CLEAN AIR FUND

THE STATE OF GLOBAL AIR QUALITY FUNDING 2022

CLIMATE POLICY INITIATIVE

The Clean Air Fund commissioned this report. Thank you to Climate Policy Initiative and everyone who contributed.

ABOUT THE CLEAN AIR FUND

The Clean Air Fund is a global philanthropic organisation that works with governments, funders, businesses and campaigners to create a future where everyone breathes clean air. We fund and partner with organisations across the globe that promote air quality data, build public demand for clean air and drive action. We influence and support decision makers to act on air pollution.

ABOUT CLIMATE POLICY INITIATIVE

Climate Policy Initiative is an analysis and advisory organization with deep expertise in finance and policy. Our mission is to help governments, businesses, and financial institutions drive economic growth while addressing climate change. Climate Policy Initiative has six offices around the world in Brazil, India, Indonesia, the United Kingdom, and the United States.

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Impact on Urban Health

FOREWORD

VANESSA NAKATE
CLIMATE JUSTICE ACTIVIST

As a Ugandan, my perspective on the climate crisis has been shaped by extreme weather events I have witnessed around me. Rising heat, droughts, landslides, floods... Our communities are bearing the brunt of a crisis we didn't create, while global policymakers and leaders continue to delay real action.

Because of this, I felt like I had to act. In 2019, I started striking in my hometown, Kampala, to help raise awareness about the climate crisis — joining a global movement of millions of young climate activists.

I want to talk about an often overlooked aspect of the climate crisis: toxic air pollution. This secret weapon remains hidden in plain sight, its connections to the climate emergency poorly understood. These days, few doubt the damage that fossil fuels are doing to the climate. But there is less attention paid to the havoc that air pollution from the burning of coal, oil and gas inflicts on our health. The effects that invisible particulate matter has on our lungs, hearts and brains are truly shocking.

Simply put: fossil fuels are killing us. In 2019 alone, dirty air killed over one million people in Africa. In 2018, more than 9 million people died prematurely simply by breathing air made toxic from the burning of coal, oil and gas — according to a Harvard study.

And the devastating health impacts of air pollution cost countries billions. This trend is set to worsen as African economies industrialise, locking in infrastructure that pumps more carbon and other pollutants into the atmosphere. These policies are a death sentence for people in communities like mine.

As UN Secretary-General Antonio Guterres has warned, investing in new fossil fuel production and power plants is "moral and economic madness".

But it is not too late to choose a different path, and there are plenty of reasons why we should do so. The 2022 IPCC report on mitigation showed that the financial value of health benefits from improving air quality alone would far exceed the costs of meeting the goals of the Paris Agreement.

And yet, many donors and policy makers seem to be missing this opportunity. The State of Global Air Quality Funding 2022 shows that air quality receives less than 0.1% of philanthropic funding and only 0.5% of international development funding. Development funding commitments towards air quality have even declined in recent years.

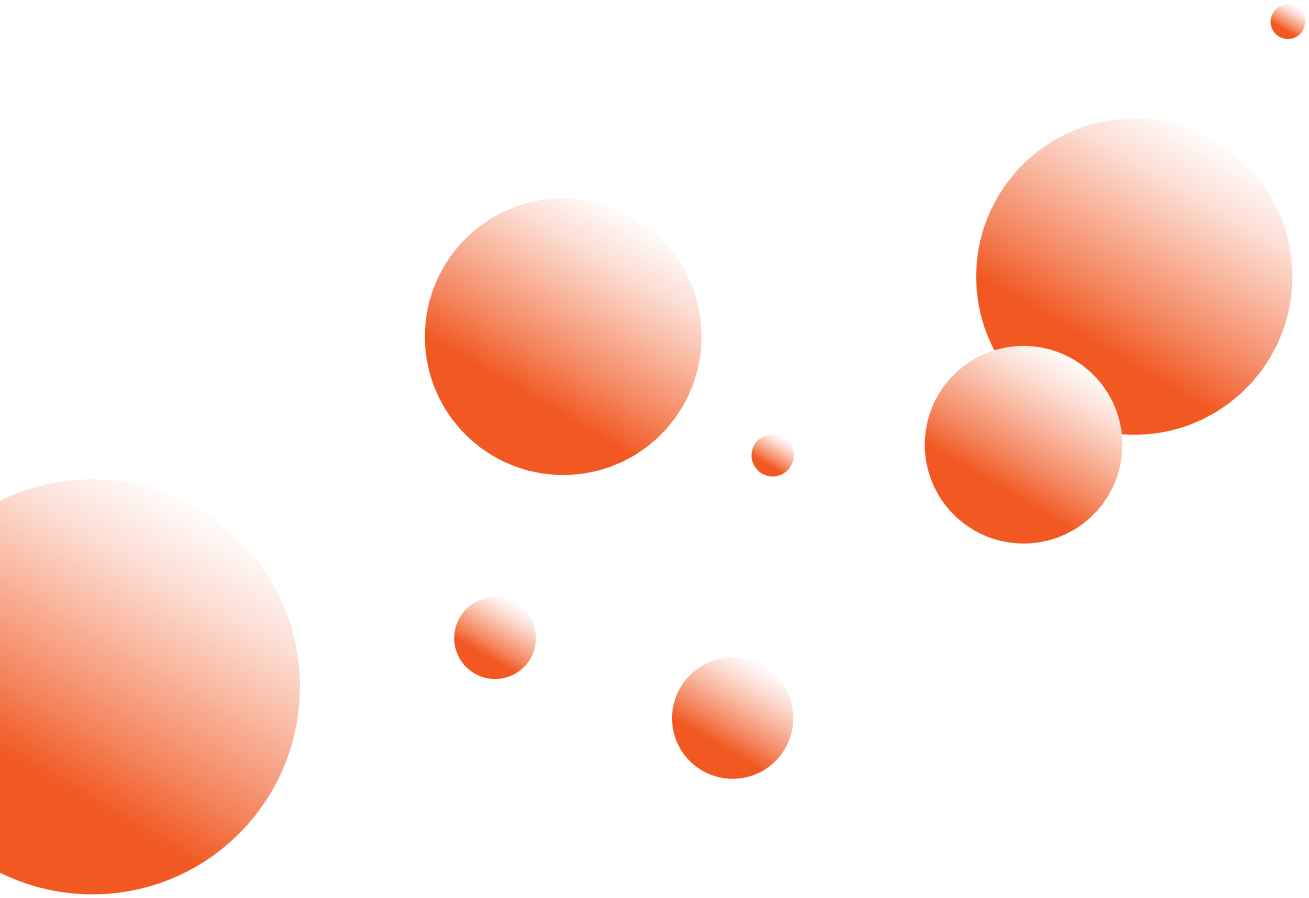
Despite flashy announcements on phasing out fossil fuels, since 2015 fossil fuel projects have received over four times more international development funding than air quality projects. When you look just at the African continent, 36 times more of this money has been invested in fossil fuel projects than in clean air.

We must start connecting the dots. Too often we treat climate change and air pollution as separate issues. It is shocking that 98% of international public climate finance fails to consider air pollution as an explicit priority. If we start prioritising air pollution, we can make a huge difference quickly.

As an African country, Egypt, prepares to host the next UN climate summit, the message from this research is clear: invest in solutions which tackle air pollution and climate change together.

It will save millions of lives, improve the health and well-being of billions of people around the world – and pay for itself several times over. It is time for governments to hear the voices of people all around the world who are calling for leaders to clean up our air and protect our health.

We cannot eat coal. We cannot drink oil. And we most certainly cannot breathe gas.



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EXECUTIVE SUMMARY

It's an overused cliche to talk about win-wins these days, but air pollution merits the label.

This is a universal health problem – 99% of the world's population breathes air that exceeds World Health Organization air quality guidelines. Approximately 4.5 million people die every year as a result.

At the same time, cleaning the air can be a massive opportunity. Because both air pollution and climate change are mainly caused by burning fossil fuels, they can be tackled together. Toxic air disproportionately affects the most vulnerable, so addressing it will also help reduce inequality. And because it massively hampers workforce productivity, initiatives which clean the air also serve to boost sustainable economic development.

This report suggests we are missing a trick. By tackling these problems in isolation, funders, policymakers and other key players drastically overlook the potential of clean air to deliver benefits across the board. Ultimately, this tunnel vision is costing lives, hampering our climate efforts, stifling sustainable development and wasting aid money.

This is not the first time we've made this point. Published each year, this report provides the only global snapshot of projects funded by donor governments and philanthropic organisations to tackle air pollution. Its purpose is to identify gaps in funding and opportunities for strategic investment and collaboration which will deliver clean air for all. It covers things like commitments made by each type of funder to date, trends over time, geographical distribution and methods of funding.

In just one example of the scale of the opportunity we are missing, it finds that between 2015 and 2020 air pollution projects accounted for just 0.5% of total international development funding and less than 0.1% of philanthropic foundation funding. Given the damage we know air pollution does to our health, economies and environment, there is no sound financial or political argument for this underinvestment. We urgently need to significantly increase direct funding to tackle air pollution in its own right.

Accounting for air pollution impacts will also lead to better decisions in other key areas. Broadly speaking, when you factor in the benefits of cleaner air gained from climate actions, and vice versa, you strengthen the case for good solutions which presently lack funding or political support. That is why, as the world prepares for COP27 in Egypt, this research looks closely at funding that tackles both air quality and climate change together. Not only does this deliver synergies and efficiencies, air quality benefits provide quick, concrete wins which build public support for more climate action.

Our analysis finds that a tiny portion - roughly 2% - of international public climate finance explicitly tackles air pollution. While this is alarming right now, it also points to scope for significant quick wins if we can join forces and tackle these challenges as two sides of the same coin.

We are not there yet. Perversely, this research shows that several times more development funding is going to prolonging fossil fuel use than fighting air pollution. As the consequences of the climate crisis grow starker, this appears to be an exceptionally poor use of aid money. It urgently needs to change if we are to achieve the targets of the Paris Agreement or a host of the Sustainable Development Goals.

Africa provides many of the starkest examples of this short-sighted and potentially counterproductive approach. Governments, banks and donor agencies committed 36 times more money to fossil fuel-prolonging projects in Africa than clean air measures in 2015-2021. Again, the findings also show what is possible if we shift our approach quickly and strategically and succeed in stopping air pollution from spiralling further as urbanisation and industrialisation on the continent increase at pace.

Realising the potential of clean air to unlock solutions to some of our greatest challenges will not happen overnight or by itself. It will require coordination, collaboration and a willingness to take bold actions together. But there can be no doubt it will be worth it. More money, better spent, really can buy clean air. Governments and funders must act fast, starting with COP 27 in Egypt later this year. At the Clean Air Fund, we are here to help make it happen.

KEY FINDINGS

International development funders

Between 2015-2021, international development funders committed $11 billion (around $1.5 billion per year) to projects that purposely work to improve outdoor air quality.

This accounted, on average, for just 0.5% of total international development funding, which totalled $1.9 trillion in 2015-2020 (or $324 billion per year).

More specifically:

- Grant funding, which is much needed to avoid saddling low-income countries with more loan debt, represented only 6% of total air quality commitments.
- Air quality funding was concentrated in a handful of Asian countries, while in regions such as Africa and Latin America it lagged behind.
- $7.6 billion of air quality funding (72%) simultaneously addressed climate change, largely via mitigation projects in the transport and energy sectors.
- Just 2.2% of international public climate finance - the share of international development funding contributing to the goals of the Paris agreement - explicitly tackles air pollution. This small proportion indicates that climate finance is a large untapped source of funding for the clean air agenda.
- Between 2015-2021, $46.6 billion was committed by international development funders to projects that prolonged the use of fossil fuels, more than four times the amount dedicated to air quality projects in the same period.

Philanthropic foundations

In 2021, total air quality funding by philanthropic foundations rose by 36% to an all-time high of $63.8 million but remains less than 0.1% of total philanthropic foundation spending.

More specifically:

- The substantial jump between 2020 and 2021 was partly driven by a small number of large grants, indicating an increased interest in air quality from big foundations and a shift in funding practices.
- The number of grantees receiving air quality finance continued to grow, reaching an all-time high in 2021.
- The US, China and India continued to receive the bulk of philanthropic foundation funding for air quality, while Africa, Latin America and the rest of Asia lagged behind.
- The majority of philanthropic foundation spending on air quality continues to come from foundations working on climate, environment or energy (CEE), though foundations focused on health, social justice and childhood development are increasingly engaging with the clean air agenda.
- The majority of foundation-funded air quality projects are simultaneously aiming to tackle climate change, however, just 2% of total foundation climate mitigation funding is realising the health and economic benefits associated with improved air quality.

RECOMMENDATIONS

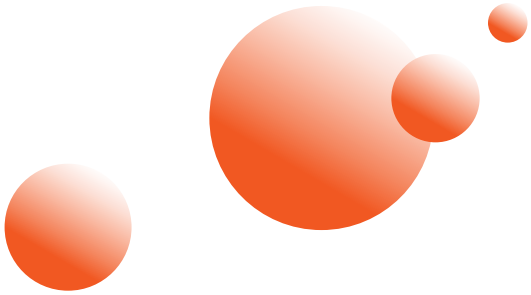
To accelerate action to curb the growing threat of global air pollution, we recommend the following actions by funders to increase the volume of funding for air quality, heighten its impacts, and build a stronger ecosystem for clean air action:

All funders should:

1. **Significantly increase explicitly designated air quality funding, including within climate action and sustainable development programmes, demonstrating political urgency.** Despite the short and long term benefits, not enough priority is given to integrating action on air quality, health and climate. Convening a global annual air quality stocktake – that would celebrate improvements, highlight shortcomings and offer support to countries – could galvanise momentum behind the clean air agenda and facilitate better coordination among donors to avoid duplicating efforts.
2. **Drive joined-up action on integrating air quality and climate into public and private investments and expenditure, including improving cooperation and coordination within government administrations, and with other stakeholders.** Air pollution and climate action should be addressed via integrated approaches that consider synergies between complementary policy goals as well as potential negative trade-offs that would worsen air quality or slow climate action. Better accounting for climate finance with air quality co-benefits will allow funders to track and measure progress towards overlapping goals and increase the impact of their funding.
3. **Prioritise investment in air quality data programmes that make information and analysis publicly available, accessible and relevant.** Data on air quality and the sources of local pollution are essential for identifying and managing effective, contextually-appropriate solutions. There is also opportunity to harmonise greenhouse gas emissions estimation methodologies with, and alongside, air pollution inventories to further joined-up action.
4. **Target air quality funding to underserved regions.** Africa, Latin America and some regions in Asia consistently lag behind as recipients of funding from both philanthropic and development funders. By working together to understand and address funding gaps, funders can intervene early to reduce inequalities in access to clean air, prevent the problem getting exponentially worse, and achieve air pollution and climate benefits for almost half of the world's population.

International development funders should:

1. **Develop and coordinate a global donor strategy** – spearheaded by champion governments - that aims to increase spending effectiveness and leverage from international public finance in reducing global air pollution. This means:
    - A marked uplift in the scale of air quality spending worldwide, including efficiencies made by having a more joined-up approach with climate action and integration into infrastructure and service investments.
    - Systematically capturing and communicating the health, environmental and development benefits of air quality expenditure to build awareness of it as a unique investment and impact opportunity.
    - Actively seek a wider geographic spread in clean air investment portfolios.
    - Using innovative financial instruments such as outcome based finance, guarantees and de-risking for eligible projects, to catalyse further investment in the clean air space.
    - Committing to improve reporting of development funding of air quality to help better coordinate development activities, especially where funding comes from multiple government departments or agencies.
2. **Increase the volume of grant-based funding to tackle the inequitable air pollution-related disease burden in low- and middle-income countries**. The majority of air quality funding is provided in the form of loans, which may aggravate the growing debt burden in low- and middle-income countries. Increasing the grant component of air pollution development assistance can help kickstart pollution-reducing projects in countries with limited public resources, and help to address the disproportionate air pollution-related disease burden they face.
3. **Phase-out all new investments in fossil fuel-prolonging activities while significantly upscaling investments in new clean technology and energy**. Despite increased political momentum to phase out fossil fuels, development funding to fossil fuel-prolonging projects still outpaces air quality funding fourfold, jeopardising the clean air agenda, global climate goals, and development objectives more generally. Fossil fuel funding should be in exceptional cases only and should diminish swiftly, with the priority placed on investing in a just, clean transition.



Philanthropic foundations should:

1. **Invest more in improving ambient air pollution for better public health, childhood development, social justice, sustainable cities and climate outcomes.** Different types of funders can increase their engagement with the issue in different ways:

    a. Climate, energy and environment funders should integrate air quality considerations and evaluations into a larger proportion of their work, uncovering previously unrealised health and economic impacts and simultaneously strengthening an additional push for reduced emissions.

    b. Funders working on health, early childhood development and cities and mobility, should accelerate air quality funding or start to fund such projects, focusing on synergistic areas e.g., improving air quality around schools.

    c. There is a need for funders with specialist air quality programmes of work - especially those working on health, childhood development, equity, climate and urban design – to help build clean air expertise, capacity and collaborations through their funding to advance progress.

2. **Funders making 'big bets' on structural solutions to complex problems should** both (i) consider air pollution as a worthy standalone area for investment that can achieve transformative impact; and (ii) deeply integrate air quality into project design and evaluation if the work covers key parallel topics such as fossil fuel use, non-communicable diseases and early childhood development.

3. **Consider how their grant funding can be used to develop 'proof of concept' projects to help leverage investments from other funder types**. Philanthropic foundations are able to pilot and innovate with more flexibility and tolerate higher levels of risk than development funders. As such, their funding can act as a stimulus, building localised cases for larger investments.

4. **Collaborate, pool funds and share learning and best practices to ensure existing and new funders achieve maximum impact.** The number and breadth of foundations making air quality grants is rising year-on-year, including very large funders making grants on the issue for the first time in 2021. Coordination and knowledge sharing between existing and new funders is needed to ensure maximum impact.

5. **Apply a social justice and equity lens to air quality grant making** to ensure that actions to improve ambient air quality are actively reducing the health and social disparities associated with air pollution, not maintaining or worsening them.

“By working together to understand and address funding gaps — for example by investing in under-funded regions in Africa, Latin America and Asia — funders can achieve air pollution and climate benefits for almost half of the world’s population.”

1. INTRODUCTION

This is the fourth annual State of Global Air Quality Funding report. It provides an overview of funding flowing to projects that tackle air pollution between 2015 and 2021 from two sources: international development funders and philanthropic foundations.[a] The report identifies gaps and opportunities within the clean air funding landscape, examining how funding compares to the scale of the global air pollution crisis and to funding provided to fossil fuel prolonging projects which may work against the clean air agenda. This year for the first time, the report also focusses on international public climate finance flows and analyses the portion of air quality funding that simultaneously tackles air pollution and climate change (see Section 1.2 for more detail).

The report is aimed at decision makers, policy makers, development practitioners and philanthropic foundations seeking to understand the current state of air quality funding and identify and respond to funding gaps on air quality.

