



**CLEAN
AIR
FUND**

THE STATE OF GLOBAL AIR QUALITY FUNDING 2021

An analysis of official
development and
foundation funding to
improve outdoor air quality.

ACKNOWLEDGEMENTS

This report is written by the Clean Air Fund, a global philanthropic organisation that brings together private and corporate funders – from climate and health to equity and child development – to create a future where everyone breathes clean air.

The Clean Air Fund has produced this report using data generously shared by leading foundations in the air quality field and public records of official development finance. Thank you to ClimateWorks Foundation and Development Initiatives for sharing data from their ongoing tracking of the field and for supporting the analysis.

ADVISORY GROUP

We are grateful for the advice and guidance of the Advisory Group, which includes experts in official development funding and philanthropic foundations funding. Please note the report findings and recommendations are the responsibility of the Clean Air Fund alone and not the Advisory Group.

MEMBERS OF THE ADVISORY GROUP ARE:

Yewande Awe (World Bank)

Sheila Watson (FIA Foundation)

Christa Hasenkopf (USAID)

Ben Gibson (U.S. EPA)

Rob Hughes (Consultant)

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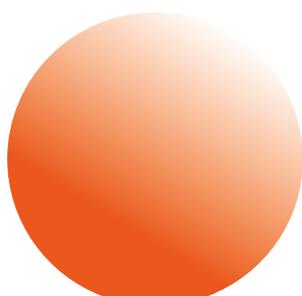
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WHY CLEANING UP OUR AIR MATTERS

“The reality is that filthy air is killing millions of people around the world every year.

My daughter’s case has helped raise awareness of the devastating impact of air pollution on individuals’ health, as well as their families and communities. I will continue to campaign until there is clean air for all. But campaigners can’t do it alone.

Donors play a critical role by providing the support-base which sustains the fight for clean air, ensuring our messages are amplified and heard by those with the power to take action.”

Rosamund Adoo-Kissi-Debrah, the mother of Ella Kissi-Debrah who died in 2013 aged 9 from excessive exposure to air pollution. Ella is believed to be the first person in the world to have air pollution listed as cause of death on her death certificate. Rosamund is campaigning to have WHO air quality targets enshrined in UK law and to bring more awareness to other parents about the danger and impact of air pollution on their children and their communities.



**Rosamund Adoo-Kissi-Debrah.
Credit: Ella Roberta Foundation**

FOREWORD

On the International Day of Clean Air for blue skies, this report from the Clean Air Fund on the State of Global Air Quality Funding is a timely reminder that much more can be done to tackle dangerous air pollution.

This year's theme for the day is "Healthy Air, Healthy Planet" highlighting the harmful health impacts of air pollution. It is time for governments and all stakeholders in our common future to recognise that action on air pollution is central to making meaningful progress towards meeting the Sustainable Development Goals. Air quality is explicitly mentioned in two of the goals, and cuts across many more impacting health, climate, decarbonisation, economic development, inequality, and poverty.

Dirty air leads to the early death of 4.2 million people every single year, and on average we each lose three years of life expectancy to it.¹ Our relentless burning of fossil fuels pollutes our air, costing the global economy billions of dollars each year.² We also know that the burden of pollution is not shared equally, with the most disadvantaged communities bearing the brunt of it. Air pollution has no place in the future we are all working towards. We cannot realise the 2030 Agenda without clean air. And we could achieve a lot more, a lot quicker, if funding for the issue matched the scale of the problem.

This report indicates that less than 1% of total official development and foundation funding is spent on tackling air pollution. If we do not mobilise sufficient resources to tackle air pollution, the impacts of the problem will run out of control. As the latest report from the Intergovernmental Panel on Climate Change tells us, the targeted reduction of many air pollutants can reduce global warming and improve air quality.³

Ending the financing of fossil-fuel development and instead prioritizing investment in growing clean, carbon-free economies will bring immediate benefits. It will save many lives. It will improve human and ecological health and well-being, whilst bringing greater prosperity for all. A world with clean air for all, is a world in which everyone gets a better chance to flourish.



