emissions and climate impacts. Once this step is in place you can set up an action plan to reduce emissions and improve climate efficiency. Publish your goals and achievements to encourage public accountability and inspire others.



Risk management: A good first step is to acknowledge climate risks to your organisation and include them in regular assessments. Develop adaptation and mitigation strategies for your foundation.



Finances: Check if your assets are invested in unsustainable products and if they generate revenue in ways that deplete natural resources or fuel climate change. Reinvest in sources that will support green growth.



People management: Review your staff's travel arrangements. Are they necessary, and how can they be reduced and offset? You can go further and analyse how to encourage your staff to live greener lives and see if the staff incentives you offer are in line with this. For example, are you providing free charging for electric cars or company bikes?



Procurement: Businesses listen to their customers. Use your consumer pressure to nudge them to reflect on their climate change strategies and encourage them to be climate friendly. Think through how you can use your buying power to support green and fair businesses.



Nudging: Sometimes the best way to start is to start small. Nudges are subconscious incentives that can help to reduce waste or encourage climate positive behaviour. Proven examples are to slightly reduce the size of plates at a buffet to reduce food waste, place stickers on printers as a reminder to switch them off, or create small games where staff can challenge each other in reducing waste.

List of figures

Graphics in the text have been adapted from the below sources:

Figure 1	Total anthropogenic GHG emissions (GtCO ₂ eq/yr) per economic sector (Edenhofer et al., 2014)	p. 7
Figure 2	Breakdown of top 10, middle 40 and bottom 50% CO ₂ e emitters (Chancel and Piketty, 2015, p.6)	p. 8
Figure 3	Raising the alarm' (Lenton et al., 2019, p. 595)	p. 9
Figure 4	Selected Significant Climate Anomalies and Events in 2019 (NOAA)	p. 10
Figure 5	Examples of global declines in nature, emphasizing declines in biodiversity, that have been and are being caused by direct and indirect drivers of change (Diaz et al., 2019, p. 25)	p. 12
Figure 6	Vote share for populist parties across 32 western societies (1946-2017) (Future Earth, 2020, p. 18)	p. 20
Figure 7	Democrat's and Republican's votes for pro-environmental legislation (The Guardian, 10/11/2019)	p. 21
Figure 8	Major health risks associated with climate change (Haines and Ebi, 2019, p. 267)	p. 34

List of images

Image 1	Markus Spiske on Unsplash, Global climate change strike protest demonstration - No Planet B
Image 2	World Meteorological Organisation, Flooding in Jakarta
Image 3	Hafiz Issadeen, Heavy monsoon showers inundated the roads in Dharga Town, Sri Lanka , May 17, 2010
Image 4	Ross Sneddon on Unsplash, A man flies the Scottish flag as he marches down Edinburgh with thousands of others
Image 5	Vasilis Ververidis, Idomeni, Greece: Immigrants at the border, September 24, 2015
Image 6	Vasilis Ververidis, Idomeni, Greece: Immigrants at the border, September 24, 2015
Image 7	BlackRockSolar, Black Rock Solar Field Trip to The Children's Cabinet with Clayton Middle School
Image 8	Alamy Stock Photo, Young people planting new tree for mangrove reforestation in Satun, south Thailand
Image 9	Markus Spiske on Unsplash, Global climate change strike - No Planet B - Global Climate Strike, September 20, 2019

Bibliography

Agora Energiewende; Aurora Energy Research (2019): The German Coal Commission. A Roadmap for a Just Transition from Coal to Renewables. Available online at www.agora-energiewende.de, checked on 4/1/2020.

Arcanjo, Marcus (2019): Eco-Anxiety. Mental Health Impacts of Environmental Disasters and Climate Change. Edited by Climate Institute. Climate Institute. Washington D.C. Available online at <http://climate.org/eco-anxiety-mental-health-impacts-of-environmental-disasters-and-climate-change/>, updated on 4/1/2020, checked on 4/1/2020.

Bartlett, Sheridan (2008): Climate change and urban children. Impacts and implications for adaptation in low- and middle-income countries. In *Environment and Urbanization* 20 (2), pp. 501–519. DOI: 10.1177/0956247808096125.

Beasley, Erin; Schindler Murray, Lisa; Funk, Jason; Lujan, Breanna; Kasprzyk, Kiryssa; Burns, David (2019): Guide to including nature in naturally determined contributions. A checklist of information and accounting approaches for natural climate solutions. With assistance of Maggie Comstock (CI), Diana Movius (Climate Advisers), John Verdick (TNC), Peter Graham (Climate Advisers), Stephanie Wang (WCS), Nicole Desantis (UNDP), Carly Shonbrun-Siege (CI), and Sarah Bryan (TNC). Edited by Nature4Climate, Conservation International, The Nature Conservancy, Environmental Defense Fund, National Wildlife Federation, Land Use and Climate Knowledge Fund et al.