1.1 CONTEXT

Poor air quality is a universal issue. Almost the entire global population (99%) breathes air that exceeds $PM_{2.5}$ air quality guidelines set by the World Health Organization (WHO), with low- and middle-income countries suffering from the highest exposures.[1] The dire state of air quality worldwide is a silent pandemic, with approximately 4.2 million people dying every year as a result of exposure to outdoor air pollution. Air pollution is the most dangerous environmental threat to human health, alongside climate change,[2] and is the fifth biggest killer by health risk factor.[3] It causes asthma, strokes, heart attacks and dementia, stunts the lung growth of children and inhibits their learning at school. Furthermore, particulate air pollution is found to take 2.2 years off global average life expectancy.[4] This is more than three times that of alcohol use and unsafe water; six times that of HIV/AIDS; and 89 times that of conflict and terrorism.[5]

> **“Poor air quality is a silent pandemic that disproportionately affects low- and middle-income countries”**

a For the purposes of this report, international development funding includes all public sources of development finance and therefore does not include development funding from philanthropic foundations, which are analysed separately.

SOURCES OF AIR POLLUTION

Air pollutants are emitted from a range of sources and may have natural, anthropogenic or mixed origins.

Natural sources include volcanic eruptions and wind-blown dust, while anthropogenic sources include: burning fossil fuels for electricity generation, transport, industry and households; industrial processes for example in the mining sector; agriculture; and waste management.

Pollutants can be classified as either primary or secondary. Primary polluntants are those that are emitted directly from source, including nitrogen oxides (NOx), sulphur dioxide (SO2) and primary particulate matter (PM). Secondary pollutants on the other hand, form in the atmosphere as other pollutants interact with one another and include ground-level ozone and secondary PM.

In this report ambient air pollution is considered broadly. The data on air quality funding does therefore not distinguish between pollutants.

Air pollution-related disease is influenced by income levels, access to nutrition and underlying diseases, with already vulnerable people and communities most at risk.[6] As with the disproportionate impacts of the COVID-19 pandemic, the global air quality crisis compounds and worsens existing inequalities.

At the same time, investments to improve air quality air bring enormous potential. Cleaning our air is a magic bullet that can solve some of society's biggest challenges at the same time, from public health to climate change, childhood development, social justice and sustainable economic growth (see Box 1.1). Although some types of air pollution temporarily mask warming, in general, the sources of air pollution and climate change overlap substantially.[b] Given these shared sources, action on air pollution and climate change can and should be joined-up. This will harness the synergies between complementary actions and deliver more cost effective, faster and fairer results with the same resources. Moreover, integrating immediate, local air pollution concerns – that have tangible implications for individuals – into longer-term climate strategies can help to increase buy-in on the latter, allowing benefits to be realised today rather than some time in the future.

> **"Cleaning our air can be a magic bullet to solve some of society's biggest challenges at the same time"**

b It is important to note that not all air pollution affects climate. There are pollutants that could and should be controlled because of their impact on health alone.

THE BENEFITS THAT CLEAN AIR CAN DELIVER

The cost of cleaning up our air pales in comparison to the benefits of action: the financial value of the health benefits derived from better air quality are expected to exceed the costs of meeting Nationally Determined Contributions ($7.5 trillion) submitted under the Paris Agreement.[7] Policy makers must consider this against the annual global welfare costs of premature deaths attributable to PM2.5, which are projected to rise from $3 trillion in 2015 (that is, 4% of global GDP[8]) to somewhere in the range of $18-25 trillion by 2060,[9] emphasising the significant returns to investing early.

By supporting clean air efforts, funders can prevent premature deaths in the elderly population,[10] and also prevent children from growing up unhealthy (childhood exposure has lasting impacts on lung function)[11] and help halt the negative cognitive impacts of air pollution[12] (including earlier dementia).[13] That's because funding clean air is a leverage investment. It will achieve many positive knock-on impacts for health as well as climate.

Just as the COVID-19 pandemic has been a key driver of public health policies worldwide, the year of COP27 can drive urgency and momentum to address the global air quality crisis, ensuring a healthy future for people and the planet alike.

"The financial value of the health benefits derived from better air quality is expected to exceed the costs of meeting Nationally Determined Contributions (NDCs)."

BOX 1.1: AIR QUALITY AND THE SUSTAINABLE DEVELOPMENT GOALS

Improving air quality directly supports the achievement of several of the UN's Sustainable Development Goals (SDGs). Policies and action tackling air pollution, for example, have a direct positive impact on population health (SDG3), further resulting in increased labour productivity and economic growth (SDG8) and better education (SDG4).[c] Building sustainable cities and communities (SDG11) relies on safe levels of PM2.5, while achieving universal access to sustainable energy (SDG7) implies shifting away from the dirty fuels that cause both outdoor and indoor (household) air pollution.

In addition, the most vulnerable people and communities – children, women and the elderly – are usually those who suffer the most from air pollution; hence, policies and actions to improve air quality can also contribute to reducing inequalities (SDG10; SDG5).

The links between air quality and climate action are firmly established.[11] As both air pollution and climate change are mainly caused by burning fossil fuels, air quality action is also often climate action (SDG13).

Tackling air pollution is critical to achieving most of the SDGs and a sustainable future for all.

c Air pollution has been linked to lower education achievements (Clark-Reyna et al. (2015) 'Residential exposure to air toxics is linked to lower grade point averages among school children in El Paso, Texas, USA.' Popul Environ, 37(3), 319-340. Available at: https://pubmed.ncbi.nlm.nih.gov/27034529/).

1.2 SCOPE OF THE ANALYSIS

The report analyses funding between 2015 and 2021 to projects that tackle outdoor or "ambient" air pollution from two pools: international development funders and philanthropic foundations (see Table 1.1).[d] Each is considered separately – in Chapter 2 and 3, respectively – so as to better capture and understand specific trends in their air quality funding.

As air pollution is a local as well as a public health issue, it is not surprising that the majority of "**air quality funding**" comes in the form of national and local government spending. EU27 governments, for example, together spent $17.6 billion on domestic pollution abatement in 2020.[14] Domestic public air quality funding is a vital source of air quality finance but is beyond the scope of this report.

Given the impact of air pollution on human and economic development, it should be a major development issue. Hence international development funders and philanthropic foundations represent key sources of funding for air quality interventions.

TABLE 1.1. TYPES OF FUNDERS ANALYSED IN THE REPORT

Type of funder	Description
International development funders (Chapter 2)	Multilateral development banks, bilateral development agencies and governments that provide **international development funding** in the form of development aid, concessional and non-concessional loans, as well as grants, for development purposes e.g., air quality. This includes (i) official development assistance (ODA), (ii) other official flows (OOF); and (iii) flows from other public development funders that are not OECD-DAC members (e.g., Islamic Development Bank). A share of the funding provided by these funders is directed to climate mitigation and adaptation projects contributing to the goals of the Paris Agreement; we refer to this share of international development funding as **international public climate finance**.[e]
Philanthropic foundations (Chapter 3)	Non-profit or charitable organisations that provide grants across a range of fields including air quality (referred to as **philanthropic foundation funding** in this report). These philanthropic foundations are funded by individuals, families, businesses or through public donations, and may be structured, governed and regulated in a variety of ways.

d Due to incomplete data on international development funding, 2021 figures are to be considered as preliminary and might change in future iterations of this analysis.

e In this report, tracking international public climate finance is done with a different methodology from the analysis by the OECD on the progress of the $100 billion per year that developed countries should commit to assist developing countries to meet climate goals. Therefore, the two assessments are not directly comparable, although there may be certain overlaps in what they capture. For more details, please see Annex.

For the first time this year, we have cross-analysed data on air quality funding with data on climate finance provided by international development funders and philanthropic foundations.[f] This made it possible to analyse the portion of air quality funding deliberately and simultaneously addressing climate change, referred to in this report as **"air quality & climate funding"**.

This year, we have expanded our analysis of international development funding that goes to **"fossil fuel-prolonging"** projects to capture flows between 2015 and 2021. This allows comparison with air quality funding over the same period. Such finance is likely to work against the clean air agenda by prolonging the use of dirty fuels and impacting negatively on public health.

Table 1.2 describes in more detail, and provides examples of, the three funding flows covered in the analysis of international development funders in Chapter 2.

TABLE 1.2. FUNDING FLOWS COVERED IN THE ANALYSIS OF INTERNATIONAL DEVELOPMENT FUNDERS

Funding flow	Definition	Project example
Air quality funding (Chapter 2.1)	Finance committed to projects where improvements to outdoor air quality are explicitly included as a primary project objective, demonstrating intentionality.	Air pollution prevention programme
Air quality & climate funding (Chapter 2.2)	Finance committed to climate mitigation or adaptation projects[g] where improvements to outdoor air quality are explicitly included as a primary objective. Reference to air quality needs to be included in the project description, demonstrating intentionality. This represents the subset of air quality funding flows which simultaneously addresses climate change.	Bus rapid transit project to reduce urban air pollution
Fossil fuel-prolonging funding (Chapter 2.3)	Finance going to projects that may work against the clean air agenda by prolonging the use of polluting fossil fuels.	Refinancing of a coal power plant

Finally, given the rapid urbanisation occurring across Africa; the impact of the pandemic on worsening inequities; and in anticipation of COP27 in Egypt, the report provides a deep dive analysis into the state of air quality funding in Africa between 2015 and 2021 in Chapter 4.

f Data on climate funding provided by international development funders came from Climate Policy Initiative (CPI)'s Global Landscape of Climate Finance database, the most comprehensive information on global climate finance flows to climate mitigation and adaptation.

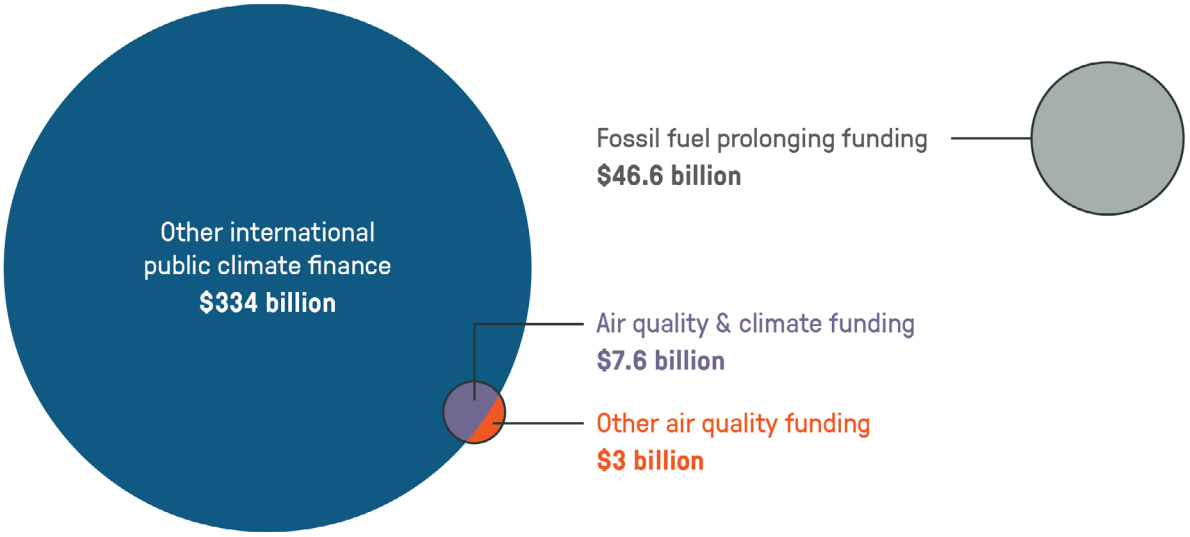
g Climate mitigation aims at reducing emissions and enhancing sinks of greenhouse gases. Climate adaptation aims at reducing the vulnerability of, and maintaining and increasing the resilience of, human and ecological systems to negative climate change impacts. See Annex for further details.

2. INTERNATIONAL DEVELOPMENT FUNDERS

International development funders include multilateral development banks, bilateral development agencies and governments that provide finance to low- and middle-income countries for development purposes. They work across a variety of sectors, with topics including but not limited to agriculture, water, education, environment and health. International development funding is largely channelled through lending with some grant funding, depending upon the particular actor (see Table 1.1).

In this section, we discuss: (i) air quality funding, (ii) air quality & climate funding, and (iii) fossil fuel-prolonging funding as previously defined in Table 1.2. The interlinkages between flows from international development funders are also depicted in Figure 2.1.

FIGURE 2.1. INTERLINKAGES BETWEEN AIR QUALITY FUNDING, AIR QUALITY & CLIMATE FUNDING AND FOSSIL FUEL-PROLONGING INTERNATIONAL DEVELOPMENT FUNDING, 2015-2020



2.1 AIR QUALITY FUNDING

AIR QUALITY FUNDING HAS DECLINED IN RECENT YEARS, REPRESENTING ONLY 0.5% OF TOTAL FLOWS BY INTERNATIONAL DEVELOPMENT FUNDERS

Air quality – a critical global health issue – is still overlooked by key development funders. During 2015-2021, international development funders committed a total $10.9 billion to projects tackling air pollution (or roughly $1.5 billion per year). Even though air quality directly supports the achievement of many SDGs (see Box 1.1), and despite the link between air quality improvements and climate change, air quality funding accounts for only 0.5% of total commitments by international development funders. This totalled $1.9 trillion in 2015-2020 (or $324 billion per year) (Figure 2.2).[h] In other words, for every $1,000 spent by a development funder, only $5 was spent to tackle ambient air pollution – the fifth biggest killer by health risk factor worldwide.

> **"For every $1,000 spent by a development funder, only $5 was spent to tackle ambient air pollution – the fifth biggest killer by health risk factor worldwide"**

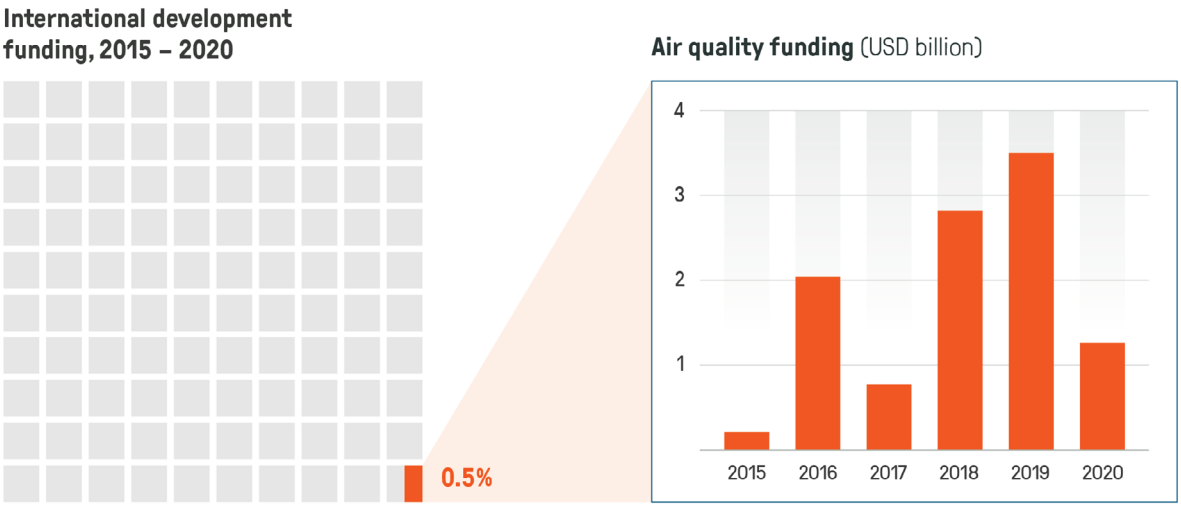
Not only are air quality funding commitments not enough to combat the scale of the problem,[i] they are declining. Between 2015 and 2021, flows have fluctuated significantly from year to year, peaking in 2019 due to a large commitment made for a railway extension project in the Philippines improving air quality by alleviating serious traffic congestion. In 2020, international development funders cut their commitments to air quality projects in half (Figure 2.2) and, based on preliminary data, the trend has continued in 2021. As yet, there is no clear, over-arching strategy from the donor community to tackle this global crisis.

The drop in air quality funding from $3.5 billion in 2019 to $1.3 billion in 2020 is likely associated with the impacts caused by the COVID-19 pandemic and the reallocation of public resources. However, as government agendas worldwide have recentred around public health following the pandemic, there is an opportunity for development funders to build on this momentum and scale-up their funding for air quality. This is particularly relevant given the established links between respiratory illness and vulnerability to COVID-19 or related diseases.

h Due to limited data on some international development funding flows (e.g. global south-south flows), this total is likely to be an underestimation. This covers the period 2015-2020 and data for 2021 total international development funding is not yet available

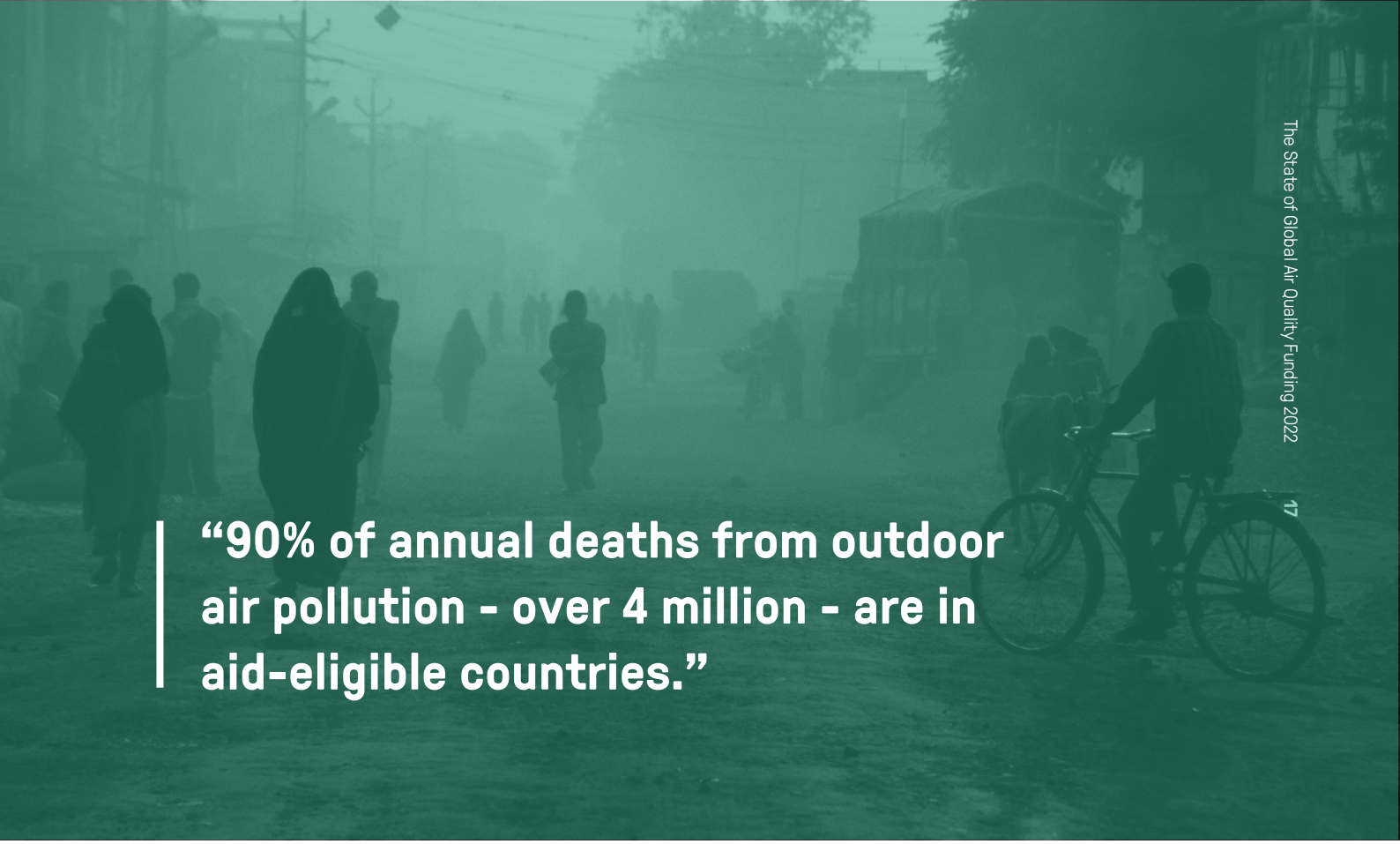
i Given the observed reality that 99% of the global population breathes air in excess of WHO PM2.5 standards

FIGURE 2.2. AIR QUALITY FUNDING AS A SHARE OF TOTAL INTERNATIONAL DEVELOPMENT COMMITMENTS, 2015-2020



The clean air agenda is failing to garner the political momentum it deserves and needs. There is growing consensus among stakeholders that the international funding response for pollution prevention has been 'meagre'.[15] This scarce funding and inconsistency in commitments indicated above reflects low international prioritisation of the issue. There is also opportunity for greater collaboration and coordination amongst international funders to, together, prioritise air quality funding and tackle several interlinked development issues simultaneously.