**Inger Andersen, Executive Director,
United Nations Environment Programme**

EXECUTIVE SUMMARY

Air pollution is one of the most urgent and deadly global challenges. In 2016 the World Health Organisation estimated outdoor air pollution led to the early deaths of 4.2 million people and studies since suggest the actual toll could be 9 million a year or more. Investing in air quality can protect our health and unlock other benefits, mitigating climate change and addressing inequalities. It delivers a clean air dividend by boosting productivity and enabling sustainable economic growth.

As deaths linked to air pollution continue to rise in the poorest parts of the world, funding to reverse that trend – and allow everyone to breathe clean air – is more critical than ever. This report shows that current levels of funding fall far short.

In this report, we review global funding to improve outdoor air quality from official development funders and from philanthropic foundations. This analysis covers investments made to date, the geographies and types of projects being funded, and trends over time. We also identify funding for projects which work against clean air.

The research findings and recommendations show the bigger picture, the gaps and the opportunities for collaboration and coordinated action.

FINDINGS

Official development funders

In 2019, over \$1.4 billion in official development spending was disbursed to projects with the primary or secondary objective of improving air quality. This is less than 1% of total aid spending.

To put this in context:

- air quality, a public health emergency, receives the equivalent of 1.5% of the official development funding spent combating malnutrition, per healthy year of life lost
- air quality projects received 21% less official development funding in 2019 and 2020 than projects that prolong fossil fuel and contribute to air pollution and greenhouse gas emissions
- the volume and pace of funding does not match the 153% rise in deaths caused by air pollution in low- and middle-income countries over the last 30 years

Countries in Africa and Latin America, where air pollution is escalating, receive 5% and 10% respectively of development funding. Most funding (80%) goes to countries in Asia, much of it in the form of loans, for example for large-scale projects in countries in Mongolia and China.

“AIR POLLUTION IS ONE OF THE MOST URGENT & DEADLY GLOBAL CHALLENGES”

Philanthropic foundations

In 2020, foundation funding with the primary aim of improving outdoor air quality projects increased by 17% to \$44.7 million. As a proportion of philanthropic funding, spending on air quality amounted to less than 0.1% of grant making overall.

Most grant making on air quality (77%) in 2020 came from foundations with climate, environment and energy as one or more of their focus areas. Given the huge human impact of pollution there is an urgent need for health funders, as well as those with a focus on childhood development, equality and sustainable growth to invest in air quality to produce cross-cutting benefits.

Philanthropic funding on air quality is dominated by funding to North America, Europe, India, China and global projects, leaving behind the rest of Asia, Latin America and Africa, which receive just 3.4% of the total funding.

RECOMMENDATIONS

We recommend:

Official development funders and philanthropic foundations

1. Increase funding levels – investing in air quality delivers high returns for health, climate and the economy
2. Make air pollution an explicit priority in development activities, missions, programmes and reporting
3. Increase grant-funding to low-income countries, particularly in Africa, and diversify the set of countries receiving larger amounts of funding
4. Work together, innovate and invest in vital air quality infrastructure, solutions and advocacy

Official development funders

1. Stop all new fossil fuel investments immediately and work with low- and middle-income countries to end spending on fossil fuel facilities
2. Improve reporting of development funding of air quality for greater transparency
3. Support governments to meet World Health Organization ambient air quality standards and Sustainable Development Goal air quality targets by building broad country-level partnerships

Philanthropic foundations

1. Health foundations and other non-CEE (climate, energy and environment) philanthropies should invest more heavily in air quality
2. Share scalable solutions to drive action on clean air globally, breaking down national silos
3. Maximise impact by applying the expertise derived from climate and energy projects to improve air quality data monitoring and reporting

INTRODUCTION

This is the third annual State of Global Air Quality Funding report. It provides an overview of the flow of funding to air quality projects since 2015 and up to and including 2020 from two sources: official development funders and philanthropic foundations. It also examines how funding compares to the scale of the air pollution problem and identifies how best to overcome this disparity.