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.

Berry, Helen L.; Waite, Thomas D.; Dear, Keith B. G.; Capon, Anthony G.; Murray, Virginia (2018): The case for systems thinking about climate change and mental health. In *Nat. Clim. Chang.* 8 (4), pp. 282–290. DOI: 10.1038/s41558-018-0102-4.

Bertelsmann Stiftung (2018): Policy Performance and Governance Capacities in the OECD and EU. Sustainable Governance Indicators 2018. With assistance of Daniel Schraad-Tischler. Bertelsmann Stiftung. Gütersloh. Available online at https://www.bertelsmann-stiftung.de/fileadmin/files/BSt/Publikationen/GrauePublikationen/SGI_Projektbrochure_2018_englisch.pdf, checked on 3/25/2020.

Blunden, J.; Arndt, D. S.; (eds.). (2019): State of the climate in 2018. In *Bull. Amer. Meteor. Soc.* 100 (9). Available online at [doi:10.1175/2019BAMSStateoftheClimate.1](https://doi.org/10.1175/2019BAMSStateoftheClimate.1).

Boffey, Daniel (2020): Amsterdam to embrace ‘doughnut’ model to mend post-coronavirus economy. Dutch officials and British economist to use guide to help city thrive in balance with planet. *The Guardian*. Available online at <https://www.theguardian.com/world/2020/apr/08/amsterdam-doughnut-model-mend-post-coronavirus-economy>, updated on 4/8/2020, checked on 6/12/2020.

Burck, Jan; Hagen, Ursula; Höhne, Niklas; Nascimento, Leonardo; Bals, Christoph (2019): Climate Change Performance Index. Results 2020. Bonn: Germanwatch Nord-Süd Initiative e.V.

Burgess, Robin; Deschenes, Olivier; Donaldson, Dave; Greenstone, Michael (2017): Weather, Climate Change and Death in India. Available online at <http://www.lse.ac.uk/economics/Assets/Documents/personal-pages/robin-burgess/weather-climate-change-and-death.pdf>, checked on 5/8/2020.

Burnell, Peter (2012): Democracy, democratization and climate change. Complex relationships. In *Democratization* 19 (5), pp. 813–842. DOI: 10.1080/13510347.2012.709684.

Calland, Richard (2020): Countering climate denialism requires taking on right-wing populism. Here's how. *The Conversation*. Available online at <https://theconversation.com/countering-climate-denialism-requires-taking-on-right-wing-populism-heres-how-131693>, updated on 2/12/2020, checked on 3/30/2020.

Castanho Silva, Bruno (2018): Populist radical right parties and mass polarization in the Netherlands. In *Eur. Pol. Sci. Rev.* 10 (2), pp. 219–244. DOI: 10.1017/S1755773917000066.

CBD (2018): Climate change is a major and growing driver of biodiversity loss | Convention on Biological Diversity. Edited by Convention on Biological Diversity. Available online at <https://www.cbd.int/article/biodiversityloss-climatechange>, updated on 3/27/2020, checked on 3/27/2020.

Ceballos, Gerardo; Ehrlich, Paul R.; Dirzo, Rodolfo (2017): Biological annihilation via the ongoing sixth mass extinction signaled by vertebrate population losses and declines. In *Proceedings of the National Academy of Sciences of the United States of America* 114 (30), E6089–E6096. DOI: 10.1073/pnas.1704949114.

Chancel, Lucas; Piketty, Thomas (2015): Carbon and inequality: from Kyoto to Paris. Trends in the global inequality of carbon emissions (1998-2013) & prospects for an equitable adaptation fund. Edited by Paris School of Economics. Available online at <http://piketty.pse.ens.fr/files/ChancelPiketty2015.pdf>, checked on 3/25/2020.

Clayton, S.; Manning, C. M.; KRYgsan, K.; Speiser, M. (2017): Mental Health and our Changing Climate. Impacts, Implications, and Guidance. Edited by American Psychological Association, ecoAmerica. Washington, D.C. Available online at <https://www.apa.org/news/press/releases/2017/03/mental-health-climate.pdf>, checked on 5/12/2020.

Clean Air Fund (2018): Clearing the Air. The State of Global Philanthropy on Air Quality. Edited by Clean Air Fund. Available online at <https://www.cleanairfund.org/#resources3>, updated on 3/20/2020, checked on 3/20/2020.

Conticini, Edoardo; Frediani, Bruno; Caro, Dario (2020): Can atmospheric pollution be considered a co-factor in extremely high level of SARS-CoV-2 lethality in Northern Italy? In *Environmental pollution (Barking, Essex : 1987)* 261, p. 114465. DOI: 10.1016/j.envpol.2020.114465.