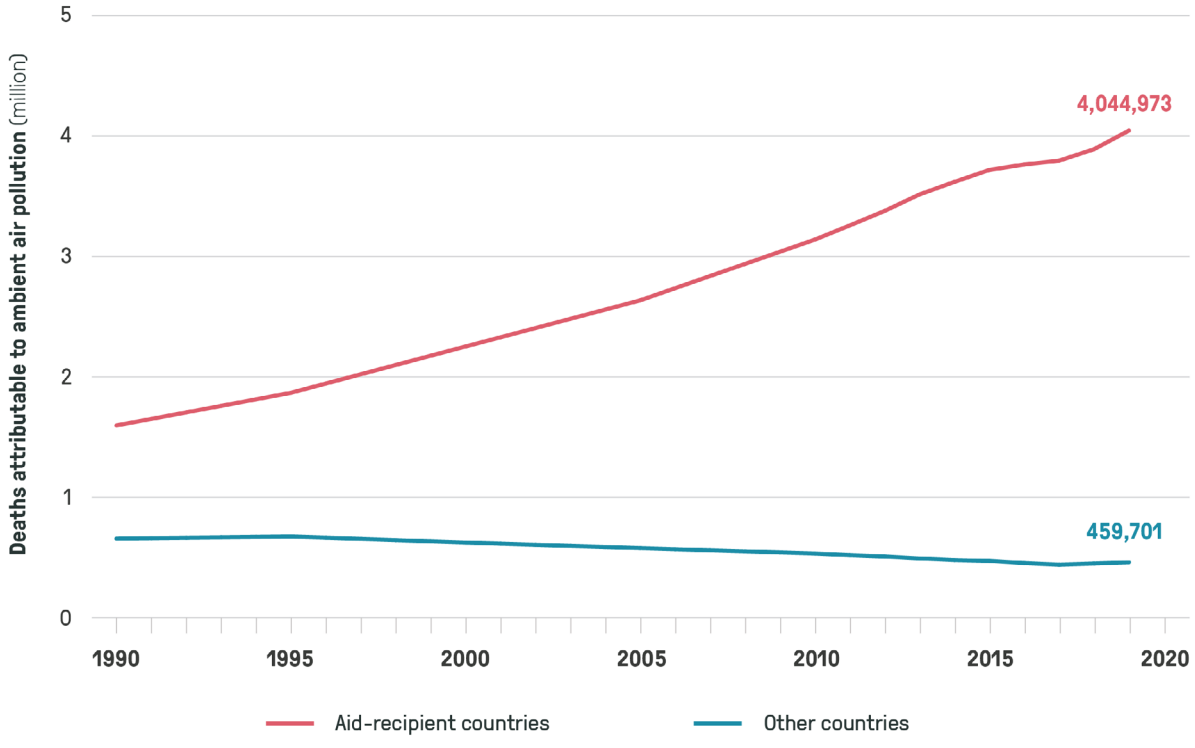
Avoidable deaths attributable to outdoor air pollution continue to increase sharply, particularly in aid-eligible countries (Figure 2.3). 90% of annual deaths from outdoor air pollution - over 4 million - are in aid-eligible countries. This represents a 153% increase between 1990 and 2019, largely stemming from population growth. Air quality commitments to these countries must be urgently scaled-up to be consistent with the scale of the global air quality emergency.



> **“90% of annual deaths from outdoor air pollution - over 4 million - are in aid-eligible countries.”**

FIGURE 2.3. ANNUAL DEATHS ATTRIBUTABLE TO AMBIENT AIR POLLUTION IN AID-ELIGIBLE AND OTHER COUNTRIES, 1990-2019

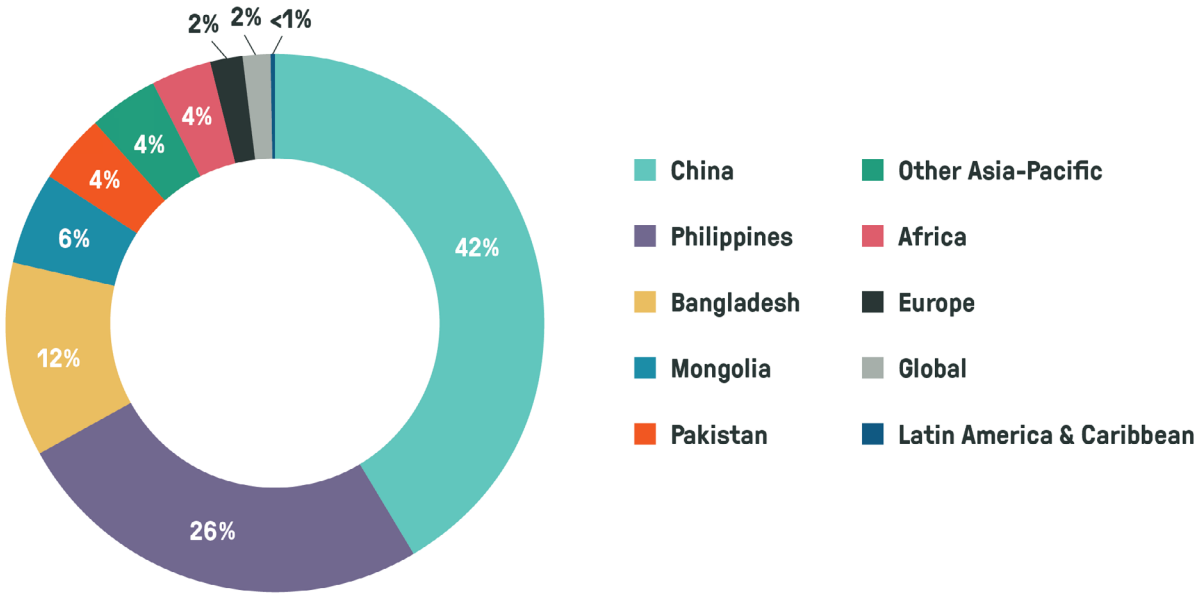
Source: HEI SOGA (2021)[16]



AIR QUALITY FUNDING WAS CONCENTRATED IN A HANDFUL OF ASIAN COUNTRIES, AND LAGS BEHIND IN AFRICA AND LATIN AMERICA

Between 2015 and 2021, 88% of air quality funding provided by international development funders was concentrated in five countries in Asia: China (42%), the Philippines (26%), Bangladesh (12%), Mongolia (6%) and Pakistan (4%) (Figure 2.4). This is largely because the top four funders (i.e., Japan, Asian Development Bank, Asian Infrastructure Investment Bank, and the Republic of Korea) - which account for 45% of total air quality funding – have a regional focus on Asia. Regions such as Africa and Latin America receive significantly lower funding, accounting for only 3.7% and 0.3% of the total during the same period.

FIGURE 2.4. INTERNATIONAL DEVELOPMENT FUNDING TO AIR QUALITY BY REGION OF DESTINATION, 2015-2021



According to the Health Effects Institute's State of Global Air 2021 data, the countries that perform worst in terms of (absolute) number of air pollution-related deaths are China and India, at 1.5 million and 1.1 million deaths, respectively, in 2019.[17] While China consistently receives substantial air quality finance (42% of the total tracked), India's share is far lower (at 2%).[18] Given India's dire air quality and its position as a large recipient of international development finance (averaging 5% of all flows each year between 2015-2020), there is certainly scope for scaling-up clean air finance by ensuring the clean air agenda is an integral component of development interventions in the country.

> **"88% of air quality funding is concentrated in just five countries in Asia."**

DHAKA: SPOTLIGHTING URBAN AIR QUALITY

According to the 2021 World Air Quality Report ranking, Bangladesh's capital is the second most polluted capital city in the world, averaging an annual PM2.5 concentration of 78.1 μg/m³ (just below Delhi, India, at 85 μg/m³). In light of the WHO's Air Quality annual average limit of 5 μg/m³ PM2.5, Dhaka is currently experiencing air pollution over 15 times the level considered safe. The main sources of particulate matter in Dhaka are wood burning, soil and road dust, brick kilns and motor vehicles (Dhaka Mass Transit Company, 2021).

In the six years between 2015 and 2021, international development funders committed $1.3 billion in air quality projects within and for the city. Funding was provided by JICA over three years (2018-2020) to develop a Mass Rapid Transit system to alleviate traffic congestion and mitigate air pollution. A recent Environmental Impact Assessment undertaken by the project's Executing Agency – the Dhaka Mass Transit Company – showed that concentrations of particulate matter between 2017 (baseline year) and 2020 had indeed been reduced at 5 out of the 6 monitoring locations along the track.

Although Dhaka received 11% of total air quality development funding from international development funders in 2015-2021, as the world's second most polluted capital city, current levels of international development funding are simply not consistent with the level needed to achieve substantial reductions in, and safe levels of, PM2.5.

While there are several rankings of cities with the worst air pollution, a recent study found that the widespread lack of monitoring data prevents a clear understanding of the topic. As the authors argue, "the city with the highest PM2.5 concentration may be unmonitored". Bangladesh, for example, was found to have less than 0.2 PM2.5 monitors per million people, with distances between populations and monitor locations too large for accurate and meaningful exposure assessment.[19]

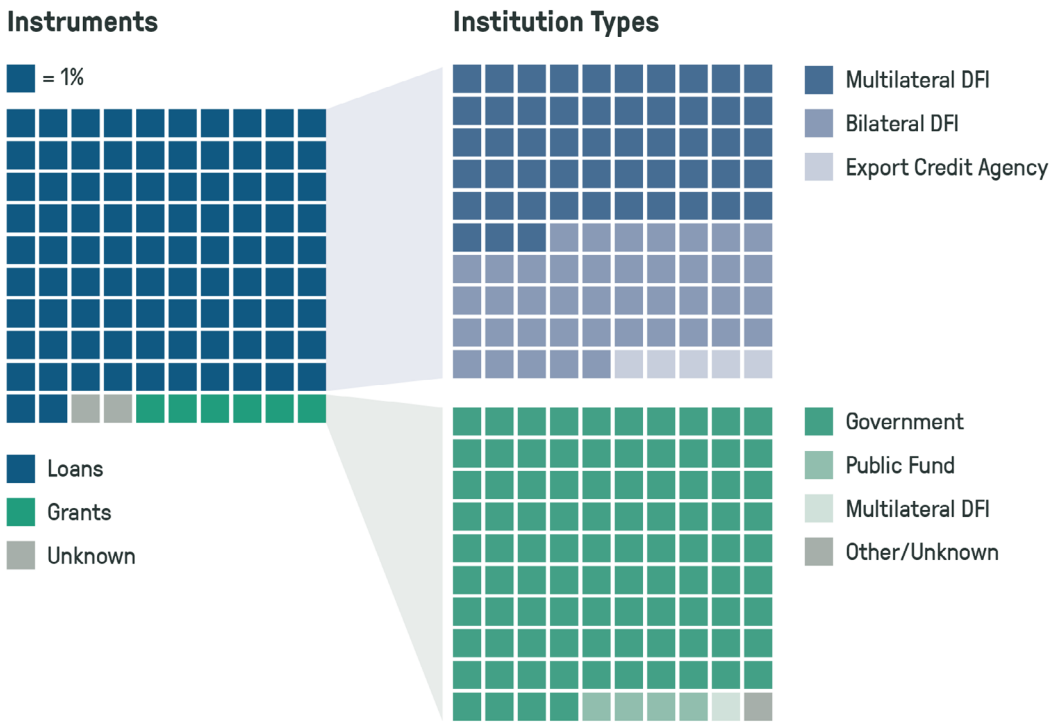
Much more funding is needed for monitoring equipment (e.g., regulatory networks, monitors, satellite remote sensing) to help assess the scale of the problem in particular geographic contexts — whether those be local, regional or national — and to take action. Accurate air quality data is essential for effective air quality management.

GRANT FUNDING, MUCH NEEDED IN LOW-INCOME COUNTRIES, REPRESENTED ONLY 6% OF TOTAL AIR QUALITY COMMITMENTS

Multilateral development financial institutions (DFIs) provided the largest share (49%) of air quality funding in 2015-2021, followed by bilateral DFIs (39%). These funders provided funding almost exclusively in the form of loans, which represented 92% of total commitments (Figure 2.5). Grant funding, which made up only 6% of total air quality funding, was mainly provided by governments.

Grants provide access to affordable capital for early stage projects and are especially important in low-income countries to lower the overall cost of funding, mitigate risks, and attract further investments. However, the amount of grant funding provided to low- and middle-income countries has reduced at a time when these countries need grant funding the most – faced with rising inflation following the pandemic and compounded by the energy and food crises related to the war in Ukraine.

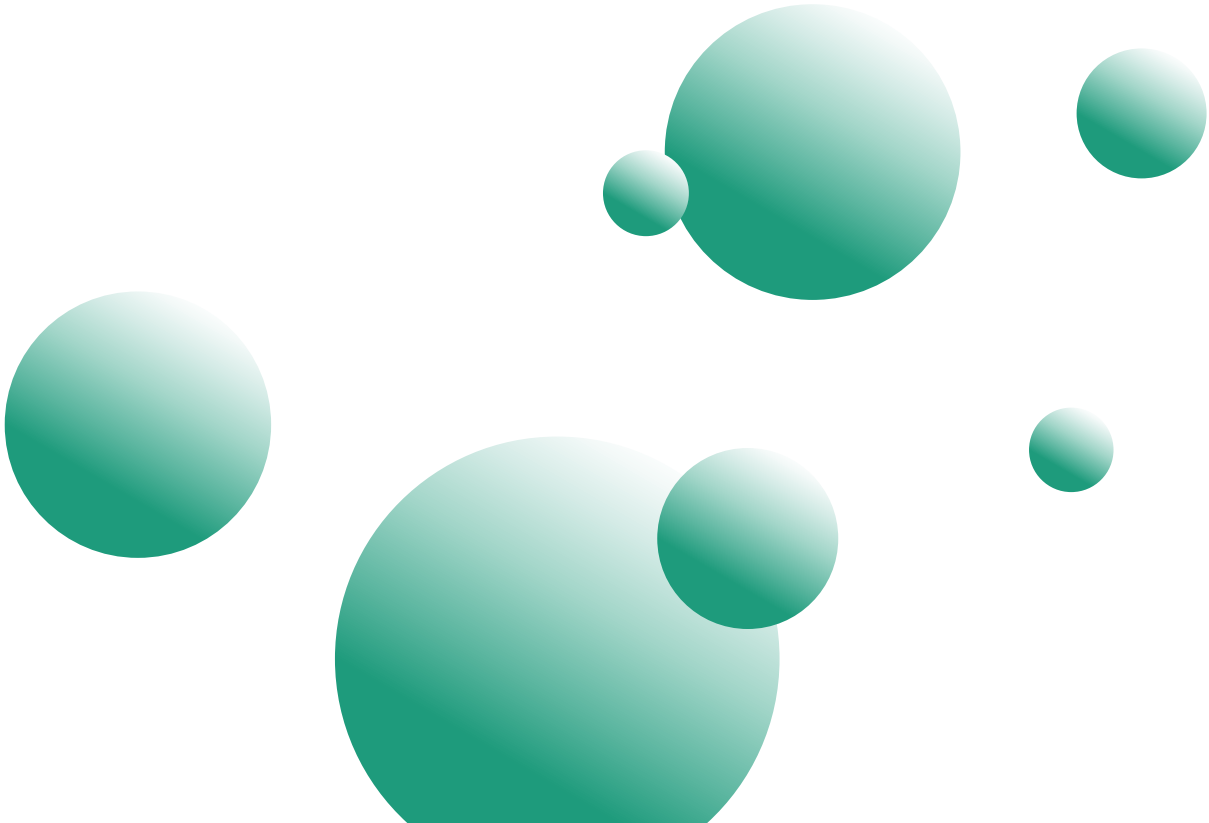
FIGURE 2.5. INTERNATIONAL DEVELOPMENT FUNDING ON AIR QUALITY BY INSTRUMENT AND TYPE OF FUNDER, 2015-2021



There is still only a limited pool of funders providing air quality funding, leaving room for new investors to enter this space. In addition, the funding they provide is often on an ad hoc and uncoordinated basis. Reporting on development funding with air quality benefits remains both limited and unevenly distributed. Table 2.1 shows the top 10 international development funders, representing 98% of air quality funding in 2019-2020. Among these, only four provided funding in the form of grants.

TABLE 2.1. TOP 10 INTERNATIONAL DEVELOPMENT FUNDERS OF AIR QUALITY FUNDING IN 2019-2020

Ranking	International development funder	Air quality funding (average 2019-2020, USD million)	Grant % of air quality funding (average 2019-2020)	% of air quality funding also targeting climate (average 2019-2020)
1	Japan	1,008	0%	100%
2	Asian Development Bank	669	0%	53%
3	Asian Infrastructure Investment Bank	250	0%	0%
4	Republic of Korea	201	1%	95%
5	World Bank - International Bank for Reconstruction and Development	100	0%	0%
6	Germany	57	100%	7%
7	Clean Technology Fund	16	0%	0%
8	European Bank for Reconstruction and Development	14	0%	41%
9	United States	14	100%	11%
10	European Commission	11	100%	97%
All top 10 funders		2,340	4%	67%



In a similar way that international climate finance tends to be framed in terms of the responsibility of developed countries to assist developing countries to mitigate and adapt to climate change, air quality finance can also be seen as a social justice issue. A recent study found that international trade "shifted" more than 700,000 pollution-related deaths from regions that import goods and services, like the United States and Western Europe, to those that produce them, including, for example, China.[20]

There are strong grounds, then, for development funders to increase the share of grant funding to air quality, to address this inequitable dynamic.

International development funders are also strategically positioned to provide funding in a way that helps to catalyse private investment into the clean air space. This can be done by using blended finance instruments that reward outcomes, de-risk projects, and otherwise crowd in or leverage other streams of finance such as the Breathe Better Bond structure described in Box 2.1.