This report builds on the 2020 publication by:

- including loans from development funders in the analysis for the first time
- showcasing air quality projects through case studies, and
- diving deeper into the numbers to pull out the most significant trends.

The report is focused on ambient (outdoor) air quality.

The analysis and insights can help both existing and prospective funders better identify gaps in the work to combat air pollution. And recommendations set out where and how they can make the greatest difference.



“THE DAMAGE FROM AIR POLLUTION CANNOT BE OFFSET BY GREEN ACTIONS SOMEWHERE ELSE IN THE WORLD, OR AT A LATER DATE. INSTEAD, IT MUST BE PREVENTED. CUTTING ALL PERMITS, SUBSIDIES AND FINANCING FOR FOSSIL FUEL USE IS A CRUCIAL FIRST STEP.”

Tedros Adhanom Ghebreyesus,
Director-General of the World Health Organization
(quoted in the Financial Times)⁴



CONTEXT

The global pandemic brought the impacts of air pollution into sharp focus. For a short period, lockdowns provided respite from air pollution – with skies clearing of smog to reveal blue skylines and offering a glimpse of a world where we all breathe clean air. But poor air quality remains an almost universal reality.

With nine out of ten people breathing polluted air,⁵ air pollution is one of our biggest and most urgent global health threats. Outdoor air pollution causes around 4.2 million early deaths every year.⁶ It leaves millions suffering from acute and chronic diseases, including asthma, strokes, heart attacks and dementia. Air pollution also increases people’s vulnerability to infectious diseases, including COVID-19.⁷

Globally, air pollution disproportionately affects people in low- and middle-income countries. In these countries, the poorest communities, who tend to live in the most polluted areas, are hit the hardest.

The most vulnerable – babies, children and older people – suffer the most from air pollution. Given the interconnected nature of the problem, action on air quality is crucial to achieving the UN’s Sustainable Development Goals (SDGs).⁸

It is especially important for the SDGs relating to health, sustainable cities, environmental sustainability, industrialisation, reducing inequality and mitigating the effects of climate change.