Dangendorf, Sönke; Marcos, Marta; Wöppelmann, Guy; Conrad, Clinton P.; Frederikse, Thomas; Riva, Riccardo (2017): Reassessment of 20th century global mean sea level rise. In *Proceedings of the National Academy of Sciences of the United States of America* 114 (23), pp. 5946–5951. DOI: 10.1073/pnas.1616007114.

Díaz, S.; Settele, J.; Brondízio, E. S.; Ngo, H. T.; Guèze, M.; Agard, J. et al. (2019): IPBES (2019): Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. Edited by IPBES. Bonn, Germany.

Dibley, Arjuna (2019): How to Talk to a Populist About Climate Change. Edited by Foreign Policy. Foreign Policy. Available online at <https://foreignpolicy.com/2019/03/29/how-to-talk-to-a-populist-about-climate-change/>, checked on 3/30/2020.

Dunne, Daisy (2017): Impact of climate change on health is ‘the major threat of 21st century’ | Carbon Brief. Edited by Carbon Brief. Carbon Brief. Available online at <https://www.carbonbrief.org/impact-climate-change-health-is-major-threat-21st-century>, updated on 2/5/2019+00:00, checked on 4/1/2020.

EC (2018): Climate change on your plate. With assistance of European Commission. Edited by European Commission. Available online at https://ec.europa.eu/info/news/climate-change-your-plate-2018-dec-03_en, updated on 10/28/2019, checked on 4/1/2020.

EC (2020): Investing in a climate-neutral and circular economy. The European Green Deal. Edited by European Commission. European Commission. [Luxembourg].

Eckstein, David; Wings, Maik; Künzel, Vera; Schäfer, Laura (2019): Global Climate Risk Index 2020. Who Suffers Most from Extreme Weather Events? Wether-Related Loss Events in 2018 and 1999 to 2018. Bonn: Germanwatch Nord-Süd Initiative e.V.

Edenhofer, O.; R. Pichs-Madruga; Y. Sokona; E. Farahani; S. Kadner; K. Seyboth et al. (2014): IPCC, 2014: Summary for Policymakers. The Working Group III contribution to the IPCC's Fifth Assessment Report (AR5) assesses literature on the scientific, technological, environmental, economic and social aspects of mitigation of climate change since 2007 when the Fourth Assessment Report (AR4) was released. With assistance of Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Chan. Available online at https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_summary-for-policymakers.pdf, checked on 3/25/2020.

EEA (2018): Air pollution still too high across Europe. In EEA News, 11/29/2018. Available online at <https://www.eea.europa.eu/highlights/air-pollution-still-too-high>, checked on 3/20/2020.

FAO (2020): Food Safety in the time of COVID-19. Edited by Food and Agriculture Organization of the United Nations. Food and Agriculture Organization of the United Nations.

FAO; IFAD; UNICEF; WFP; WHO (2019): The state of food security and nutrition in the world. Safeguarding against economic slowdowns and downturns. With assistance of International Fund for Agricultural Development, United Nations International Children's Emergency Fund, United Nations World Food Programme, World Health Organisation. Rome: FAO .

Farquhar, Brodie (2019): Wolf Reintroduction Changes Ecosystem. Edited by Yellowstone National Park. Available online at <https://www.yellowstonepark.com/things-to-do/wolf-reintroduction-changes-ecosystem>, updated on 5/14/2020, checked on 5/14/2020.

FDSO (undated): The relationship between democracy and sustainable development. Foundation for democracy and sustainable development. Available online at <https://www.fdsd.org/the-challenge/>, checked on 4/6/2020.

Flavell, Alex; Chazalnoël, Mariam Traore (2014): IOM outlook on migration, environment and climate change. Geneva, Switzerland: International Organization for Migration (IOM).

Flegel, Tina; Alber, Gotelind; Röhr, Ulrike; Mungai, Catherine N.; Davis, Felicia; Hemmati, Minu (2009): Gender into climate policy. Toolkit for climate experts and decision-makers. Edited by GenderCC - Women for Climate Justice. Wiesbaden.

Forzieri, Giovanni; Cescatti, Alessandro; e Silva, Filipe Batista; Feyen, Luc (2017): Increasing risk over time of weather-related hazards to the European population. A data-driven prognostic study. In The Lancet Planetary Health 1 (5), e200-e208. DOI: 10.1016/S2542-5196(17)30082-7.

Future Earth (2020): Our Future on Earth 2020. Science Insights into our Planet and Society. Edited by Future Earth, checked on 3/25/2020.

Gardiner, Beth (2019): For Europe's Far-Right Parties, Climate Is a New Battleground. Edited by Yale Environment 360. Yale Environment 360. Available online at <https://e360.yale.edu/features/for-europes-far-right-parties-climate-is-a-new-battleground>, updated on 10/29/2019, checked on 3/30/2020.

Gawel, Erik; Strunz, Sebastian; Lehmann, Paul; Purkus, Alexandra (Eds.) (2019): The European Dimension of Germany's Energy Transition. Opportunities and Conflicts. Cham: Springer International Publishing. Available online at <https://doi.org/10.1007/978-3-030-03374-3>.