> **"Grant funding is especially important in low-income countries to lower the overall cost of tackling air pollution."**

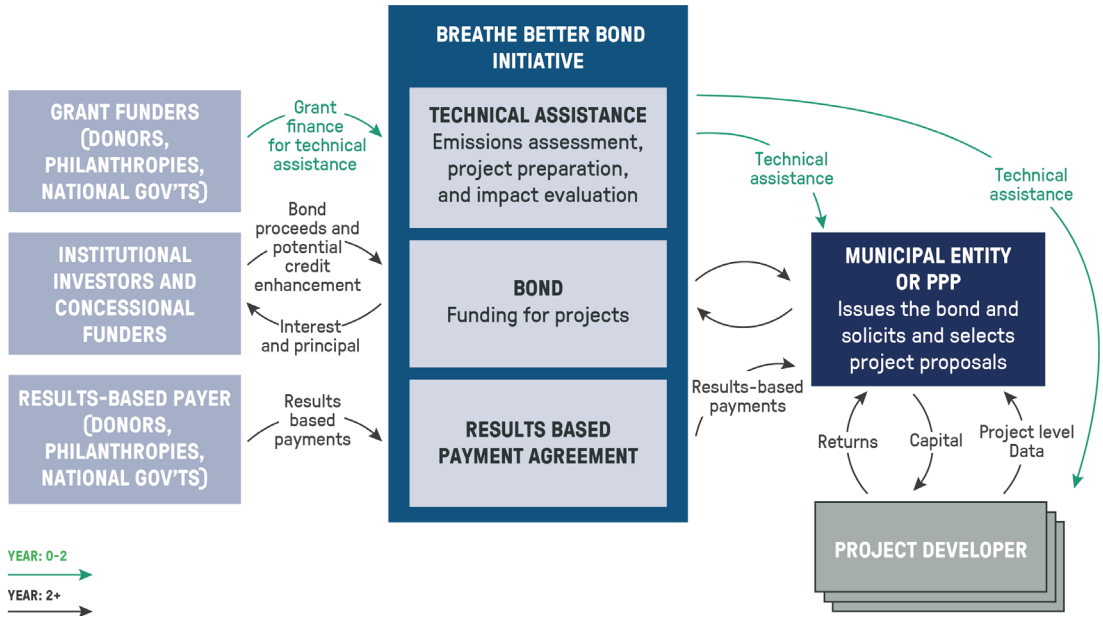
BOX 2.6: "SMARTER" AIR QUALITY FUNDING – BREATHE BETTER BOND INITIATIVE

The Breathe Better Bond Initiative, developed by the International Finance Corporation (IFC) under the Global Innovation Lab for Climate Finance (the Lab), is an innovative financing structure aimed at raising financing for projects that reduce both air pollution and greenhouse gas emissions in cities.

It combines (i) a bond issued by a city or state; (ii) a results-based payment agreement involving a donor, philanthropic institution, or DFI to lower the total cost of financing; and (iii) technical assistance for cities in order to help them identify sources of air pollution, project pipeline preparation, and improve enabling conditions. The structure of the Initiative is further depicted in Figure 2.6.

If implemented in the ten emerging-market cities with the most potential,[j] IFC estimates that the Initiative could mobilise $4 billion for climate-friendly urban infrastructure projects that simultaneously tackle air pollution.

FIGURE 2.6. DESIGN OF THE BREATHE BETTER BOND INITIATIVE



Source: The Lab (2022)[21]

j Ahmedabad; Bengaluru; Bogota; Delhi; Jakarta; Johannesburg; Lagos; Lima; Mexico City; Santiago.

CHINA: TURNING THE TIDE ON AIR POLLUTION WITH THE SUPPORT OF ADB FINANCE

As a result of rapid industrialisation and urbanisation, China became one of the most polluted countries in the world. In 2013, a study found that Beijing's PM2.5 concentration was seven times the amount considered safe by the WHO, and double the country's own "Class 2" national standard. The dire state of air quality led the government to declare a "war against pollution", stressing that the country could not allow itself to "pollute now and clean up later".[22] As part of concrete policy initiatives, China tasked the Beijing-Tianjin-Hebei (BTH) region, one of the most polluted regions, and home to much of the country's coal and steel industries, with a target to reduce annual PM2.5 by 25% by 2017.

The Asian Development Bank (ADB)'s multi-year project (2015–2023), Air Quality Improvement in the BTH Region, has helped to deliver on the regional policy target. An initial $300 million loan targeted policy and regulatory reform in Hebei province; a second $500 million loan aimed at facilitating access to finance for small-and-medium-sized enterprises; and the third, most recent $500 million loan provided for an emissions-reduction and pollution-control facility.[23]

Refining policy infrastructure. Given the nature of air pollution, transboundary policies must be designed that consider geographical centres and peripheries as one integrated landscape.[24] At the outset of the "war against pollution" China's regulatory environment was instead fostering a patchwork of separate, locally based pollution control regimes. The Air Quality Improvement project established the necessary institutional arrangements and cooperation strategies for effectively managing a transboundary problem.

Demonstrating and deploying new technologies. The pollution-control facility was designed to demonstrate the feasibility of technologies for heavy-emissions industries and enterprises. An industry-specific fund was provided for sub-projects within the iron and steel industries, as well as capacity building to use these advanced technologies and select appropriate business models.

Catalysing finance. ADB's investment is expected to attract approximately $1.5 billion in co-financing from other public and private actors, with the aim of training at least 200 people in the use of advanced technologies by 2023.[25] Development finance institutions can play a key role in establishing the market for, and de-risking, pollution-reducing technologies and enterprises.

Improving public health. Progress has already been observed in the BTH region: since 2013 there has been a 49% reduction in particulate pollution, translating to a gain of 4.1 years in life expectancy.[26]

2.2 AIR QUALITY AND CLIMATE FUNDING

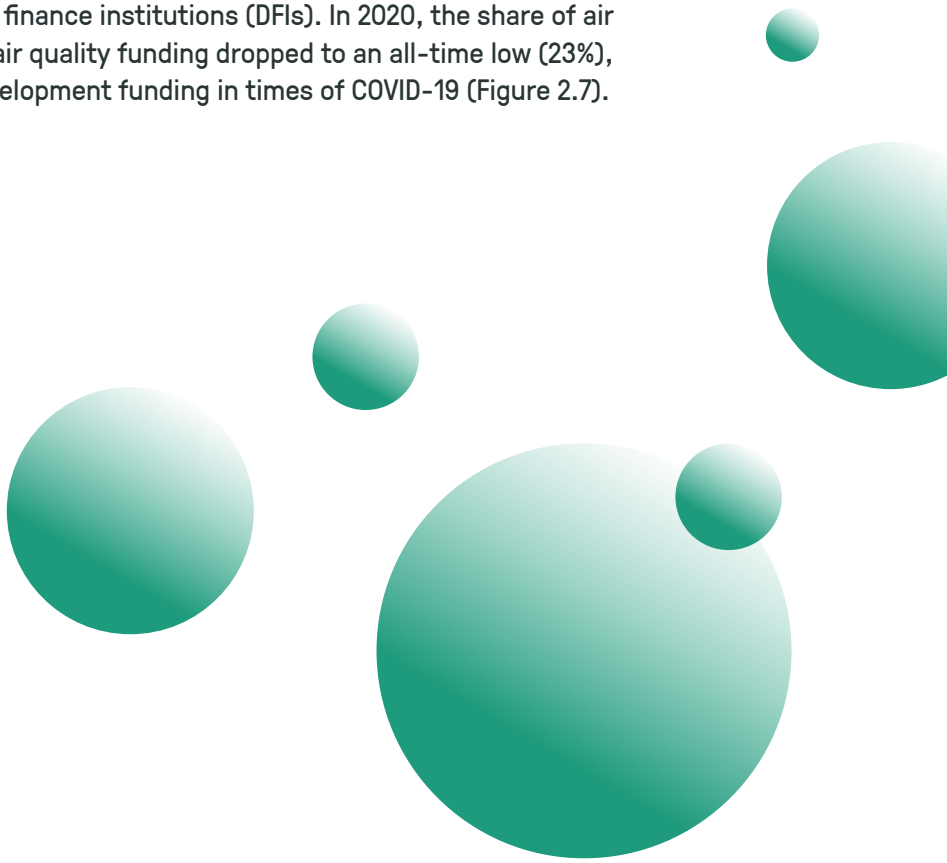
Our climate, air pollution and health challenges are interconnected in their causes and consequences, and therefore also in their solutions. Despite this, action is often handled separately, with siloed air quality and climate policies potentially leading to both damaging trade-offs and missed opportunities. However, coordinated, intentional action can be a win-win in tackling climate change and air pollution together. Therefore, we have analysed air quality funding to investigate the extent of joined-up air quality and climate action in funder programming.

IN 2015-2020, 72% OF AIR QUALITY FUNDING ($7.6 BILLION) WENT TO PROJECTS WHICH SIMULTANEOUSLY ADDRESSED CLIMATE CHANGE

Between 2015 and 2020,[k] international development funders committed 72% of their air quality funding ($7.6 billion) to projects which simultaneously tackled air pollution and climate change. We refer to these flows as "air quality & climate funding" (see Table 1.2).

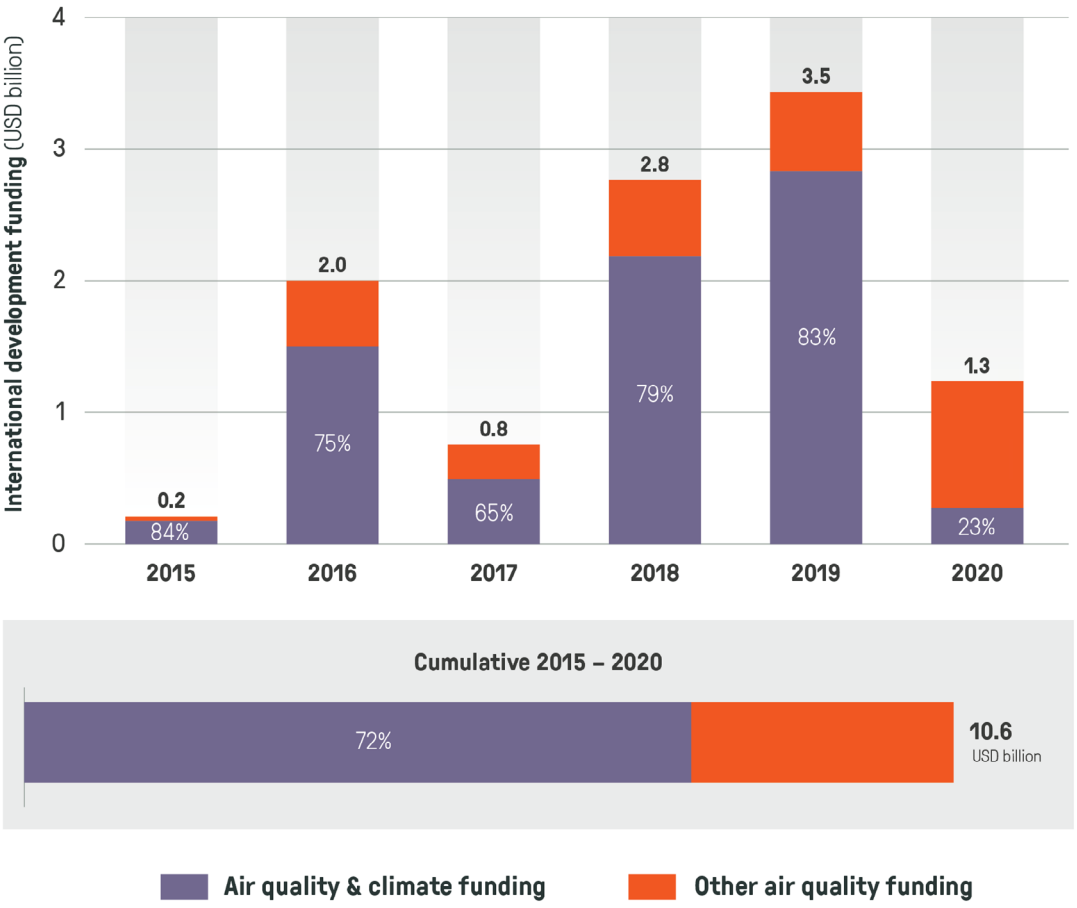
The remaining 28% of funding ($3 billion) went to air quality-specific projects not related to climate, for example funding for research studies on the impacts of air pollution on health or for air quality monitoring network in a city.

Annual air quality & climate funding commitments from these funders were not consistent, with considerable annual fluctuations due to few large commitments made by bilateral and multilateral development finance institutions (DFIs). In 2020, the share of air quality & climate funding within total air quality funding dropped to an all-time low (23%), likely due to the reprioritisation of development funding in times of COVID-19 (Figure 2.7).



k Given data on climate finance for 2021 is not available, this section compares finance flows for 2015 – 2020.

FIGURE 2.7. SHARE OF INTERNATIONAL DEVELOPMENT FUNDING AIR QUALITY & CLIMATE FUNDING AS A SHARE OF TOTAL AIR QUALITY FUNDING, 2015-2020



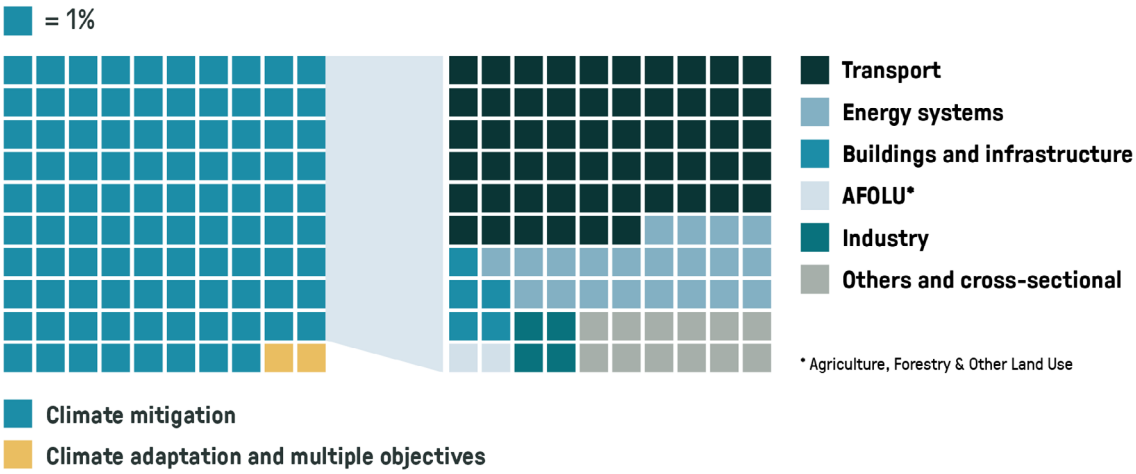
The number of international development funders explicitly reporting on and capturing the interlinkages between air quality and climate action remains limited. Since 2015, 95% of total air quality & climate funding was provided by five international development funders, namely Japan International Cooperation Agency (JICA, 49%), Asian Development Bank (ADB, 29%), the International Bank for Reconstruction and Development (IBRD, 10%), the Export-Import Bank of Korea (KEXIM, 5%) and Kreditanstalt Fuer Wiederaufbau (KFW, 2%). In addition to limited funding, there is limited information and reporting on intentional targeting of climate and air quality as development objectives. So it is likely that these figures do not capture all investment and the actual figures may be higher. Given their key role and development-linked mandates, more international development funders must recognise the links between air pollution and climate change and scale up their commitments to projects jointly addressing the root causes of both issues.

MOST AIR QUALITY & CLIMATE FUNDING (95%) WENT TO MITIGATION PROJECTS IN THE TRANSPORT AND ENERGY SECTORS

Almost all (98%) of the $7.6 billion committed as air quality & climate funding was directed to climate mitigation projects (Figure 2.8). Funding to adaptation projects and projects with dual benefits[l] remained low, attracting a total of $154 million during 2015-2020. These projects include, for example, capacity building programmes jointly tackling issues associated with food security, deforestation and air pollution in developing countries. Such low levels of funding highlight that the potential to link climate adaptation and air quality improvements remains largely untapped.

Over half of air quality & climate funding (56%, or $4.2 billion) targeted transport-sector projects aimed at reducing air pollution, primarily for the development of rail and public transportation systems which have a clear and immediate impact on air pollution in urban contexts. Particularly, air quality & climate funding to transport projects grew exponentially in 2018 and 2019 thanks to three large investments made by JICA in Bangladesh and the Philippines where motor vehicles are a large source of air pollution.[m] Energy projects (mainly for renewable power and heat generation) attracted 21% of total air quality & climate funding ($1.6 billion) (Figure 2.8). These shares are reflective of the impact that transport and energy can have on both air quality and climate.

FIGURE 2.8. PROPORTION OF AIR QUALITY AND CLIMATE FUNDING BY CLIMATE OBJECTIVE AND SECTOR, 2015-2020



l Dual benefits projects include activities contributing to both climate change mitigation and climate change adaptation. For example, an afforestation project preventing slope erosion is a "dual benefit" project because it brings significant adaptation benefits, while also making a positive contribution to mitigation.

m These were the development of the Dhaka mass rapid transit system ($1.3 billion), the construction of the Manila metro line ($930 million), and the extension of the North-South Commuter Railway in the Philippines ($1.5 billion).

ONLY 2.2% OF INTERNATIONAL CLIMATE FINANCE EXPLICITLY TACKLES AIR POLLUTION

Alongside air quality commitments, international development funders provide billions of finance each year to climate mitigation and adaptation projects in developing and emerging countries.[n] These commitments have grown over time reaching a total of $342 billion over 2015-2020 (or $57 billion per year), a reflection of the growing recognition of the importance of tackling climate change and building resilience in these countries. Yet, this is not nearly enough to ensure the achievement of international climate goals and must be urgently scaled up.