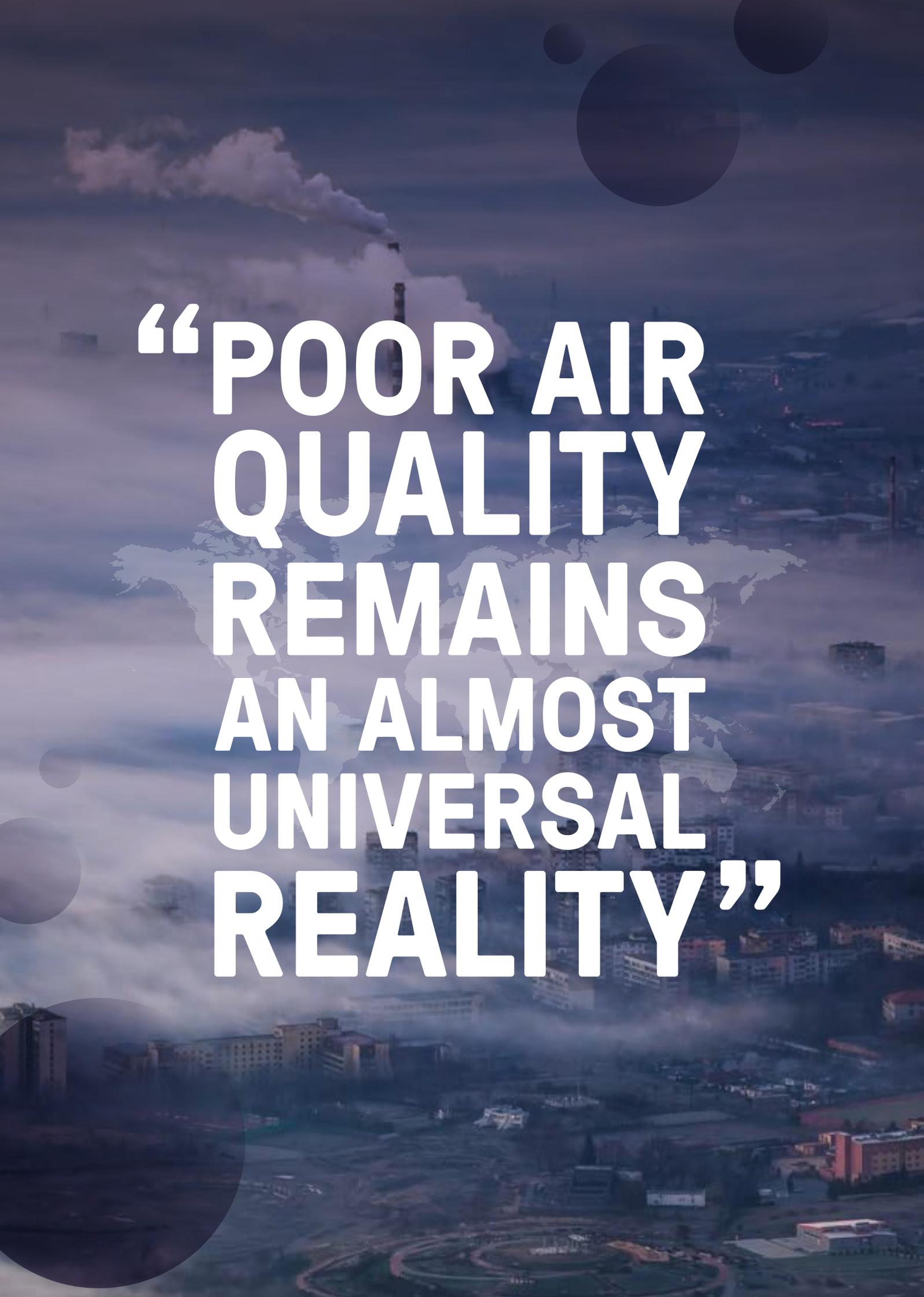
Improving air quality is also key to building stronger economies. A report by the Confederation of British Industry, for example, showed the UK could benefit by £1.6 billion annually if it met the World Health Organization guidelines for air pollution.⁹ This is in addition to the health and social care costs to the National Health Service. In India, research found the cost of air pollution to the Indian economy amounted to an estimated \$95 billion, or 3% of India’s GDP, in 2019.¹⁰ This business cost was measured in reduced productivity, work absences and premature deaths.

Air pollution action is often climate action. The links between them are firmly established.¹¹ Air pollution and climate change are mainly caused by burning fossil fuels, harming human health and the environment. Action to mitigate climate change can reduce air pollution, while cutting air pollution can decrease greenhouse gas (GHG) emissions, which in turn can lead to reductions in global warming. Tackling air pollution and climate change separately can lead to damaging trade-offs. For example, addressing CO2 emissions by encouraging the use of diesel cars or burning biomass, can increase air pollution. Tackling the issues together can deliver mutual benefits.

AIR QUALITY AND THE UN’S SUSTAINABLE DEVELOPMENT GOALS

TACKLING AIR POLLUTION IS CRITICAL TO ACHIEVING A SUSTAINABLE FUTURE FOR ALL



An aerial photograph of a city, likely Beijing, showing a dense urban landscape with a prominent circular stadium in the foreground. A large industrial facility with a tall smokestack is visible in the upper left, emitting a thick plume of white smoke that drifts across the sky. A semi-transparent world map is overlaid on the city, with the smoke plume appearing to originate from the map's location. Several large, dark, semi-transparent circles of varying sizes are scattered across the image, adding a modern, graphic design element.

**“POOR AIR
QUALITY
REMAINS
AN ALMOST
UNIVERSAL
REALITY”**

THE FUNDING LANDSCAPE

National, regional and local governments spend large sums to address air pollution. Their activities range from better planning, improved regulation, and increased monitoring and enforcement, to incentivising businesses and individuals to switch to less-polluting vehicles or heating sources. Overall, this amounts to the largest source of funding for tackling air quality.