Goering, Laura (2018): Why climate change is the biggest global health threat of the century. Edited by World Economic Forum. World Economic Forum. Available online at <https://www.weforum.org/agenda/2018/11/climate-change-biggest-global-health-threat-of-century-doctors-warn/>, updated on 4/1/2020, checked on 4/1/2020.

González Ortiz, Alberto; Guerreiro, Cristina; Soares, Joana; Antognazza, Federico; Gsella, Artur; Houssiau, Michel et al. (2019): Air quality in Europe. European Environment Agency. Luxembourg).

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. Available online at https://oi-files-d8-prod.s3.eu-west-2.amazonaws.com/s3fs-public/file_attachments/mb-extreme-carbon-inequality-021215-en.pdf, checked on 3/25/2020.

Griscom, Bronson W.; Adams, Justin; Ellis, Peter W.; Houghton, Richard A.; Lomax, Guy; Miteva, Daniela A. et al. (2017): Natural climate solutions. In Proceedings of the National Academy of Sciences of the United States of America 114 (44), pp. 11645–11650. DOI: 10.1073/pnas.1710465114.

Guillemot, Joy; Burgess, Jazmin (Undated): Research guides and informs UNICEF's actions to improve the lives of children around the globe. Child Rights at Risk: The case for joint action on climate change. Edited by UNICEF Office of Research - Innocenti. Available online at <https://www.unicef-irc.org/article/928-child-rights-at-risk-the-case-for-joint-action-with-climate-change.html>, checked on 4/15/2020.

Guzmán, José Miguel (Ed.) (2009): Population dynamics and climate change. [this book is in part the product of an Expert Group Meeting on Population Dynamics and Climate Change held on 24 - 25 June 2009]. Expert Group Meeting on Population Dynamics and Climate Change; Population Fund. New York, NY: United Nations Population Fund.

Haas, Tobias (2020): Die Lausitz im Strukturwandel. In PROKLA 50 (198), pp. 151–169. DOI: 10.32387/prokla.v50i198.1853.

Haines, Andy; Ebi, Kristie (2019): The Imperative for Climate Action to Protect Health. In The New England journal of medicine 380 (3), pp. 263–273. DOI: 10.1056/NEJMr1807873.

Hanson, Susan; Nicholls, Robert; Ranger, N.; Hallegatte, S.; Corfee-Morlot, J.; Herweijer, C.; Chateau, J. (2011): A global ranking of port cities with high exposure to climate extremes. In Climatic Change 104 (1), pp. 89–111. DOI: 10.1007/s10584-010-9977-4.

Hauer, Mathew E.; Fussell, Elizabeth; Mueller, Valerie; Burkett, Maxine; Call, Maia; Abel, Kali et al. (2020): Sea-level rise and human migration. In Nat Rev Earth Environ 1 (1), pp. 28–39. DOI: 10.1038/s43017-019-0002-9.

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.

IAP (2017): A Statement on Climate Change and Education. Edited by The Interacademy Partnership for Science. The Interacademy Partnership for Science. Available online at https://www.academie-sciences.fr/pdf/rapport/IAP_111217_gb.pdf, checked on 4/14/2020.

IDMC (2019): Disaster displacement. A global review, 2008-2018. International Displacement Monitoring Centre. Available online at <https://www.internal-displacement.org/sites/default/files/publications/documents/201905-disaster-displacement-global-review-2008-2018.pdf>, checked on 3/31/2020.

Jensen, Lois (ed.) (2020): The impact of marriage and children on labour market participation. With assistance of Ginette Azcona, Antra Bhatt, William Cole, Rosina Gammarano, Steven Kapsos, William Cole David Bescond et al. Edited by International Labour Association, United Nations, UN Women, Women Count. International Labour Association; United Nations; UN Women; Women Count. Geneva, Switzerland. Available online at <https://www.unwomen.org/-/media/headquarters/attachments/sections/library/publications/2020/the-impact-of-marriage-and-children-on-labour-market-participation-en.pdf?la=en&vs=4514>, checked on 5/14/2020.

IOM (Undated): Human Rights-Based Approaches to MECC. Edited by International Organisation for Migration. International Organisation for Migration. Available online at <https://environmental-migration.iom.int/human-rights>, checked on 4/1/2020.

IPCC (2007): Climate Change 2007: Synthesis report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change.. Geneva, Switzerland. Available online at https://www.ipcc.ch/site/assets/uploads/2018/02/ar4_syr_full_report.pdf, checked on 5/12/2020.

IPCC (2014a): Climate Change 2014: Impacts, Adaptation and Vulnerability. Part B: Regional Aspects, Contribution of Working Group to the IPCC Fifth Assessment Report. Intergovernmental Panel on Climate Change. Cambridge. Available online at https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-PartB_FINAL.pdf, checked on 4/1/2020.