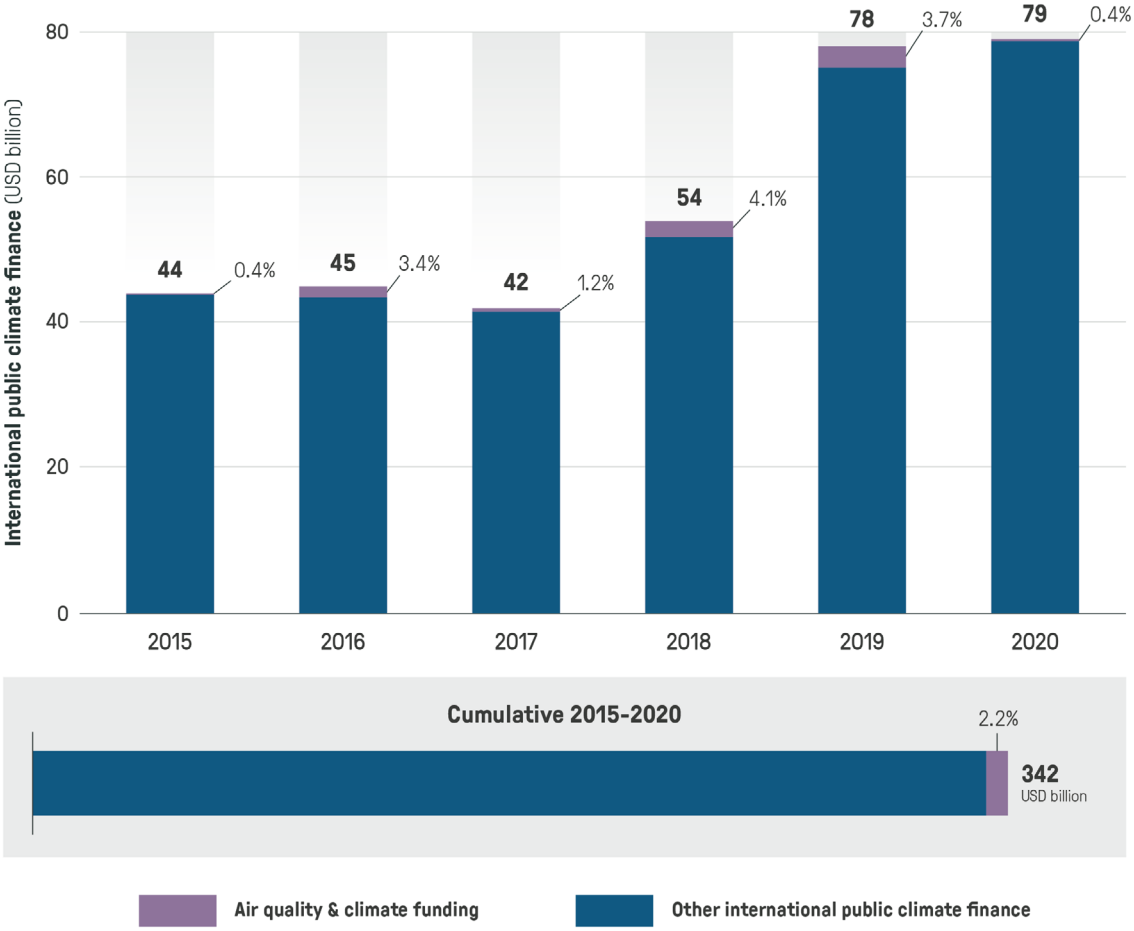
In the same period, air quality & climate funding ($7.6 billion) accounted for only 2.2% of total international public climate finance from funders in developed countries to developing and emerging markets (Figure 2.9). This means that 98% of these climate finance flows had no explicit air quality objectives, despite the clear links between improving air quality and climate action.

This share has remained more or less stable throughout the period – though it dropped to 0.4% in 2020 – showing how international funders have so far failed to consistently tackle air pollution and climate change together.

> **“98% of climate finance flows have no explicit air quality objectives”**

n Due to data limitations, an OECD vs non-OECD country distinction is used here as an imperfect proxy to separate developed countries from developing and emerging countries. It should be noted, however, that under the UNFCCC, OECD countries such as Mexico, Colombia, Costa Rica and Chile are classified as ‘non-Annex I” – or developing – countries. Similarly, Turkey, while categorized as an “Annex I” country (or developed), is an ODA-eligible country.

FIGURE 2.9. AIR QUALITY AND CLIMATE FUNDING AS A SHARE OF TOTAL INTERNATIONAL PUBLIC CLIMATE FINANCE, 2015-2020[o]

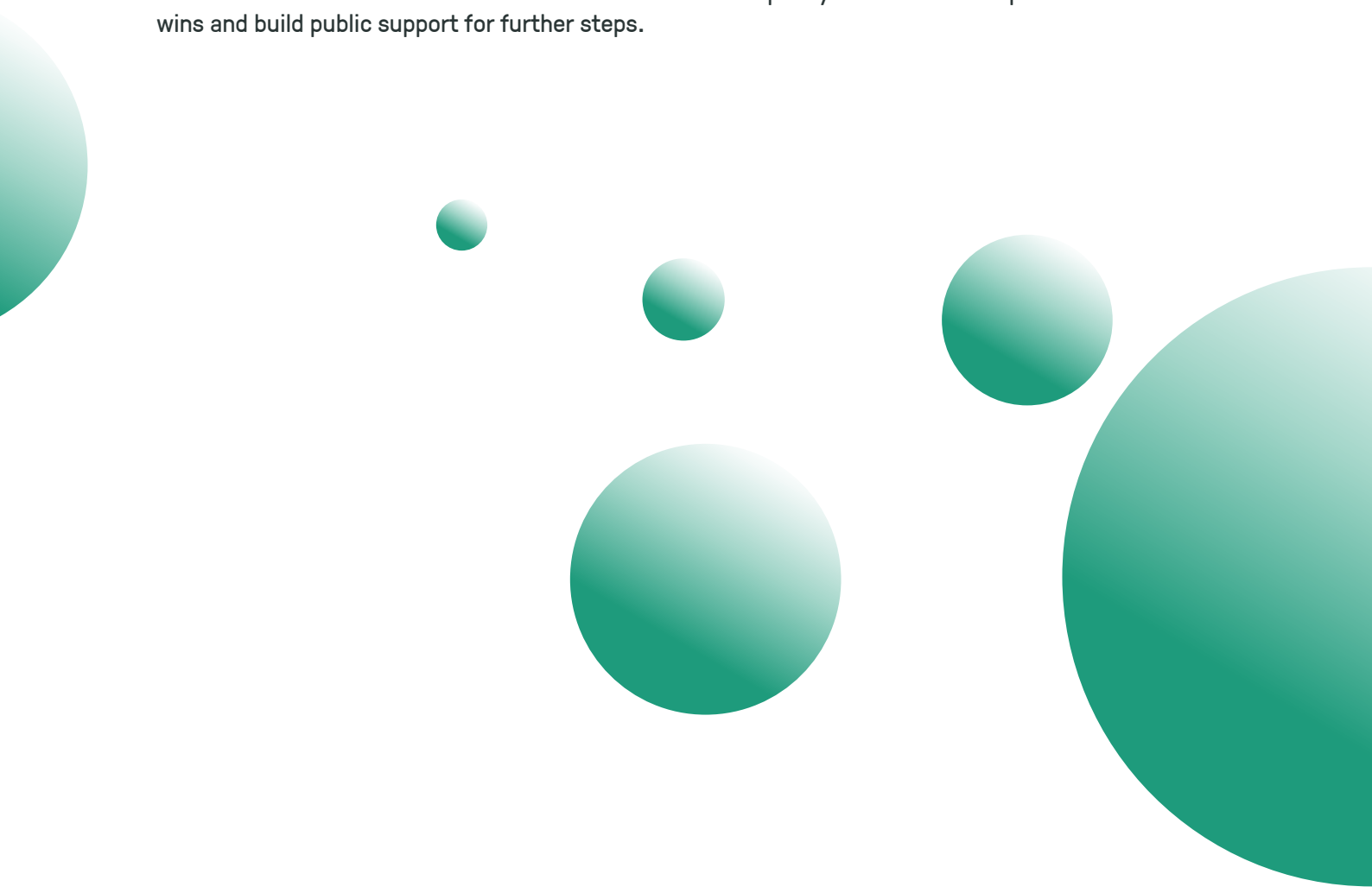


o International climate finance include funding from OECD to non-OECD countries as reported in Global Landscape of Climate Finance reports in 2015-2020.

A much larger amount of climate finance is likely having impacts on air quality which are currently not accounted for. For example, during 2015-2020, international development funders committed an additional $11.6 billion to climate finance projects which also had direct air quality benefits, even though air quality was not explicitly recognised as a funding priority. The majority of these flows (79% or $9.2 billion) included funding for transport-related projects which favour a modal shift away from fossil fuel vehicles.[p]

The reverse is also true. Some climate mitigation solutions, such as biomass burning in stoves and vehicles, can lead to an increase in air pollution. By taking an integrated approach, international development funders can ensure that projects are designed around both priorities and avoid harmful consequences.

If funders account for the health and economic benefits gained from improved air quality in their programming, their investment becomes better value for money with increased impact. If impacts on air quality are not considered at the design phase, climate projects that might actually be net-benefit might still appear as net-cost, and potentially not go ahead. It can also lead to more climate action because air quality benefits can be quick wins and build public support for further steps.



p As these projects would reduce air pollution by offering an alternative to fossil fuel burning, they are considered to have a direct positive impact on air quality, even though unintentional and implicit.

CHILE: JOINING-UP ACTION ON AIR QUALITY AND CLIMATE

Chile is particularly vulnerable to climate change and is already experiencing its impacts, most notably through an ongoing drought since 2010 in the central and southern part of the country.[27] Chile is also home to 11 of the top 15 most polluted cities in Latin America and the Caribbean with air pollution costing the Chilean health sector approximately $670 million every year, associated with 4,000 premature deaths.[28] Despite this, Chile did not receive any air quality funding from international development funders during 2015-2021.

In April 2020, Chile submitted their revised Nationally Determined Contribution (NDC) to the UNFCCC, outlining their strategies for tackling climate change. One component of the NDC committed the country to reducing black carbon emissions by 25% by 2030, relative to 2016 levels. Black carbon is a component of PM2.5 that directly contributes to atmospheric warming as well as being a dangerous air pollutant. Hence, Chile's decision to integrate black carbon reduction targets into its NDC is an important step towards joined-up action on air quality and climate, linking international climate policy processes with local air quality concerns.

As black carbon in Chile mainly comes from burning firewood for heating and residential cooking, biomass-based power generation, off-road machinery and diesel vehicles, actions proposed to deliver on this target include switching to electric heating, energy efficiency improvements, industry emissions standards, as well as more stringent transport regulations.[29]

Alongside other countries that have adopted similar black carbon targets within their NDCs, Chile has set an example of how joined-up action may be operationalized, using and enhancing the existing policy infrastructure established for tackling climate change to achieve broader social and economic gains. Moreover, integrating immediate, local air pollution concerns – that have tangible implications for individuals – into longer-term climate strategies helps to increase buy-in on NDCs, allowing benefits to be realized today rather than sometime in a distant future.

Capitalising on the shorter time frame for delivering air quality outcomes and, thereby, delivering on longer-term climate goals that span multiple political cycles, is a key opportunity joined-up action offers to policy makers.

2.3 FOSSIL FUEL-PROLONGING FUNDING

Funding committed to fossil-fuel prolonging projects will work against the clean air agenda in the long term by prolonging the use of, and exposure to, dirty fuels with regressive implications for public health.

The Global Burden of Disease study found that burning fossil fuels (coal, oil and natural gas) contributed to an estimated one million deaths globally in 2017, or 27.3% of all mortality. Most of these deaths (80%) were concentrated in the Global South.[30] These avoidable deaths lend even more impetus to the COP agenda to phase-out coal, emphasising the need to re-direct current development spending that prolongs the use of fossil fuels towards cleaner alternatives that can ensure healthy people and a healthy planet alike.

FOSSIL FUEL-PROLONGING PROJECTS RECEIVED OVER FOUR TIMES MORE DEVELOPMENT FUNDING THAN CLEAN AIR PROJECTS

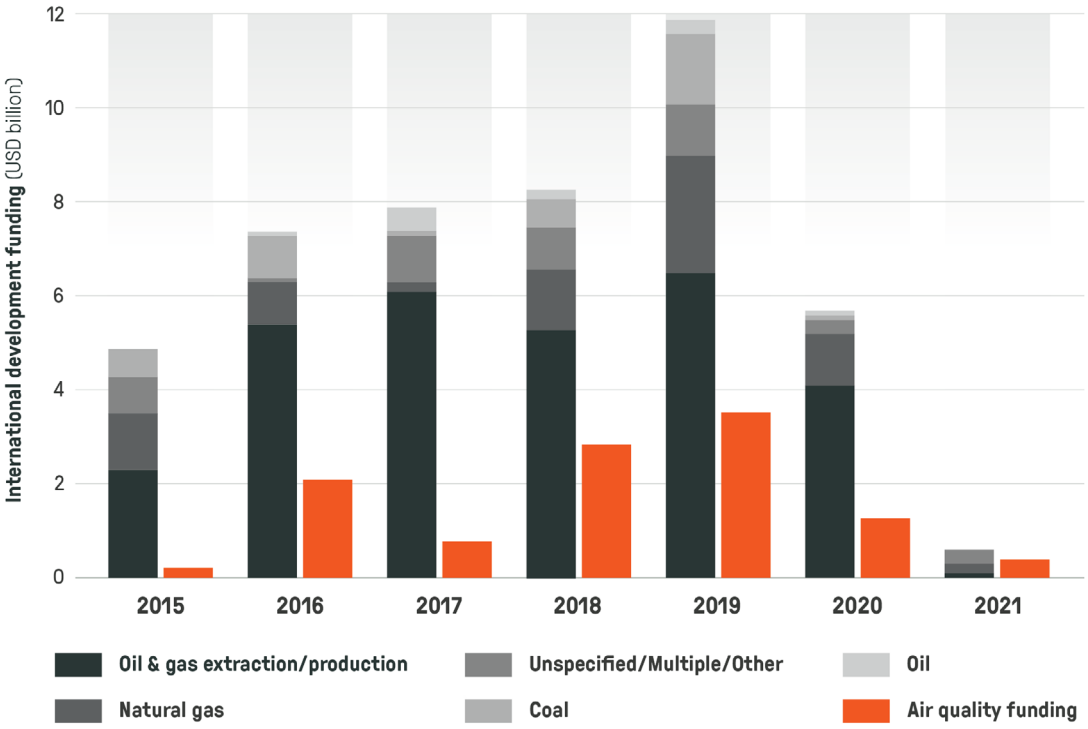
Between 2015 and 2021, official development funders committed $46.6 billion to projects that prolonged the use of fossil fuels, over four times the amount committed to air quality projects in the same period ($11 billion) (Figure 2.10). This jeopardises both the clean air agenda and global climate goals, with profound consequences for worsening health outcomes.

Overall, fossil fuel-prolonging funding was distributed more evenly compared to air quality funding, with South Asia as the top recipient (31%) followed by a balanced breakdown between Middle East and North Africa (22%) and Central Asia & Eastern Europe (20%).

Most funding for fossil fuel-prolonging was channelled towards oil and gas extraction/production (64%), followed by natural gas (16%). With the latter, most investments were for natural gas power plants while the former included investment into refining and processing crude resources, as well as planning, technical assistance and capacity building to facilitate sector development. International development funders must strike a balance between spurring economic growth in countries with large energy access gaps and minimising the financial and societal costs of locking-in fossil-fuel infrastructure (see Section 4.1). On a positive note, however, international development funders began to move away from coal in recent years, with coal funding declining 95% between 2019 and 2020.The decline in total fossil fuel-prolonging funding seen between 2019 and 2021 also suggests broader moves towards less polluting energy sources. This reflects the increased political momentum from bodies like the G7 in recent years to stop international funding for fossil fuels.[31] However, the data for 2021 is preliminary, as a result a concrete trend cannot be determined without additional years of data.

“Between 2015 and 2021, international development funders committed $46.6 billion to projects that prolonged the use of fossil fuels, over four times higher the amount committed to air quality projects in the same period ($11 billion).”

FIGURE 2.10. ANNUAL INTERNATIONAL DEVELOPMENT FUNDING TO AIR QUALITY AND FOSSIL FUEL-PROLONGING PROJECTS BY SECTOR, 2015-2021



Today, international development funders are still funding fossil fuel solutions as a way to improve air quality. These projects, which received $1.2 billion in funding between 2015 and 2020, include, for example, the construction of new gas-fired power plants to replace coal. While gas reduces primary particulate matter emissions relative to other fossil fuels, the production and use of gas continues to contribute to secondary particulate matter formation as well as ground level ozone in addition to any impacts on water pollution from extraction. In these instances, international development funders have opted for solutions reducing air pollution and greenhouse gas emission in the short-term but locking-in fossil fuels in the long-term, rather than replacing fossil fuels with cleaner alternatives (e.g., renewable energy).

PERSPECTIVES FROM PHILANTHROPIC FUNDERS

WHY IS IT IMPORTANT TO INVEST IN AIR QUALITY PROGRAMMING?

"We know that air pollution damages human and planetary health. Sadly, children are especially vulnerable to the effects of toxic air and the devastating impacts of climate change. We encourage others to join us and make air quality a priority. Investing in clean air will improve children's health and supports climate action to protect their futures."

Children's Investment Foundation Fund

"Poor air quality is the largest environmental risk to our health, both in South London where we work, and globally. But poor air quality is a solvable issue. We know with more investment we can make tangible improvements to air quality and improve public health."

Impact on Urban Health

"Healthy air is the most equitable form of social welfare, supporting disadvantaged communities, developing countries, and aging societies. Air policies also cut greenhouse gas emissions and advance sustainable development. To do that, we need health-based air quality standards, strategies to control both air pollutants and greenhouse gas emissions, sector mitigation pathways and comprehensive collaboration across disciplines and internationally."

Energy Foundation China

"The air pollution problem is far from being solved. Millions still die prematurely and morbidity cases are even larger. We all know that many of the sources that produce carbon dioxide and black carbon also emit pollutants like carbon monoxide, nitrogen oxides and volatile organic compounds that are harmful for people´s health. In many developing countries and large emerging economies, tackling air pollution can be a perfect way to get national governments to accelerate climate action."

Iniciativa Climatica de Mexico

WHY SHOULD OTHER FUNDERS CONSIDER WORKING ON AIR POLLUTION?

"Air pollution is an underfunded, important global public health issue which offers many tractable opportunities for improving the lives of hundreds of millions of people. Many countries have successfully achieved substantial reductions in air pollution levels. Scientific understanding of air pollution, including its sources and health impacts, has improved substantially. Innovations in monitoring and modelling the transport of pollutants have dramatically improved measurement and analysis. Together, these enable policy action today to be more cost-effective and better designed."

Open Philanthropy

"Financing air quality is financing a cross-cutting issue that connects multiple agendas: from replacing fossil fuels with renewable energy through a just transition, to supporting sustainable agriculture and forestry to avoid deforestation and fires in biomes such as Amazon. Therefore, working on air quality is a powerful way to discuss economy decarbonization."

Instituto Clima e Sociedade

"Air pollution is a clear and urgent danger to public health, especially affecting the lives of children. The causes of climate change and air pollution are often the same: industrial emissions, transport and the power sector. By capitalizing on growing public and political awareness of the health impacts of air pollution, we can simultaneously accelerate climate action and improve public health."

Children's Investment Foundation Fund

"Air pollution is a public health crisis and a social justice issue – those who are most affected often contribute the least to the problem. The co-benefits of improving air quality are massive; from making physical activity in cities easier by improving active travel infrastructure, to helping businesses reduce their air quality emissions and contributing to mitigate the climate crisis. There are a lot of win-wins."

Impact on Urban Health

"Air pollution is a strategic issue because it is the meeting point of several political and social problems: children, health, environment, climate, development, urban planning and green areas. Financing initiatives on the subject is to contribute to the solution of all these problems."