However, official development funding and spending by philanthropic foundations play a vital role. Where states do not have the means or the capacity, and where civil society pressure for action is needed, funding from these sources can make all the difference. Our report is focused on this funding.

OFFICIAL DEVELOPMENT FUNDING

Historically, most bilateral and multilateral development agencies have not prioritised tackling air pollution as primary policy or programme objectives. While these agencies recognise the multiple benefits of air quality projects, they are not geared up to work on clean air effectively. Ownership of the issue across teams working on health and climate is unclear, and there is often competition instead of collaboration between climate and air quality actors.

Development finance for projects that combat air pollution comes from a wide variety of funders. The Asian Development Bank and World Bank are the most active, providing the bulk of the spending as loans. National government agencies such as the US Agency for International Development (USAID) or the Germany Development Agency (GIZ), fund projects bilaterally. They also co-finance alongside various multilateral actors, such as the World Bank, the regional development banks, United Nations' agencies, and specialist vertical funds, such as the Global Environment Facility.

Development funding is categorised by the Organisation for Economic Co-operation and Development (OECD) as Official Development Assistance (ODA) or Other Official Flows (OOF). ODA can be on concessional terms (i.e. grants, which have no provision of repayments, and soft loans) and promote and specifically target the economic development and welfare of low- and middle-income countries.¹² OOF does not need to be on concessional terms. Due to their less concessional nature, OOFs are used more frequently in middle-income countries, many of which face considerable air pollution.

FOUNDATION FUNDING

Over the past 20 years, foundation funding has increased significantly. In 2019, total philanthropic giving was an estimated \$730 billion, with an increasing proportion of funding for climate change mitigation.¹³ Despite this, less than 0.1% of total foundation grant making goes directly to tackling air pollution.¹³

Total funding from foundations is relatively small compared to official development funding. Yet foundations have been shown to play a pivotal role in driving change across various fields, and have key advantages in terms of their flexibility, pace of work and governance structures.¹⁴ Philanthropic foundations can grant directly or regrant through intermediary organisations. In addition to providing funding, foundations can bring together all those working on or affected by an issue to catalyse change.

WHAT INVESTMENT IN AIR QUALITY ACHIEVES

Poor air quality is a preventable global problem which sits at the nexus of a host of global challenges. Greater investment, alongside stricter regulation and bolder political leadership to improve air quality, can unlock major societal and environmental gains. It can also deliver cost savings for health and business that pay for the pollution reduction measures many times over.¹⁵

Reducing emissions of air pollutants can:



DELIVER RAPID & SUBSTANTIAL HEALTH BENEFITS

Reducing air pollution can have an almost immediate impact on public health. Within weeks respiratory and irritation symptoms, such as shortness of breath, disappear. Acute illnesses decrease significantly, as do hospitalisations, premature births, and mortality due to air pollution.¹⁶



MITIGATE AGAINST CLIMATE CHANGE

Some air pollutants, such as black carbon, a component of fine particulate matter (PM2.5), and ground level ozone are short-lived climate pollutants (SLCPs). Reducing SLCPs alongside carbon dioxide emission is seen as key to slowing the rate of near-term climate change and limiting warming to 1.5°C.¹⁷



SUPPORT BETTER DEVELOPMENTAL OUTCOMES FOR BABIES & CHILDREN

Babies and children are particularly vulnerable to the health effects of poor air quality.¹⁸ By investing in projects that tackle air pollution, funders can prevent exposure during pregnancy and avert associated childhood illnesses and conditions, ranging from asthma¹⁹ to mental ill-health²⁰ and poor cognitive development.²¹



HELP ADDRESS INEQUALITY

Reducing air pollution is critical to addressing structural inequalities and their disproportionate impact on poor communities and ethnic minorities. The most disadvantaged groups are often the most impacted by air pollution.²² They are more likely to live in polluted neighbourhoods or work outside, where they may be more exposed to air pollution and susceptible to the health effects that result.²³



ENSURE A SUSTAINABLE FUTURE IS ACHIEVED

Cleaning up the air we breathe is integral to addressing global challenges such as poverty and inequality and delivering the Sustainable Development Goals (SDGs). From Accra to Shenzhen,²⁴ progress is already being made in cities across the world, but more concerted efforts are needed to achieve SDGs such as Goal 3: Good health and well-being, Goal 7: Affordable and clean energy, and Goal 11: Sustainable cities and communities.