IPCC (2014b): Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. IPCC. Geneva, Switzerland. Available online at https://www.ipcc.ch/site/assets/uploads/2018/02/AR5_SYR_FINAL_SPM.pdf, checked on 3/25/2020.

Islam, S. Nazrul; Winkel, John (2017): Climate Change and Social Inequality. Edited by UN Department of Economic & Social Affairs. Available online at https://www.un.org/esa/desa/papers/2017/wp152_2017.pdf, checked on 4/23/2020.

IUCN (2018): Protecting climate by protecting nature. Available online at <https://www.iucn.org/news/climate-change/201812/protecting-climate-protecting-nature>, updated on 12/11/2018, checked on 4/29/2020.

IUCN (2020): Climate change. The climate is in crisis, fortunately a solution is all around us. International Union for Conservation of Nature. Available online at <https://www.conservation.org/priorities/climate-change>, checked on 5/5/2020.

Johnson, Christine K.; Hitchens, Peta L.; Pandit, Pranav S.; Rushmore, Julie; Evans, Tierra Smiley; Young, Cristin C. W.; Doyle, Megan M. (2020): Global shifts in mammalian population trends reveal key predictors of virus spillover risk. In *Proceedings. Biological sciences* 287 (1924), p. 20192736. DOI: 10.1098/rspb.2019.2736.

Jordan, Rob (2019): Global carbon emissions increase. Stanford Woods Institute for the Environment. Stanford University. Available online at <https://news.stanford.edu/2019/12/03/global-carbon-emission-increase/>, updated on 12/16/2019-07:00, checked on 4/8/2020.

Klenert, David; Schwerhoff, Gregor; Edenhofer, Ottmar; Mattauch, Linus (2018): Environmental Taxation, Inequality and Engel's Law. The Double Dividend of Redistribution. In *Environ Resource Econ* 71 (3), pp. 605–624. DOI: 10.1007/s10640-016-0070-y.

KNE (2020): Kompetenzzentrum Naturschutz und Energiewende - Startseite. Edited by Kompetenzzentrum Naturschutz und Energiewende. Available online at <https://www.naturschutz-energiewende.de>, updated on 4/17/2020, checked on 4/17/2020.

Kulp, Scott A.; Strauss, Benjamin H. (2019): New elevation data triple estimates of global vulnerability to sea-level rise and coastal flooding. In *Nature communications* 10 (1), p. 4844. DOI: 10.1038/s41467-019-12808-z.

League of Conservation Voters (2019): 2019 National Environmental LCV Scorecard. First Session of the 116th Congress. League of Conservation Voters. Washington D.C. Available online at http://scorecard.lcv.org/sites/scorecard.lcv.org/files/LCV_2019_Scorecard.pdf, checked on 3/27/2020.

Lenton, Timothy M.; Rockström, Johan; Gaffney, Owen; Rahmstorf, Stefan; Richardson, Katherine; Steffen, Will; Schellnhuber, Hans Joachim (2019): Climate tipping points — too risky to bet against. In *Nature* 575 (7784), pp. 592–595. DOI: 10.1038/d41586-019-03595-0.

Lockwood, Matthew (2019): Right-Wing Populism and Climate Change Policy. Edited by Oxford Research Group Breaking the Cycle of Violence. Available online at <https://www.oxfordresearchgroup.org.uk/blog/right-wing-populism-and-climate-change-policy>, updated on 6/13/2019, checked on 3/30/2020.

Masson-Delmotte, V.; Zhai, P.; Pörtner, H.-O.; Roberts, D.; Skea, J.; Shukla, P. R. et al. (2018): IPCC, 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. Available online at https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_SPM_version_report_LR.pdf, checked on 3/27/2020.

MCC (2017): Deutsche Klimapolitik sozial gerecht gestalten. Mercator Research Institute on Global Commons and Climate Change. Berlin (MCC-Kurzdossiers, 3). Available online at https://www.mcc-berlin.net/fileadmin/data/B2.3_Publications/Kurzdossiers/Klimapolitik/MCC-Kurzdossier_Steuerreform.pdf, checked on 3/23/2020.

MCC (2020): That's how fast the carbon clock is ticking. With assistance of Mercator Research Institute on Global Commons and Climate Change. Mercator Research Institute on Global Commons and Climate Change. Available online at <https://www.mcc-berlin.net/en/research/co2-budget.html>, updated on 4/16/2020, checked on 4/16/2020.

Mermer, Thad (2010): Climate change education for sustainable development: the UNESCO climate change initiative. With assistance of Julia Heiss. Edited by UNESCO. UN Decade of Education for Sustainable Development. Paris, checked on 4/7/2020.