Alana Institute

3. PHILANTHROPIC FOUNDATIONS

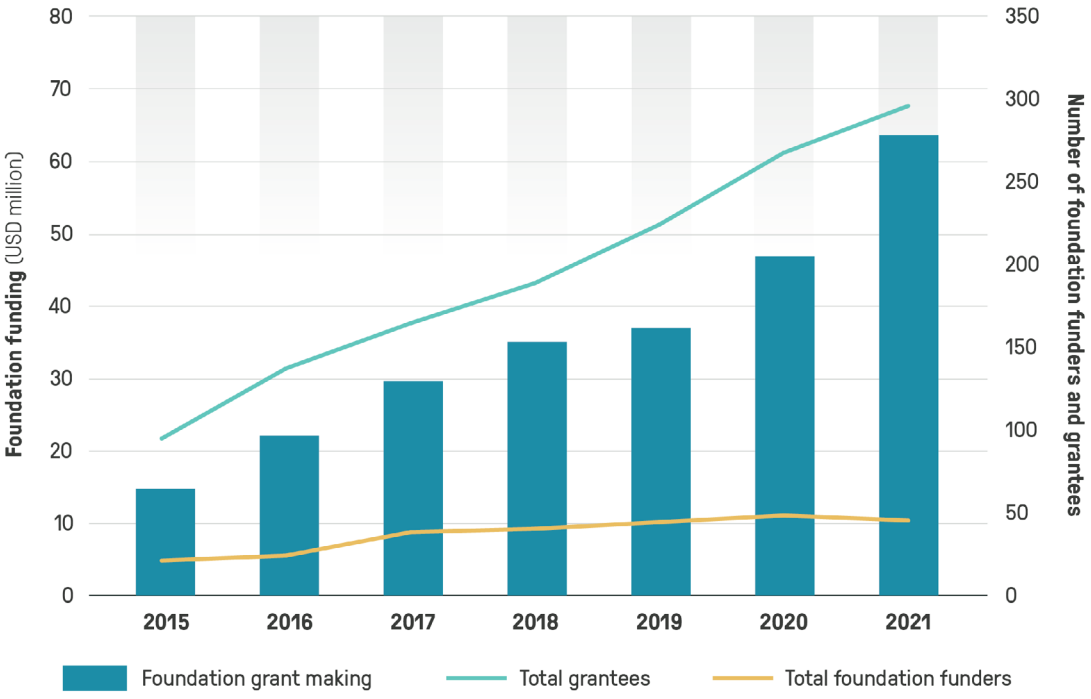
This section focuses on philanthropic foundation funding to air quality between 2015 and 2021. While this funding remains low – especially compared to international development funding to air quality – foundations play a key role in introducing innovative approaches, advocacy and in influencing key stakeholders.

SPENDING ON AIR POLLUTION IS RISING BUT REMAINS LESS THAN 0.1% OF TOTAL FOUNDATION FUNDING

In 2021, total air quality foundation funding rose by 36% to an all-time high of $63.8 million (Figure 3.1). Despite the continuous growth in funding over the past six years, foundations still allocate a small proportion of their funding to combatting air pollution.[32] In 2020, for every $1000 granted by philanthropic foundations, less than $1 went to combatting ambient air pollution. Foundations are therefore committing a lower proportion of their total funding to air pollution compared to that of international development funders (0.5% in 2015-2020).

The number of foundations we identified as providing grants to air quality projects doubled between 2015 and 2021 (from 23 to 47), suggesting a growing awareness of the issue. At the same time, there seems to be an increasingly large pool of funding opportunities available to tackle air pollution, as the number of grantees has continued to increase, reaching an all-time high of 295 in 2021 (Figure 3.1). With tracked foundation funding continuing to grow year-on-year, the air quality field has shown it is able to absorb more and more funding, with expert organisations poised to produce transformative results if they receive the support they need.

FIGURE 3.1. ANNUAL FOUNDATION FUNDING TO AIR QUALITY, NUMBER OF FOUNDATION FUNDERS AND NUMBER OF GRANTEES, 2015-2021



> **"For every $1,000 granted by philanthropic foundations, less than $1 went to combatting ambient air pollution."**

FOUNDATIONS ARE INCREASINGLY MAKING 'BIG BETS' ON LARGE-SCALE AIR QUALITY PROJECTS THAT DEPLOY MULTIPLE INTERVENTIONS SIMULTANEOUSLY

Effective action on air pollution requires funding across all project types (defined in Box 3.1). Funding to projects categorised as multiple/undefined accounted for the largest proportion of funding for the first time in 2021, totalling over $18 million (Figure 3.2). This represents a 149% increase since 2020, and is in part due to a small number of large grants (above $5 million) committed in 2021. These large grants account for a significant proportion of the jump in funding between 2020 and 2021, and contributed to a doubling of average grant size in 2021. Such funding supports large-scale projects that deploy multiple strategies simultaneously: generating data, assessing impacts, raising awareness, affecting policy and implementing solutions.

Funding for this type and scale of projects was previously only provided by international development funders. The change suggests increased levels of commitment from some foundations and illustrates the ability of air quality grantees to coordinate complex pieces of work across multiple strategies and stakeholders.

The large step up of multiple/undefined funding is also consistent with a broader shift in foundation grantmaking practices, orienting towards 'big bets' on structural solutions to complex problems.[33] Major funding commitments, such as the Bezos Earth Fund committing $10 billion to fighting climate change this decade, are likely to lead to more large-scale, multi-disciplinary, foundation-funded projects moving forward.

Nonetheless, foundation funding continues to play a vital role in supporting work in the different project types. In 2021, funding to communications & awareness and policy & politics projects increased by 22% and 38%, respectively (Figure 3.3). Foundations play a pivotal role in supporting a variety of project types that fall beyond the scope and mandate of international development funding (for example, campaigning to raise awareness of the issue).

BOX 3.1. AIR QUALITY PROJECT TYPES FOR FOUNDATIONS

Data: To improve the quantity, availability, transparency, accuracy or accessibility of air quality information and data.

Impacts & Research: To increase research into and understanding of the impact of air pollution on health, the environment and the economy.

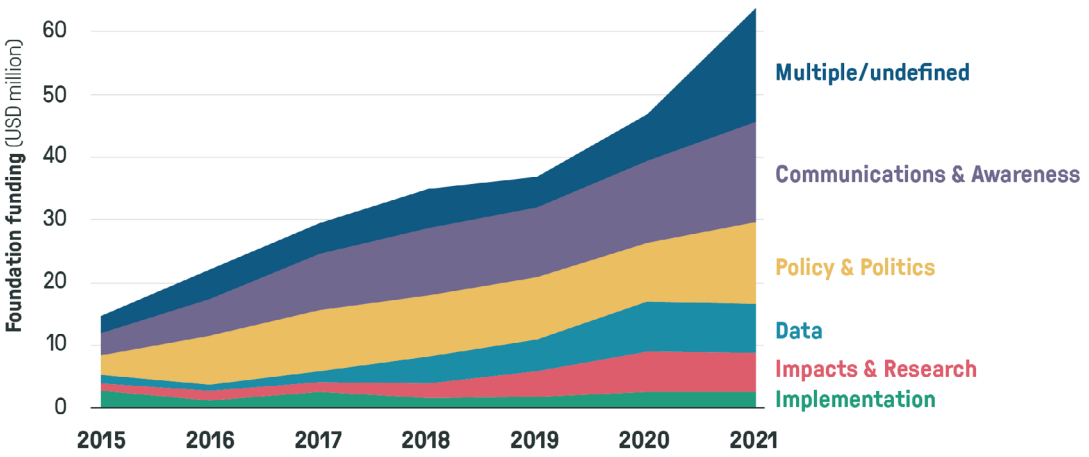
Communications & Awareness: To raise awareness of air pollution, including campaigning, communications and events.

Policy & Politics: To develop, promote, and transform public policies on air quality.

Implementation: To invest in implementing infrastructure to improve air quality.

Multiple/Undefined: To support core costs of an organisation focused on air quality (including field building), where multiple strategies were supported, or where it was not possible to assign an activity type.

FIGURE 3.2. ANNUAL FOUNDATION FUNDING BY PROJECT TYPE, 2015-2021



COUNTRIES IN AFRICA AND ASIA CONTINUE TO RECEIVE THE LEAST FUNDING DESPITE HAVING THE GREATEST POTENTIAL GAINS

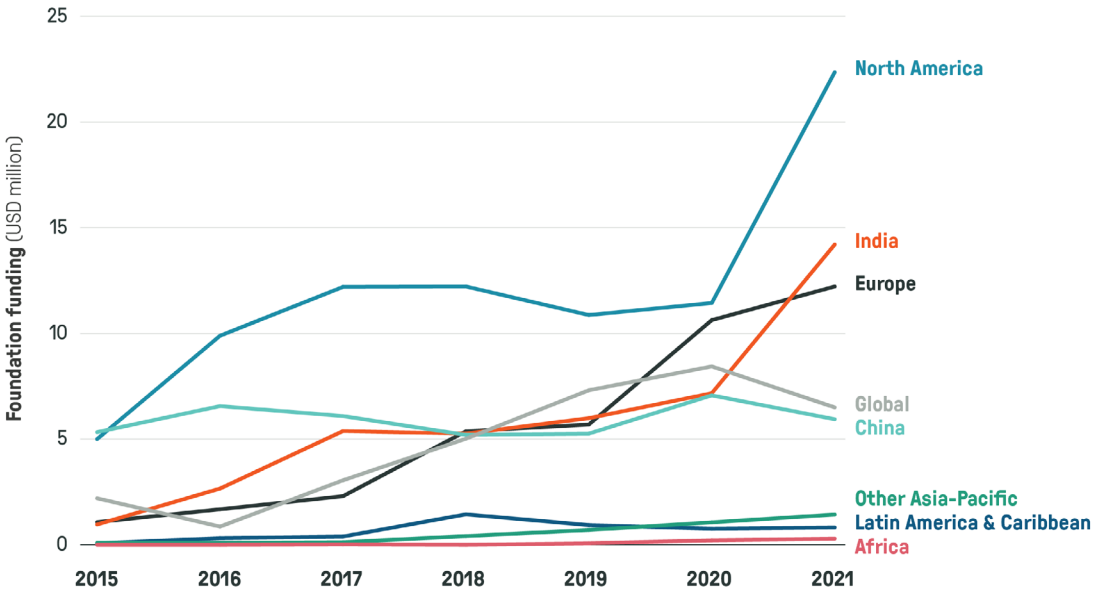
In 2021, philanthropic foundation funding to air quality continued to primarily target China, India and countries in Europe and North America (Figure 3.3). During 2015-2021 these countries have cumulatively attracted 83% of total funding, while global projects have made up an additional 13%. In 2021, funding to air quality projects in India and North America more than doubled, mainly due to the small number of large grants mentioned above.

Air quality funding continues to lag in Africa, Asia (excluding India and China) and Latin America. With a combined population of 3.9 billion people, these three regions account for half of the global population in 2021. Yet, they only received a combined 3.7% of total foundation funding to air quality in the same year.

> **"Africa, Asia (excluding India and China) and Latin America only received a combined 3.7% of total foundation funding to air quality in 2021."**

These three regions are also home to eight out of the ten countries most affected by air pollution.[q] These are the countries that would benefit the most from air pollution policies and funding. Improving air quality to meet WHO's guideline for PM2.5 in these countries, would increase the average life expectancy by more than an estimated 2.5 years. Despite this, out of these ten countries, funding almost exclusively targeted India and China between 2015 and 2021, with Nepal receiving less than 0.2% of the funding to this group and the remaining seven countries receiving no funding.[r]

FIGURE 3.3. ANNUAL FOUNDATION FUNDING BY REGION, 2015-2021



The low level of funding to air quality projects in Africa and Latin America are not consistent with wider foundation funding trends which see Sub-Saharan Africa and Latin America receive some of the largest flows of funding.[34] This suggests a lack of awareness of the size of the air pollution problem, or that the small share of total foundation funding targeting air quality limits its overall geographic reach.

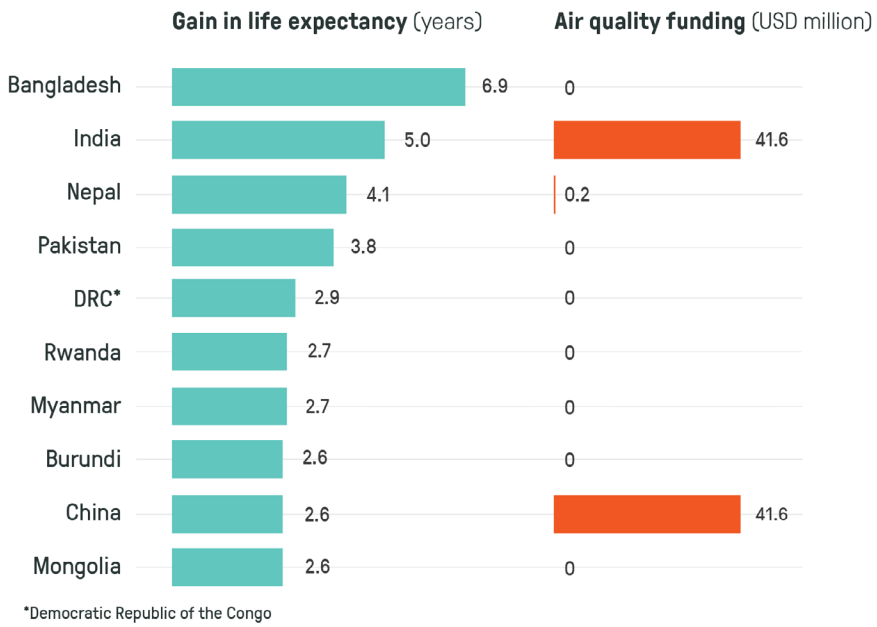
The Air Quality Life Index (AQLI)[35] shows that the countries that have the highest concentrations of air pollution are also those most likely to benefit from air pollution policy and action (Figure 3.4). The ten countries most likely to benefit would see average life expectancy increase by more than 2.5 years if the World Health Organization's guideline for PM2.5 were met. However, seven out of ten of these countries saw no foundation funding between 2015 and 2021.

q The ten countries are Bangladesh, India, Nepal, Pakistan, Democratic Republic of the Congo, Rwanda, Myanmar, Burundi, China and Mongolia (AQLI (2022) Air Quality Life Index. Available at: https://aqli.epic.uchicago.edu/the-index/).

r In this instance we have only considered foundation funding with only one recipient country. Funding to these countries may be captured under global and regional flows.

FIGURE 3.4. GAIN IN LIFE EXPECTANCY IF WHO PM2.5 GUIDELINE IS MET VS. FOUNDATION FUNDING ON AIR QUALITY BY COUNTRY, 2021

Source: Air Quality Life Index (2020)



*Democratic Republic of the Congo

The OECD's work on Private Philanthropy for Development[36] highlights the growing role of domestic philanthropies in emerging markets, with 19% of total philanthropic foundation funding flows for development provided by domestic foundations over the period 2016-2019. In countries such as India, China and Mexico, domestic foundations provided more funding than international ones. A similar trend is evident for air quality foundation funding in China, Mexico and Brazil, where domestic foundations have grown in recent years, providing more than 50% of foundation finance granted to those countries in 2021.

STRENGTHENING AIR QUALITY LEGISLATION IN BRAZIL – INSTITUTO CLIMA E SOCIEDADE

In Brazil in 2018, a bill was proposed for a National Air Quality Policy. This suggested that clean air was moving up the government's agenda, but the initial bill did not go far enough. Instituto Clima e Sociedade funded Instituto Saúde e Sustentabilidade (ISS) to mobilise a coalition of academics, civil society and industry to help strengthen the legislation and raise public awareness of air pollution.

Shaping Brazil's air quality agenda

ISS led a coalition including institutions such as Alana, International Council on Clean Transportation, and The Institute for Energy and the Environment to work with the congress of deputies to strengthen the bill. The coalition established a dialogue with deputies, building consensus along the way as the bill progressed through the committees. The National Policy for Air Quality Act, which was finally approved in July of 2022, will fill existing gaps in air quality regulations, establish clear responsibilities for air quality management and specifies the need to tackle air pollution and climate change together.

While the bill made its way through the committees, the coalition pushed clean air up the public agenda. Through debates and public hearings with experts, the coalition were able to highlight the need for the national monitoring network, for more emissions restrictions and targets aligned with the World Health Organization's guidelines.

The power of collaboration

The success of the coalition approach among industry, civil society, and academics shows the capacity of civil society to coordinate the field and create momentum to shift the dial on air quality. It also highlights how impactful it is to use the different expertise of institutions, bringing them together to create long lasting legislative and policy change to improve people's health and the environment. The clean air sector can now use this momentum to build on the success of the bill and ensure effective implementation pollution reduction.

AIR QUALITY WORK IS RECEIVING FUNDING FROM AN INCREASINGLY DIVERSE ARRAY OF FOUNDATIONS

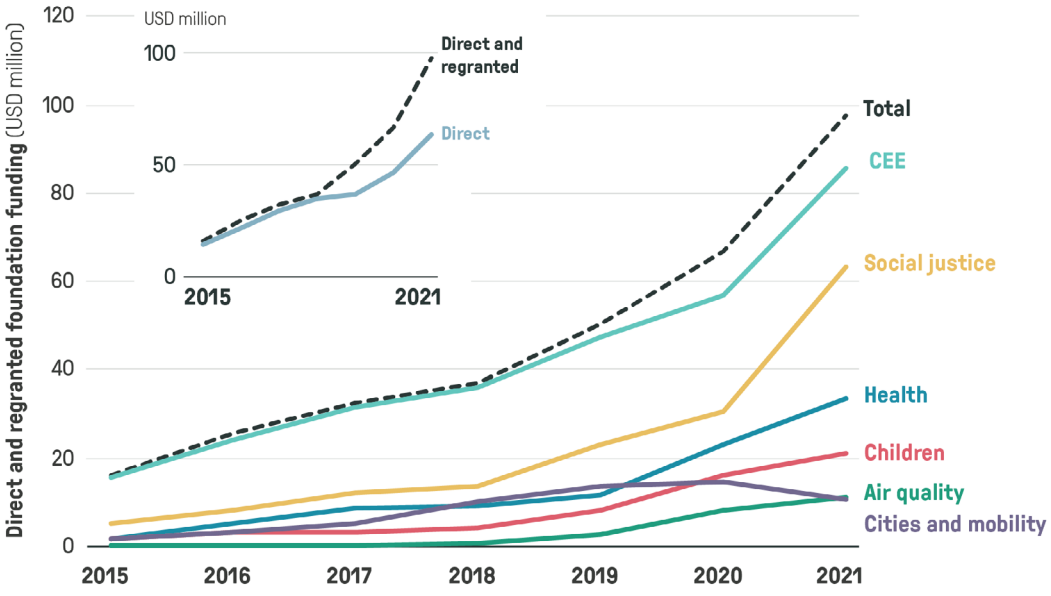
Foundations with a climate, environment or energy (CEE) focus continued to provide the majority of air quality funding in 2021 (88% of the total). The sharp rise in funding from CEE foundations between 2020 and 2021 follows the overall foundation funding trend, illustrating that the large grants mentioned above combine ambitions to improve ambient air quality with workstreams on climate change and/or the environment.

In 2021, funding from foundations with a social justice focus area contributed to 65% of funding, followed by foundations with focus areas of health (34%), children (22%), and cities and mobility (11%) (Figure 3.5). The largest year-on-year rise in funding was from foundations with a social justice focus area, growing 106% (see the Social Justice Spotlight).

Only 11% of funding was from foundations with an air quality focus area. While this figure has grown from virtually 0% in the last few years, there are still only a few foundations with a specialised programme on air quality itself.

Considering the scale and complexity of the problem, more air quality-specific programmes and therefore funding are needed to supplement funding to the issue from other programme areas and push for concerted action. The Lancet Commission on health and pollution highlights that prevention is best achieved by identifying and quantifying air pollution sources and then deploying data-driven control strategies based on law, policy, technology and enforcement that target those sources.[37] To achieve this, foundations need to work on making the case for air quality programmes and projects in their own right as well as drawing the links to other focus areas.

FIGURE 3.5. ANNUAL DIRECT AND REGRANTED FOUNDATION FUNDING[s] BY FOCUS AREA,[t] 2015-2021



s To analyse the engagement of funders with these focus areas, we have included funding flowing both directly (to implementors) and regranted (to other foundations) in the following analysis. Elsewhere the analysis is limited to direct funding flows in order to avoid double counting.

t Foundations can have multiple focus areas. As a result, the combined percentage of specific focus area funding can exceed 100%. Foundation focus areas are determined via desk-based research based on foundations' programmes of work and by information provided by funders themselves.