BUILD STRONGER ECONOMIES

Poor air quality imposes a heavy economic burden. The cost is borne by economies as a whole and more deeply by particular sectors – such as tourism or agriculture. Among other things, better air quality would reduce the negative impact on workforce productivity of lost working days and impaired physical and cognitive performance.¹⁶ This negative impact has a knock-on effect on competitiveness and economic growth. An Indian IT company in Delhi, for example, loses 33% of its competitive advantage over a company in the Philippines due to air pollution.⁷

TERMS EXPLAINED

The analysis in this report covers the investments made since 2015, the geographies and types of projects being funded, as well as trends over time.

Often air quality is not the sole aim of a project – with many having complementary aims, which may include improvements to air quality. For official development funding the analysis distinguishes between two categories of projects with objectives that are positive for air quality: ‘Primary’ and ‘Secondary’. For foundations the analysis focuses on ‘Primary’ funding.

Another category of projects is those that may work against the clean air agenda: ‘fossil-fuel prolonging’ projects. These include projects that result in the construction, or prolong the usage, of fossil-fuel power plants or other potentially polluting facilities such as coal burning brick kilns.^a

Improving air quality requires a broad scope of work across community-, city-, national- and global-scales. It is a technically challenging problem, and sits within complex social, political and economic systems. There are several activity areas funders focus on. For real change to occur multiple types of activity are needed. For this analysis, the activities are split into six main project types.

This report aims to provide a representative view of the state of global funding for air quality. There may be some funders supporting air quality work the Clean Air Fund is not yet aware of. See page 42 for a summary of the methodology.

FUNDING CATEGORIES



Primary: Improvements to air quality are a primary objective and benefit of a project.

Secondary: Improvements to air quality are a component of a project but are a secondary objective or co-benefit to the investment.



Fossil-fuel prolonging: Projects that fund activities that may work against the clean air agenda by prolonging the use of polluting fossil fuels.

PROJECT TYPES

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

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

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

Policy and 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.

^a Note that other important air pollution emissions sectors and sources are not captured under this category (biomass burning, agriculture etc.).

OFFICIAL DEVELOPMENT FUNDING

Official development funders provide the most significant – albeit insubstantial – source of external finance for combatting outdoor air pollution. The analysis uses the latest available data^b to identify the scale, distribution among aid-recipient countries^c and category of funding (covering primary, secondary and fossil-fuel prolonging projects).

SPENDING ON AIR QUALITY PROJECTS IS LESS THAN 1% OF OFFICIAL DEVELOPMENT FUNDING

The data shows a consistent trend of less than 1% of aid spending allocated to tackling air pollution. This level of funding compares unfavourably even to other areas of high need. Between 2015 and 2020, just 0.7% of total development finance reported by official development funders was spent on air pollution related projects. The majority of this funding comes from multilateral development banks; the proportion of development finance provided by national governments to air pollution-related projects is only around 0.2% of total development finance. By comparison, malnutrition and HIV/AIDS, both seriously underfunded areas of considerable need, received significantly more funding than air pollution, which is also a major global health challenge.

OFFICIAL DEVELOPMENT FUNDING ON AIR POLLUTION COMPARED TO OTHER URGENT NEEDS

In 2016, it was estimated that 4.2 million premature deaths in both cities and rural areas worldwide were attributable to ambient (outdoor) air pollution.⁵ To put this scale of deaths into perspective, it is more than the estimated number of annual deaths in 2019 globally attributable to tuberculosis, malaria, and HIV/AIDS combined.