Morlighem, M., Rignot, E., Binder, T. et al. (2020) Deep glacial troughs and stabilizing ridges unveiled beneath the margins of the Antarctic ice sheet. *Nat. Geosci.* 13, 132–137. <https://doi.org/10.1038/s41561-019-0510-8>

NASA (2020a): Causes | Facts – Climate Change. Vital Signs of the Planet. Edited by NASA. Available online at <https://climate.nasa.gov/causes/>, updated on 3/23/2020, checked on 3/25/2020.

NASA (2020b): Evidence | Facts – Climate Change. Vital Signs of the Planet. Edited by NASA. Available online at <https://climate.nasa.gov/evidence/>, updated on 3/23/2020, checked on 3/25/2020.

Nellemann, C., Verma, R., and Hislop, L. (2011): Women at the frontline of climate change: Gender risks and hopes. A Rapid Response Assessment. United Nations Environment Programme, GRID-Arendal. Arendal: UNEP.

NOAA (2020): Paleoclimatic Data for the Last 2,000 Years. National Centers for Environmental Information (NCEI) formerly known as National Climatic Data Center (NCDC). Edited by NOAA. National Oceanic and Atmospheric Administration. Available online at <https://www.ncdc.noaa.gov/global-warming/last-2000-years>, updated on 3/25/2020, checked on 3/25/2020.

NOAA (2019): State of the Climate: Global Climate Report for Annual 2019. Edited by NOAA. National Oceanic and Atmospheric Administration. Available online at <https://www.ncdc.noaa.gov/sotc/global/201913>, published January 2020, checked on 6/8/2020.

OECD (2019): Beyond Growth. Towards a new economic approach. Report of the Secretary General's Advisory Group on a New Growth Narrative. OECD General Secretariat. Available online at [http://www.oecd.org/naec/averting-systemic-collapse/SG-NAEC\(2019\)3_Beyond%20Growth.pdf](http://www.oecd.org/naec/averting-systemic-collapse/SG-NAEC(2019)3_Beyond%20Growth.pdf), checked on 12/6/2020.

Oliver, Tom H.; Heard, Matthew S.; Isaac, Nick J. B.; Roy, David B.; Procter, Deborah; Eigenbrod, Felix et al. (2015): Biodiversity and Resilience of Ecosystem Functions. In *Trends in ecology & evolution* 30 (11), pp. 673–684. DOI: 10.1016/j.tree.2015.08.009.

Otto, Ilona M.; Donges, Jonathan F.; Cremades, Roger; Bhowmik, Avit; Hewitt, Richard J.; Lucht, Wolfgang et al. (2020): Social tipping dynamics for stabilizing Earth's climate by 2050. In *Proceedings of the National Academy of Sciences of the United States of America* 117 (5), pp. 2354–2365. DOI: 10.1073/pnas.1900577117.

Patz, Jonathan A.; Campbell-Lendrum, Diarmid; Holloway, Tracey; Foley, Jonathan A. (2005): Impact of regional climate change on human health. In *Nature* 438 (7066), pp. 310–317. DOI: 10.1038/nature04188.

Pelletier, D. L.; Frongillo, E. A.; Schroeder, D. G.; Habicht, J. P. (1995): The effects of malnutrition on child mortality in developing countries. In *Bulletin of the World Health Organization* 73 (4), pp. 443–448.

Prüss-Ustün, Annette; van Deventer, Emilie; Mudu, Pierpaolo; Campbell-Lendrum, Diarmid; Vickers, Carolyn; Ivanov, Ivan et al. (2019): Environmental risks and non-communicable diseases. In *BMJ (Clinical research ed.)* 364, l265. DOI: 10.1136/bmj.l265.

Quijas, Sandra; Balvanera, Patricia (2013): Biodiversity and Ecosystem Services. In S. A. Levin (Ed.): *Encyclopedia of Biodiversity*: Elsevier, pp. 341–356.

Reside, April Elizabeth; VanDerWal, Jeremy; Moran, Catherine (2017): Trade-offs in carbon storage and biodiversity conservation under climate change reveal risk to endemic species. In *Biological Conservation* 207, pp. 9–16. DOI: 10.1016/j.biocon.2017.01.004.

Roberts, Callum M.; O'Leary, Bethan C.; Hawkins, Julie P. (2020): Climate change mitigation and nature conservation both require higher protected area targets. In *Philosophical transactions of the Royal Society of London. Series B, Biological sciences* 375 (1794), p. 20190121. DOI: 10.1098/rstb.2019.0121.

Rogelj, Joeri; den Elzen, Michel; Höhne, Niklas; Fransen, Taryn; Fekete, Hanna; Winkler, Harald et al. (2016): Paris Agreement climate proposals need a boost to keep warming well below 2 °C. In *Nature* 534 (7609), pp. 631–639. DOI: 10.1038/nature18307.