Funding from foundations with a health focus also rose sharply between 2020 and 2021, increasing by 46% from $23 million to $33 million. While this represents substantial progress, this level of funding still does not match the scale of the health problem posed by air pollution. In addition, 93% of this funding is from foundations that work on both CEE and health – just $2 million was spent in 2021 by health funders not working on climate or the environment.

Billions of dollars are granted out by foundations across health topics each year and a significant shift in perspectives on air quality is still needed to fully leverage this pool of funding. Some large grants to indoor air quality reported from health foundations[u] may suggest an increased interest in combatting the morbidity and mortality impact of pollution at source.

In recent years, regranted funding (i.e., funding via an intermediary foundation) has become more prevalent, increasing from 6% of total in 2018 to 35% in 2021. Motivations for using regranting intermediaries varies among philanthropic foundations. In a disparate field such as air pollution, regranting can enable foundations to get up to speed quickly by making the most of a regranter's expertise and networks. Regranters can also play wider roles in building capacity, campaigning or convening a community.[38]

Regranting practices vary across focus areas. While most CEE and social justice focussed foundations fund directly to air quality implementors (63% and 51% in 2021 respectively), those with a focus on children tend to channel funding through regranting institutions (with 59% of funding being regranted in 2021).

u Reported in the OECD-DAC database.

IMPROVING AIR QUALITY IN AND AROUND LONDON SCHOOLS – IMPACT ON URBAN HEALTH

The health effects of air pollution are unequal, particularly in cities. Children are among the groups that are disproportionately affected because their immune systems, lungs and brains are still developing. Impact on Urban Health, a health funder based in London, funded a project that aimed to understand the sources of air pollution in and around in London and to test the effectiveness of different solutions.

Supporting schools to protect children's health

The project brought together a multidisciplinary team to support three schools, including engagement specialists Global Action Plan, technical advisors Arup, and evaluators at the University of Surrey. The team provided schools with the necessary expertise to implement solutions, while filling a resource gap — a well-known barrier to schools acting on air pollution. The solutions were categorised as: educational (teacher engagement workshops), behavioural (anti-idling campaigns) and physical (installing an air purifier and green screens of plants).

The team also measured air pollution levels before and after interventions to gauge effectiveness. As a result of the solutions, the project significantly reduced air pollution in and around schools:

- A temporary road closure for a car free day reduced particulate matter by up to 36%.
- Repairing windows increased ventilation rates by 12.5%, which reduced carbon dioxide by up to 40%.
- A green screen at the front of a school, close to a busy road, reduced particulate matter by up to 44% during crosswind conditions.
- Using air cleaning devices reduced in-class concentrations of particulate matter by up to 59%.

Blueprint for school action on clean air worldwide

The project shows that schools can take practical action to reduce the effects of air pollution on students. Working with schools on air quality can be challenging, especially because schools have limited capacity. That is why practical tools that demonstrate the effectiveness of interventions, and how to implement them in a cost and time effective way, are useful for schools and local authorities.

The insights from this work have been organised into educational resource packs, evidence-based toolkits, and case studies, which are all available via the Transform Our World website.

TACKLING SOCIAL INJUSTICE

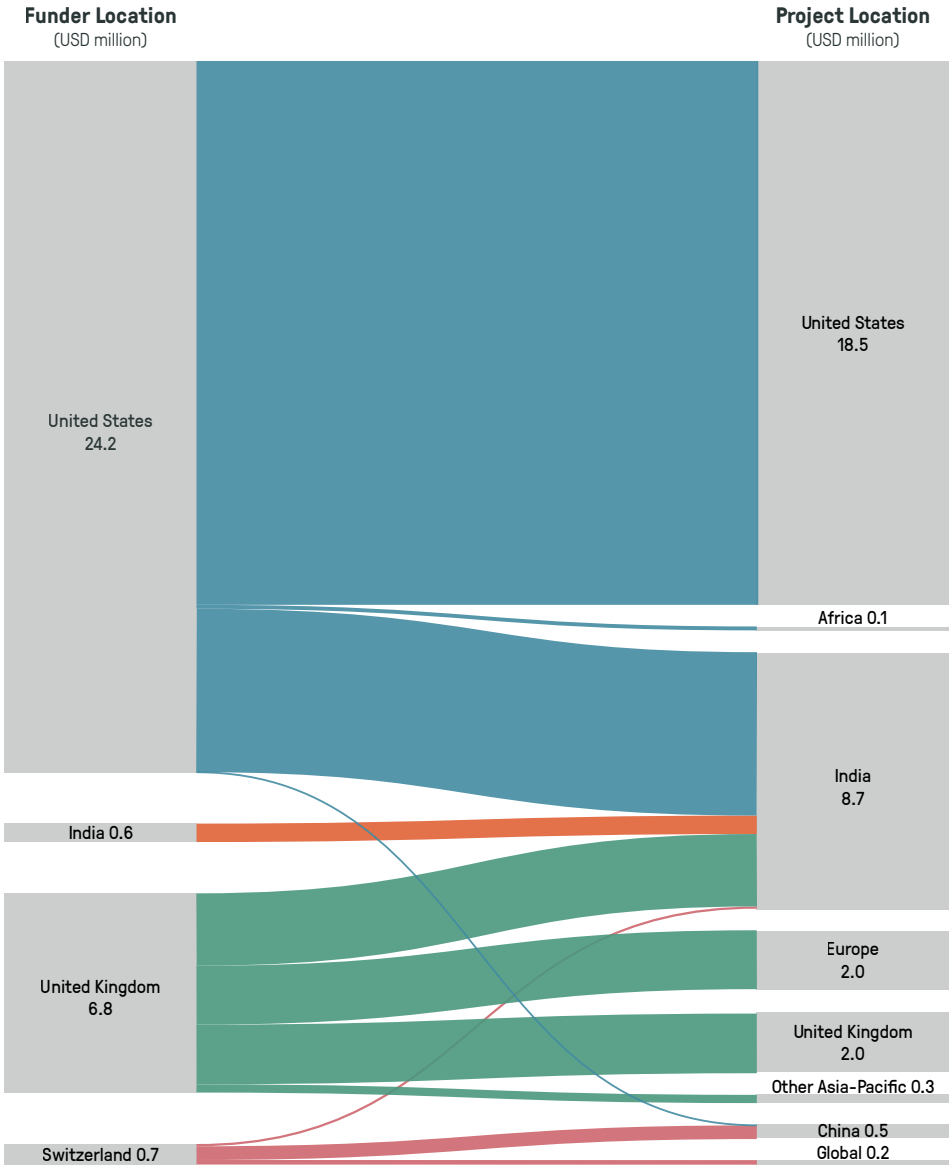
Air pollution is a global emergency, yet levels of pollution, exposure and health impacts also vary between neighbourhoods and streets. Historically marginalised (including tribal, indigenous, Dalit) and poorer communities are likely to experience the greatest burden of air pollution. A growing body of evidence illustrates the inequities of exposure to air pollution. In the US, polluters have been shown to disproportionately affect racial-ethnic minorities,[39] with polluting facilities predominantly located in historically low-income neighbourhoods and communities of colour.[40] For example, in the state of Louisiana a 'corridor' of industry overlays what was formerly known as 'Plantation Country' - locally named 'Death Alley'. Residents of the primarily black communities that live there breathe some of the most toxic air in the country, and as a result suffer high rates of cancer and mortality from COVID-19.[41]

The social injustice of the air we breathe is exacerbated by the fact that poverty and existing health inequities act to worsen the health and social impacts of air pollution. These worse impacts are also often felt by those who are least responsible. Without a social justice lens, action on air pollution risks maintaining these disparities despite improving air quality overall.[42]

Philanthropic foundations are becoming increasingly focused on equity and social justice, with foundations based in the United States committing nearly $500 million to racial justice in 2020.[43] The sharp rise in social justice funding on air quality projects (Figure 3.5) illustrates that many funders are drawing this link between air pollution and social justice. In 2021, foundations with a social justice focus area represented roughly a third of all foundations making grants on air quality. These funders made $62.8 million of direct and regranted funding to air quality in 2021, more than doubling from 2020 levels. This rise indicates that the 'big bets' made on air quality in 2021 have come from foundations with a social justice focus.

The majority (75%) of direct funding to air quality projects from social justice funders in 2021 was from foundations headquartered in the United States, reflecting the increasing emphasis on social justice seen in the US since 2020. Of this funding, 76% was spent domestically in the US (Figure 3.7).

FIGURE 3.6. FLOW OF FUNDING FROM FOUNDATIONS WITH A SOCIAL JUSTICE FOCUS AREA BY LOCATION OF FOUNDATION HQ (LEFT) AND PROJECT LOCATION (RIGHT), 2021



Of the social justice funders making grants on air quality in 2021, 81% also have a CEE focus area. The strong link to climate and environment programmes suggests that air pollution is acting as bridge topic within work on environmental justice and just transition.

Health equity (where all people have the same opportunity for good health outcomes) is a major component of social justice. A 2016 report in Grantwatch[44] found that investment in and attention to environmental hazards, including air pollution, have been insufficient to realise the potential for reducing negative impacts on health and associated disparities. In 2021, 44% of social justice funders working on air quality projects also had a health focus. Therefore, while some of the foundations that are prioritising CEE and social justice simultaneously are also working to improve public health, there is scope for further synergy between the issues.

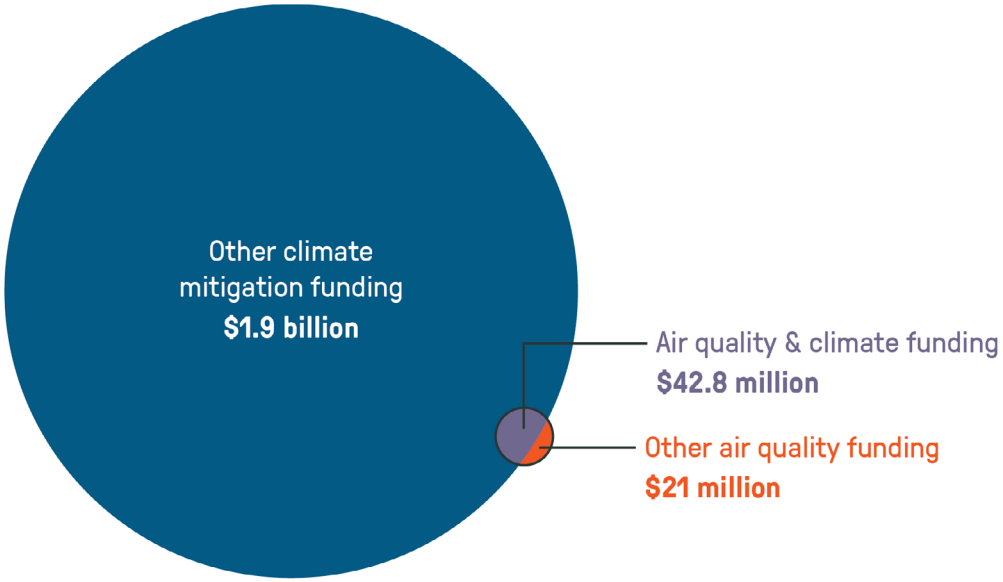
MOST FOUNDATION FUNDING ON AIR QUALITY IS ALSO FOCUSSING ON TACKLING CLIMATE CHANGE

Tackling air pollution and climate change in isolation can lead to damaging trade-offs. Coordinated, intentional action by foundations can be a win-win in tackling climate change and air pollution together.

Due to the interconnected nature of the two issues, we see overlaps in foundation funding where projects tackle both air quality and climate change simultaneously (Figure 3.7). **Most tracked foundation funding to air quality (67%, or $42.8 million) is also considered to be climate mitigation.**[v] Conversely, foundation funding which as an explicit aim tackles both air pollution and climate change is just 2% of all foundation grant making on climate mitigation. The remaining 98% of foundation funding to climate mitigation ($1.9 billion)[w] fails to intentionally capture synergies between the two issues, just as with international development funders. While it is likely that the vast majority of these projects have co-benefits or implicit benefits for air quality, without tackling the issue intentionally, they may not be reaping the associated health and economic benefits.

FIGURE 3.7. INTERLINKAGES BETWEEN AIR QUALITY FUNDING, AIR QUALITY & CLIMATE FUNDING AND CLIMATE MITIGATION FUNDING FROM PHILANTHROPIC FOUNDATIONS, 2021 [vw]

Source: ClimateWorks Foundation (2021)[45]



v Funding types are defined using ClimateWorks Foundation's database of foundation funding on climate mitigation and Clean Air Fund's database on foundation funding on outdoor air quality.

w Total foundation giving on climate mitigation in 2021 is based on a 2020 estimate from ClimateWorks Foundation. As 2020 is the most recent year of data, we assume that in 2021 total climate foundation mitigation funding is at the same level or higher.

4. STATE OF AFRICAN AIR QUALITY FUNDING

Air pollution (both indoor and outdoor) was responsible for 1.1 million deaths in Africa in 2019 – the second largest cause of death, exceeded only by HIV/AIDS.x Outdoor air pollution levels caused 40% of these deaths and, though improvements are being made on indoor air quality, rapid urbanisation and fossil fuel-based economic growth promises to massively increase outdoor air pollution. In a worst-case scenario, air pollution concentrations will increase exponentially up to levels now seen in some Asian countries.[46] Indeed, according to UNEP's Air Pollution and Development in Africa report, increased levels of outdoor air pollution in Africa could be the beginning of "a looming problem" – becoming a much larger cause of disease and premature death while posing a major threat to economic development. The upcoming COP27 in Egypt is a unique opportunity to raise awareness of the importance of tackling air pollution in the continent and to mobilise the resources needed.

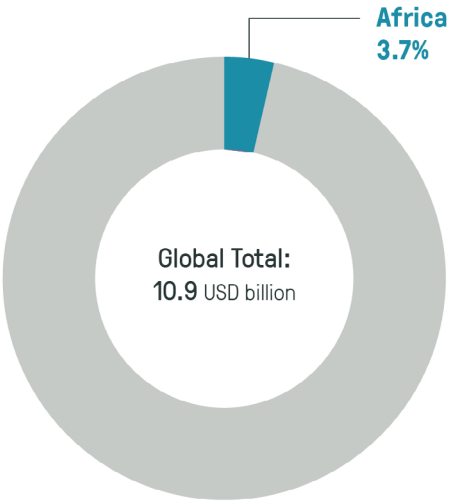
AFRICAN COUNTRIES ONLY RECEIVE 3.7% OF INTERNATIONAL DEVELOPMENT AIR QUALITY FUNDING

Despite the urgent need to tackle air pollution in the continent, Africa continues to receive a meagre share of total air quality funding. Between 2015 and 2021, international development funders committed only $403.6 million to tackling air pollution in the region, representing 3.7% of total air quality funding (Figure 4.1). This means that for every $1000 committed for clean air projects, only $37 went to African countries. Though this share has increased over time (from 1.1% in 2015-2016 to 8% in 2020-2021), it is still disproportionately low if we consider that 26% of global deaths caused by outdoor air pollution are in Africa.[47] International development funders, which are strategically well positioned to push forward the air quality agenda, must increase their commitments to clean air in the region.

> **"Air pollution was responsible for 1.1 million deaths in Africa in 2019 – the second largest cause of death after HIV/AIDS."**

x GBD 2019 Risk Factor Collaborators. Global burden of 87 risk factors in 204 countries and territories, 1990-2019: a systematic analysis for the Global Burden of Disease Study 2019. Lancet 2020 396:1135-59.

FIGURE 4.1. AIR QUALITY FUNDING GOING TO AFRICA AS A SHARE OF TOTAL AIR QUALITY FUNDING BY INTERNATIONAL DEVELOPMENT FUNDERS, 2015-2021



Air quality funding in Africa was highly concentrated geographically, with five countries receiving 88% of total flows in 2015-2021: Egypt (54%), Morocco (24%), Uganda (5%), Niger (3%) and Sudan (3%). This is mainly because funding goes to a few large projects. For example, virtually all air quality funding going to Egypt was committed in 2020 by the International Bank for Reconstruction and Development (IBRD) for the greater Cairo air pollution management and climate change project ($200 million).

VIRTUALLY NONE OF THE CLIMATE PROJECTS FUNDED BY INTERNATIONAL DEVELOPMENT FUNDERS IN AFRICA HAD AIR QUALITY OBJECTIVES

International development funders continue to consider air quality and climate change as separate issues when funding projects in Africa, more so than in the rest of the world. Between 2015 and 2020, only 6% of total air quality funding in the region also simultaneously tackled climate change – as opposed to 76% globally (see analysis in Section 2.2).

At the same time, virtually none of the climate mitigation and adaptation commitments made by international development funders in Africa had air quality explicit objectives. During 2017-2020, funders committed cumulative $48 billion to climate projects in the region; air quality & climate funding accounted for only 0.02% of these flows – much lower than the global average share of 2.2% in 2015-2020 (see analysis in Section 2.2).

While this shows how little attention has been given to simultaneously tackling climate change and air pollution, it also demonstrates the great potential to leverage international public climate finance flows to scale up air quality & climate funding in the region. For example, we estimate that during 2015-2020, an additional $1.2 billion in climate finance committed by international development funders to Africa also had direct air quality benefits, though these were not explicitly included among project objectives.

INTERNATIONAL DEVELOPMENT FUNDERS COMMITTED 36 TIMES MORE FUNDING TO FOSSIL FUEL-PROLONGING PROJECTS THAN AIR QUALITY IN 2015-2020

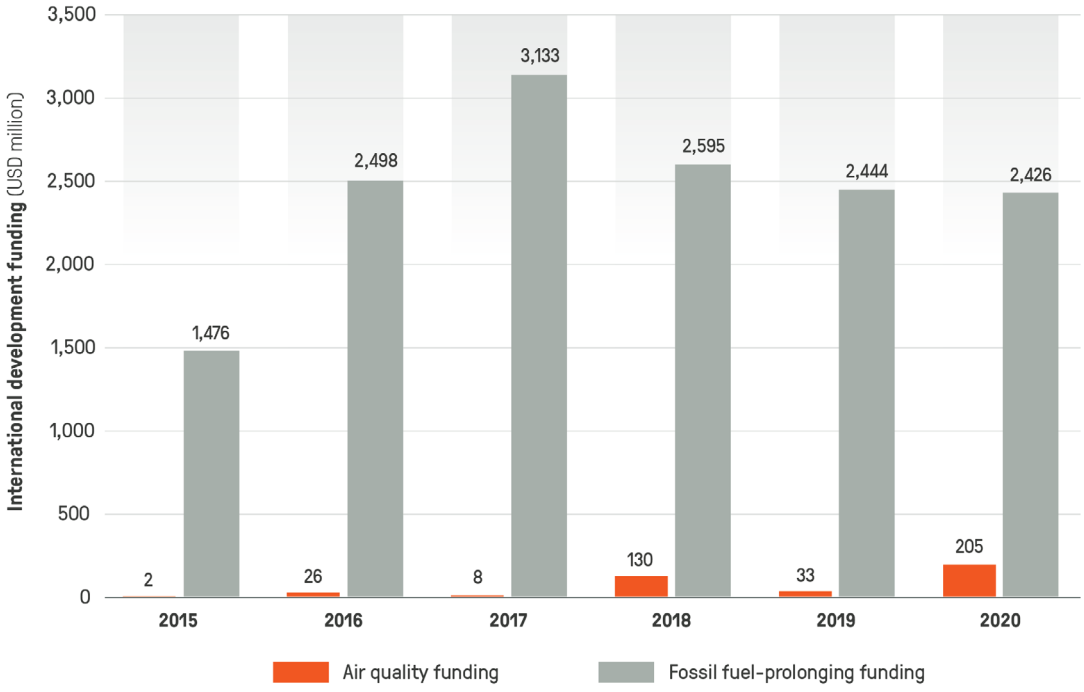
Air quality funding in Africa remained low – at around $67 million per year – and international development funders' commitments to fossil fuel-prolonging has hovered at around $2.4 billion per year (Figure 4.2). Between 2015 and 2020, international development funders cumulatively committed 36 times more funding to fossil fuel-prolonging ($14.6 billion) than air quality ($403.6 million).