Röhr, Ulrike (2007): Gender, climate change and adaptation. Introduction to the gender dimensions. Background Paper prepared for the Both ENDS BRIEFING PAPER »Adapting to climate change: How local experiences can shape the debate«, August 2007. With assistance of LIFE e.V. Edited by genanet – Focal Point Gender, Environment, Sustainability. Available online at http://americalatinagenera.org/es/documentos/taller_cc/roehr_gender_climate.pdf, checked on 4/15/2020.

Saker, Lance; Lee, Kelley; Cannito, Barbara; Gilmore, Anna; Campbell-Lendrum, Diarmid (2004): Globalization and Infectious Diseases. A review of the linkages. Special Topics in Social, Economic and Behavioural (SEB) Research. With assistance of TDR Steering Committee for Social, Economic and Behavioural Research. Edited by World Health Organization, World Bank, United Nations Development Programme. Available online at https://www.who.int/tdr/publications/documents/seb_topic3.pdf.

Satterthwaite, David; Archer, Diane; Colenbrander, Sarah; Dodman, David; Hardoy, Jorgelina; Mitlin, Diana; Patel, Sheela (2020): Building Resilience to Climate Change in Informal Settlements. In *One Earth* 2 (2), pp. 143–156. DOI: 10.1016/j.oneear.2020.02.002.

Schmitt, Sylvia (2014): Klimawandel und berufliche Bildung für nachhaltige Entwicklung. Germanwatch. Bonn. Available online at <https://germanwatch.org/sites/germanwatch.org/files/publication/11734.pdf>, checked on 4/15/2020.

The Guardian (10/11/2019): Political polarisation over climate crisis has surged under Trump. London. Available online at <https://www.theguardian.com/environment/2019/oct/11/political-polarisation-climate-crisis-trump>, checked on 3/27/2020.

Thompson, John N. (2015): Keystone Species. Edited by Inc. Encyclopaedia Britannica. Available online at <https://www.britannica.com/science/keystone-species>, checked on 2020.

UN Climate Change Secretariat (2018): Considerations regarding vulnerable groups, communities and ecosystems in the context of the national adaptation plans. Edited by LDCs Expert Groups. Bonn. Available online at <https://unfccc.int/sites/default/files/resource/Considerations%20regarding%20vulnerable.pdf>, checked on 4/7/2020.

UN Educational, Scientific and Cultural Organization (2020): UNITED NATIONS WORLD WATER DEVELOPMENT REPORT 2020. Water and climate change. [S.l.]: United Nations Educational, Scientific and Cultural Organization.

UN Human Rights Office (2019): Climate Change and Poverty. Report of the Special Rapporteur on extreme poverty and human rights. With assistance of Special Rapporteur on extreme poverty and human rights. Edited by UN Human Rights Office, of the High Commissioner. Available online at <https://undocs.org/A/HRC/41/39>, checked on 4/23/2020.

UNEP (2017): Towards a pollution-free planet. Background report. Nairobi, Kenya: United Nations Environment Programme.

UNESCO (2016): Global education monitoring report 2016. Planet: education for environmental sustainability and green growth; 2016. With assistance of Global Education Monitoring Report Team. UNESCO. Paris. Available online at https://www.bne-portal.de/sites/default/files/downloads/UNESCO_2016_Global%20Education%20Monitoring%20Report%202016.pdf, checked on 4/7/2020.

UNESCO (2019a): Educational content up close. Examining the learning dimensions of Education for Sustainable Development and Global Citizenship Education. Paris. Available online at <https://unesdoc.unesco.org/ark:/48223/pf0000372327>, checked on 4/7/2020.

UNESCO (2019b): Gender report. Building bridges for gender equality. Paris: UNESCO (Global education monitoring report, 2019).

UNESCO Office Bangkok (2012): Education sector responses to climate change: background paper with international examples; 2012. With assistance of Regional Bureau for Education in Asia and the Pacific. Bangkok, checked on 4/7/2020.

UNFCCC (2015): Article 6: Climate Education and Training | UNFCCC. Edited by UNFCCC. Available online at <https://unfccc.int/news/article-6-climate-education-and-training>, updated on 5/6/2020, checked on 5/6/2020.

UNICEF; Save the Children (2011): Every Child's Right to be Heard. a resource guide on the un committee on the rights of the child general comment no.12. With assistance of UNICEF. Edited by Save the Children UK.

USGCRP (2016): The impacts of climate change on human health in the United States. A scientific assessment. Washington, D.C.: U.S. Global Change Research Program.

Venton, Courtenay Cabot (Undated): Research guides and informs UNICEF's actions to improve the lives of children around the globe. Making the Case: Costs and benefits of climate change impacts on children. Edited by UNICEF Office of Research - Innocenti. UNICEF. Available online at <https://www.unicef-irc.org/article/921-making-the-case-costs-and-benefits-of-climate-change-impacts-on-children.html>, updated on 4/15/2020, checked on 4/15/2020.