One such example, is the $200 million, 18-year loan from international development funders to Mozambique to develop their natural gas reserves (see more on this on page 49). Supporting energy-poor African countries to replace dirtier, more expensive, fossil fuel options may seem advantageous in the short- and medium-term. However, the serious long-term health and environmental impacts must be taken into account too. Also, the opportunity to invest in fossil fuel projects should be weighed up against the investment opportunity of renewables, such as wind, hydro, geothermal and solar energy which are plentiful and largely untapped in countries like Mozambique.

Issues of environmental justice need to be considered too. Donor countries have been challenged for seeking to block financing for fossil-fuel powered energy generation in low- and middle-income countries, while continuing to fund such activities back home.[48] To make matters worse, many countries dump outdated technologies such as used cars and lower-grade fuels on African countries, further burdening the continent with a problem they did not create.[49]

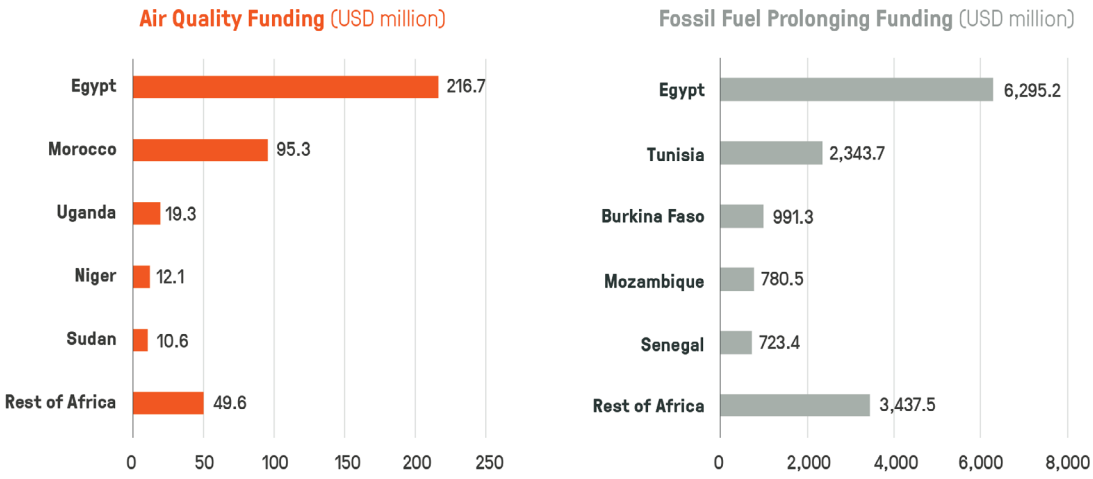
"In Africa, international development funders committed 36 times more funding to fossil fuel-prolonging ($14.6 billion) than to clean air measures ($403.6 million)."

FIGURE 4.2. INTERNATIONAL DEVELOPMENT FUNDING GOING TO AIR QUALITY PROJECTS VS. FOSSIL FUEL-PROLONGING PROJECTS IN AFRICA



Looking at the country-breakdown, Egypt was also the largest recipient of fossil fuel-prolonging funding over the period (43% of the continental total, or $6.3 billion), an interesting dynamic in light of the upcoming COP27 to be held in Sharm el-Sheikh. The bulk of tracked finance was for oil and gas extraction/production, with a number of energy efficiency investments and other refurbishments at a Suez refinery. Similar to air quality funding, fossil-fuel prolonging funding in Africa was also geographically very concentrated, with 10 countries receiving 90% of commitments. Figure 4.3 compares the top five country recipients of international development funding for air quality (left) and fossil-fuel prolonging (right).

FIGURE 4.3. TOP 5 AFRICAN COUNTRIES RECEIVING AIR QUALITY AND FOSSIL FUEL-PROLONGING FUNDING BY INTERNATIONAL DEVELOPMENT FUNDERS, 2015-2020



Of the funding to fossil fuel prolonging projects 76% ($11.1 billion) went to upstream oil and gas activities (i.e. extraction, production, refinery and storage) which have impacts on air pollution directly and indirectly. Almost 22% of funding commitments ($3.2 billion) were for the construction of oil and gas power generation plants with direct impacts on air pollution.

In 2015-2020 , international development funders provided virtually no funding to coal, the fossil fuel which has the greatest negative impacts on air pollution and health. While investments in oil and gas are less harmful for health, further investments in these sources risk locking African economies in long term carbon-intensive infrastructure that will eventually need to be phased out. This will result in higher health-related costs for society compared to cleaner alternatives. Furthermore, fossil fuel-based energy prices are volatile leaving the population vulnerable to the market fluctuations. Often, large fossil fuel based projects result in forced displacement, loss of livelihoods, and even increased insecurity from an armed insurgency.[50]

By building their economies around more sustainable energy sources, many African countries have the opportunity to achieve prosperity while avoiding the levels of outdoor air pollution which are plaguing other developing countries where economic growth has heavily relied on fossil fuels.[51]

MOZAMBIQUE: ENERGY TRANSITION AND CARBON LOCK-IN

The data indicates that, while no coal finance has been committed to Africa by international development funders since 2016, natural gas continues to receive substantial funding in the continent ($531 million per year in 2019-2020). The transition from coal to gas in the short term is consistent with development patterns followed by other countries. Because of the energy access deficit in the region, it is difficult to caution against substitution of one fossil fuel with another lower-emitting one. Nonetheless, with implications for both health and climate in the long run, the region's natural gas transition demands further consideration to fully understand the costs and benefits at stake, now and over the longer-term.

In 2020, Mozambique received a $200 million, 18-year loan from international development funders for the development, construction and operation of a 420 MW gas-fired power plant in the Inhambane province in the southern part of the country. This compares to $0.35 million of air quality funding committed to Mozambique over the period 2015-2021.

Given the vast natural gas reserves available in Mozambique (estimated at 250 trillion cubic feet), heavy reliance of rural populations on forest biomass, and low rates of electrification (34% in 2021), natural gas certainly appears to be an obvious short-term solution to foster economic growth and progress towards SDGs. Though certainly the "lesser of two evils", set against oil and coal, the Inhambane power plant threatens to lock-in fossil-fuel infrastructure for decades, with long-term implications for sustainable development in Mozambique.

The burning of natural gas, and unintentional leakages at extraction sites, produce air pollutants, greenhouse gas emissions, as well as water pollution. All of these have direct implications for public health. For this reason, it's important that International development funders ensure they are fully accounting for all externalities when deciding to invest. The costs of projects to climate, health and overall development objectives should be quantified during project appraisals. The benefits of natural gas projects needs to be weighed up against the costs of locking-in fossil-fuel infrastructure, over the short and longer-term. Moreover, especially given Mozambique's abundance of untapped hydro, wind, solar and hydrothermal resources, fossil fuel-based development interventions must be compared and priced against viable cleaner alternatives. Where natural gas nonetheless emerges as a first-best development intervention, pricing in all relevant externalities, efforts should be channelled towards mitigating emissions wherever possible (for example, via use of carbon capture technologies).

Skipping the natural gas rung of the wider energy transition ladder may not be possible for countries like Mozambique, particularly where resource abundance and low energy access rates favour it in the short-term. Nonetheless, limited public development funding resources should be used carefully to invest in projects that are consistent with recipient countries' climate and health development objectives over the long-term.

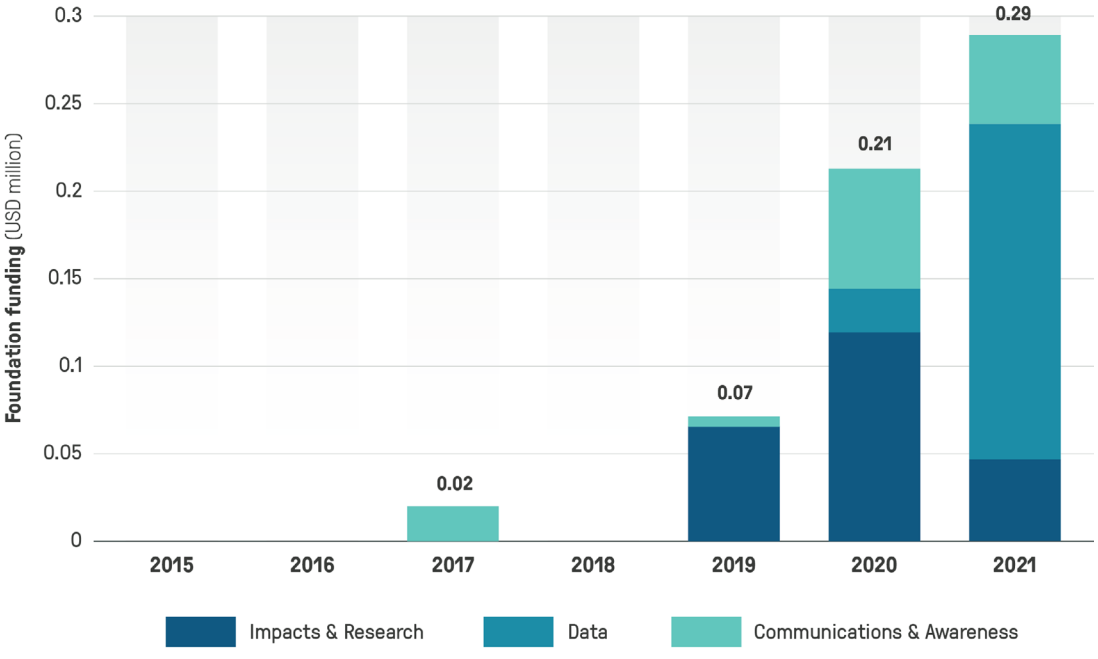
PHILANTHROPIC AIR QUALITY FUNDING TO AFRICA WAS JUST 0.2% OF TOTAL PHILANTHROPIC FINANCE GRANTED BETWEEN 2015 AND 2021

Foundation funding to Africa totalled only $0.6 million between 2015 and 2021. This represents just 0.2% of total foundation air quality funding over the same time period – with only five foundations providing grants for outdoor air quality directly to the region.

While funding to 'Global' projects may have components of work undertaken in African countries, there is a clear need for regional- and country-specific funding that is more targeted and locally relevant. The flexibility afforded to foundations relative to international development funders means that they are well placed to intervene early – by driving awareness and taking initial action. By targeting their interventions, foundations will help build the air quality movement in Africa as well as build capacity.

Foundation funding has increased in recent years , but a rapid acceleration is required. To date, funding in Africa has been split relatively evenly between Communications & Awareness, Data and Impacts & Research (Figure 4.4).

FIGURE 4.4. FOUNDATION AIR QUALITY FUNDING TO AFRICA BY TYPE OF PROJECT, 2015-2021



ANNEX: METHODOLOGY

This report has been made possible by the generous data sharing of leading foundations and ClimateWorks Foundation's Global Intelligence department, and by public records such as Official Development Finance spend, and other proprietary data analysed by CPI (see more in Table A 1). Every effort has been made to ensure the data presented in this report is representative of the global air quality funding landscape. The accuracy of this analysis relies on the quality of information provided by funders and the availability of funding information. Our scope of analysis focused on international development funding and philanthropic foundations. However, we recognise that domestic public budget, or private sector funding could be significant contributors of air quality funding which we may examine in the future iterations of the report. The Clean Air Fund would welcome the input of any funders not approached in developing this report to inform future publications.

TABLE A1: DATA SOURCES

Type of funder	Data source
International development funders (Chapter 2)	Data for international development funding (including international public climate finance and fossil fuel prolonging funding): • OECD Creditor Reporting System (2015-2020) • IATI (2021) • CPI's proprietary survey data (2015-2020) • Climate Funds Update database maintained by ODI • Publicly available data reported by development finance institutions
Philanthropic foundations (Chapter 3)	Data for philanthropic foundations funding: • In-house data on foundation funding for climate change and adjacent topics from ClimateWorks Foundation's Global Intelligence department. • Data collected by the Clean Air Fund through direct engagement with other foundations and from online and public sources.

GEOGRAPHICAL GROUPING

Geographical categorisations are defined by the location of the work undertaken in the project:

- Europe includes pan-European grants and grants made in the UK and Turkey.
- Other Asia-Pacific includes all grants made in the Asia-Pacific region excluding: Bangladesh, China, Mongolia, Pakistan and the Philippines for international development funding; and India and China for philanthropic foundation funding.
- North America includes grants made in the United States of America and Canada.
- Latin America & Caribbean includes grants made to Southern and Central American countries, Caribbean countries and Mexico.
- Funding channelled across more than one region is categorised as global funding.

NOTES ON DEFINITIONS OF CLIMATE FINANCE AND OFFICIAL DEVELOPMENT ASSISTANCE

Climate finance

- There is no internationally agreed definition of climate finance. In the absence of a mutually agreed definition, and of broad agreement between developed and developing countries on what should be counted as climate finance, there are inconsistencies in analyses of climate finance figures.
- This report relies on CPI's working definition of climate finance which is aligned with the recommended operational definition of the UNFCCC Standing Committee on Finance: "Climate finance aims at reducing emissions and enhancing sinks of greenhouse gases and aims at reducing vulnerability of, and maintaining and increasing the resilience of, human and ecological systems to negative climate change impacts." This is a broader definition of climate finance which does not limit the scope to the $100 billion per year developed countries committed to mobilize to assist developing countriesy. Further information on the definition is available in the CPI methodology.
- The analysis of international public climate finance included in this report encompasses financial flows which do not harmonise with those analysed by the OECD to assess progress toward the international $100 billion goal. Part of the reason is methodological differences and disagreements on what should and should not count as funding towards the $100bn goal.
- The analysis looked into the international public funding element of global climate finance flows – funding flows originated by public bodies including governments and their agencies, multilateral and bilateral development banks and channelled overseas for climate mitigation and adaptation objectives as per CPI's Global Landscape of Climate Finance.
- The analysis in this report looks at international climate finance flows from public-sector development funders based in both developed and developing and emerging markets. This means that this report also covers, for example, South-South international climate finance flows where data is available.

Official Development Assistance

- Official Development Assistance (ODA), commonly known as development aid, is technically defined by the Organisation of Economic Development and Cooperation (OECD) as the transfer by official agencies, including state and local governments of public finances to developing countries, multilateral organizations and International NGOs that is administered with the main objective of promoting the welfare and the economic development of developing countries, and is concessional in character.

y In 2009, at the 15th Conference of Parties (COP15) of the UNFCCC, developed countries committed to collectively mobilise $100 billion per year by 2020 in climate finance for developing countries. More recently in 2015, this goal was confirmed and extended to 2025 during COP21 in Paris.

NOTES ON INTERNATIONAL DEVELOPMENT FUNDING DATA

Data source

- Data for ODA and OOF from 2015 to 2020 is drawn from the Creditor Reporting System (CRS) database maintained by the OECD-DAC.
- CRS data takes approximately a year to publish. 2021 data is therefore from the International Aid Transparency Initiative (IATI). Data from both sources was compared to ensure consistency across years prior to 2021. Given the data for 2021 is drawn from a different source to the data for 2015–2020, it is considered preliminary.
- Philanthropic records were excluded from the analysis included within the CRS database to concentrate only on records from what the DAC refer to as 'Official Donors' (nation states and multilateral organisations). In this report these are referred to as 'development funders'.
- International climate finance data is captured via data sources used in Global Landscape of Climate Finance (the Landscape) 2015 – 2020 through CPI analysis including on synergistic air quality and climate funding. To determine what constitutes mitigation and adaptation finance provided by the public sector, we rely on the tracking methodologies and reporting followed by: i) the members of the OECD's Development Assistance Committee (DAC), data for which is publicly available through the Creditor Reporting System (CRS) database; ii) the group of Multilateral Development Banks (MDB) and members of the International Development Finance Club.
- Additional information was obtained on projects from documents contained in development funder websites.

Analysis and assumptions

- The report analyses commitments as opposed to disbursement data for international development funders (which was what was reported in the State of Global Air Quality Funding 2021 report). We are aware that data on disbursements are not universally made available by all donors that report to OECD-DAC. To avoid information bias due to partial data, we adopted commitments data for the 2022 report. Commitments data provide a better view on the trends of funding decisions and priorities by the donors.
- Data in the CRS and IATI databases are of varying quality and have broad project codes. To ensure the data collection for the report was comprehensive, a wide-ranging list of keywords and phrases was used by applying data automation techniques to identify records containing one or more of them in the project title, short description or long description. Each record was manually checked to remove any false positives (for example, if the project was wholly aimed at indoor air pollution). If funders' descriptions of their projects were insufficiently detailed, some spending may have been missed.
- Since data obtained through CRS and Global Landscape of Climate Finance had some overlaps due to data sources, careful data cleaning was conducted to avoid double counting.

NOTES ON FOUNDATION FUNDING DATA

- Analysis of foundation funding also uses commitments (total grant budgets). However, unlike for international development funding, grants that span multiple years are assumed to be disbursed evenly over the grant period. This is to prevent very large grants awarded in a single year but granted across multiple years significantly skewing the foundation funding data. This approach is consistent with other comparable analyses of foundation funding data.
- To capture philanthropic funding flows and avoid double counting in total values, grants were categorised as direct or regranted. Where funding flowed from an endowed foundation to a project via a regranter or where a foundation supported core or programmatic costs for another foundation, this funding was categorised as Regranted. An example of this would be where a grant was made by an endowed foundation to the Clean Air Fund, a regranter. Where funding flowed directly from an endowed foundation or a regranter to a grantee, this funding was categorised as Direct. Direct grants were used for all totals (therefore avoiding double counting) apart from the analysis of funder focus areas where both direct and regranted grants were considered.
- The focus areas of foundations were determined through desk-based research based on foundations' programmes of work, and by information provided by funders themselves. A keyword search was applied to programme names to ensure consistent categorisation. For example, if a foundation had climate and children focus areas, all grant making from that foundation would be counted under both climate, energy & environment (CEE) and children in the analysis in the report. Percentages of specific focus area funding against the total amount therefore do not add up to 100%. It is important to note that other focus areas exist in the field of air quality (education, international development etc.) but these were omitted from the analysis above for brevity.
- Where grants are large (>$5 million) and it is evident that not all funding within the grant is being used to combat ambient air pollution, a weighting is applied to reduce the total grant amount to the proportion is used towards activities on ambient air pollution. This weighting is determined in consultation with the relevant funder and/or grantee.

All figures are best estimates based on available data and will be updated annually as new data becomes available. The data is therefore subject to change, particularly in the most recent years.

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