Voss, Martin (2008): The vulnerable can't speak. An integrative vulnerability approach to disaster and climate change research. In *Behemoth* 1 (3). DOI: 10.1524/behe.2008.0022.

Warren, Phillip Dane (2016): Forced migration after Paris COP21. Evaluating the "climate change displacement coordination facility". In *Columbia Law Review* 116 (8). Available online at <https://columbialawreview.org/content/forced-migration-after-paris-cop21-evaluating-the-climate-change-displacement-coordination-facility/>, checked on 3/30/2020.

Watts, Nick; Amann, Markus; Arnell, Nigel; Ayeb-Karlsson, Sonja; Belesova, Kristine; Boykoff, Maxwell et al. (2019): The 2019 report of The Lancet Countdown on health and climate change. Ensuring that the health of a child born today is not defined by a changing climate 394 (10211), pp. 1836–1878. DOI: 10.1016/S0140-6736(19)32596-6.

WEF (2020): The GLObal Risks Report 2019. 15th Edition. World Economic Forum. Geneva, Switzerland, checked on 4/16/2020.

Wellbeing Economy Alliance (2020): The Wellbeing Economy Governments partnership. Wellbeing Economy Alliance. Available online at <https://wellbeingeconomy.org/wego>, updated on undated, checked on 6/12/2020.

WFP (2019): Dry Corridor Crisis. (Guatemala, El Salvador, Honduras, Nicaragua). Edited by World Food Programme. World Food Programme. Available online at https://reliefweb.int/sites/reliefweb.int/files/resources/Dry%20Corridor_Dashboard_SEP%202019_EXT.pdf, updated on 9/1/2019, checked on 4/1/2020.

WHO (2018): World Mental Health Day 2018. World Health Organization. Available online at https://www.who.int/mental_health/world-mental-health-day/2018/en/, updated on 4/15/2020, checked on 4/15/2020.

WHO (2020): Vector-borne diseases. Edited by World Health Organization. Available online at <https://www.who.int/news-room/fact-sheets/detail/vector-borne-diseases>, updated on 4/1/2020, checked on 4/1/2020.

World Bank (2018): Groundswell. Preparing for internal climate migration. Edited by World Bank. Available online at <https://www.worldbank.org/en/news/infographic/2018/03/19/groundswell---preparing-for-internal-climate-migration>, checked on 4/1/2020.

World Bank (2019): Population ages 0-14 (% of total population) | Data. Available online at <https://data.worldbank.org/indicator/sp.pop.0014.to.zs>, updated on 4/15/2020, checked on 4/15/2020.

Wu, Xiao; Nethery, Rachel C.; Sabath, Benjamin M.; Braun, Danielle; Dominici, Francesca (2020): Exposure to air pollution and COVID-19 mortality in the United States: A nationwide cross-sectional study.

Wüstemann, Henry; Hartje, Volkmar; Bonn, Aletta; Hansjürgens, Bernd; Bertram, Christine; Dehnhardt, Alexandra et al. (2015): Natural capital and climate policy. Synergies and conflicts : summary for decision makers. Leipzig: Naturkapital Deutschland - TEEB DE. Available online at https://www.ufz.de/export/data/global/190504_TEEB_DE_Climate_report_summary_Eng.pdf, checked on 5/5/2020.

WWF (2015): Impact of Climate Change on Species. Gland, checked on 4/16/2020.

Zagorac, Ivana (2016): How Should We Treat the Vulnerable? Qualitative Study of Authoritative Ethics Documents. In *Journal of health care for the poor and underserved* 27 (4), pp. 1656–1673. DOI: 10.1353/hpu.2016.0154.

Zhao, Chuang; Liu, Bing; Piao, Shilong; Wang, Xuhui; Lobell, David B.; Huang, Yao et al. (2017): Temperature increase reduces global yields of major crops in four independent estimates. In *Proceedings of the National Academy of Sciences of the United States of America* 114 (35), pp. 9326–9331. DOI: 10.1073/pnas.1701762114.



Active Philanthropy was founded in 2006. It is a social enterprise that supports philanthropists, social investors and business families who want to make a lasting difference in protecting the planet for future generations.

For donors who wish to ensure a maximum impact of their philanthropic commitments, the organisation offers strategy design and analysis, grant management services, access to a portfolio of pre-screened climate projects and NGOs, as well as other bespoke support. It also advises philanthropists on how to realign their existing portfolios in light of the climate crisis.

Since 2007, Active Philanthropy has been organising expeditions to Greenland for philanthropists to explore the causes and witness the impacts of climate change. Jointly with scientists and climate experts, participants learn about concrete options for climate philanthropy and how to start their journey towards impactful engagement.

In 2019, Active began working in close collaboration with the Children's Investment Fund Foundation (CIFF), Europe's largest climate funder, to increase the awareness and motivation to act on climate change among foundations and philanthropists.