Air pollution is also hugely detrimental to potential life expectancy, and the number of healthy and productive years people live. Data⁶ shows that the effects of air pollution caused an estimated 118 million years lost in premature deaths and healthy, flourishing lives. This is over double the number of healthy years lost to malnutrition (58 million), and HIV/AIDS (56.2 million), respectively.

Both malnutrition and HIV are serious problems that continue to require more funding. Health outcomes have significantly improved for these issues in part because of a considerable growth in funding, as well as a coordinated approach across the funder community with governments and other stakeholders. If we want similar improvements in health linked to air quality, it is clear we need more political will, and with it, considerably more funding. Currently official development funding per healthy life year lost for air pollution is 66 times less than what is spent on malnutrition and 472 times less than what is spent on HIV/AIDS (comparing primary ODA; see Annex 1). This strongly indicates that official development funders are not responding to air pollution as a global health emergency.

Data shows there has been a rising trend in development funding for air quality from 2015–2020, with a marked upturn in 2018–20. Overall, this is positive, but masks the fact this new spending is on big loans to support mega-projects in middle-income countries like China and Mongolia. While welcome, it gives a misleading picture and means the level of grant spending remains very low.

“BETWEEN 2015 & 2020, JUST 0.7% OF TOTAL DEVELOPMENT FINANCE REPORTED BY OFFICIAL DEVELOPMENT FUNDERS WAS SPENT ON AIR POLLUTION RELATED PROJECTS”

^b We accessed this information from public sources so this analysis is dependent on the quality of reporting by development funders. See page 42 for a summary of the methodology.

^c As defined by the OECD DAC, including low- and middle-income countries, excluding members of the G8 and the EU.

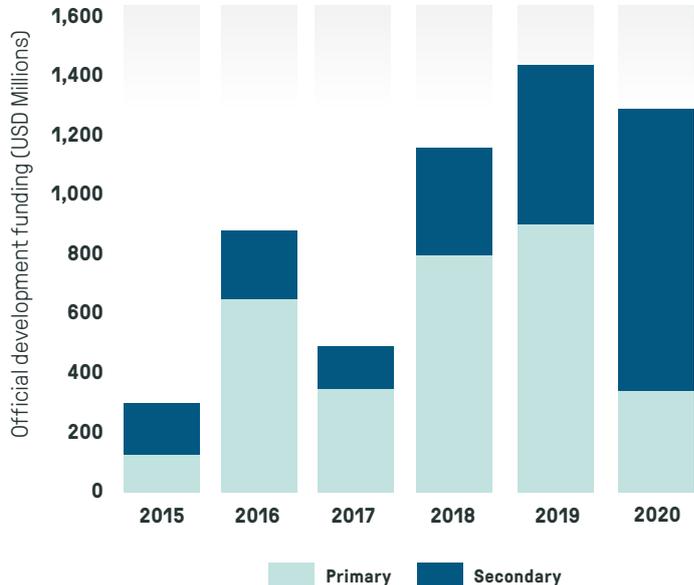
The table below shows the share of funding individual development funders have spent on grants. The biggest development funders have relied overwhelmingly on loans to support air quality projects. It shows improving air quality is a low priority for development agencies and banks.

Table 1. Official development spending on air quality, including spending on primary and secondary projects, and the corresponding percentages of each development funder's total aid budget. The funders are ranked in order of the highest percentage of total aid spent on the combination of primary and secondary projects. The end column shows the percentage of the spending made in grants as opposed to loans.

RANKING	DEVELOPMENT FUNDER	PRIMARY SPENDING (AVG. 2018-19 USD MILLIONS)	PRIMARY SPENDING AS % OF FUNDER'S TOTAL AID BUDGET 2018-19	COMBINED PRIMARY AND SECONDARY SPENDING (AVG. 2018-19 USD MILLIONS)	PRIMARY AND SECONDARY SPENDING AS % OF FUNDERS TOTAL AID BUDGET 2018-19	GRANT % OF PRIMARY AND SECONDARY SPENDING 2018-19 (AS OPPOSED TO LOANS)
1	ASIAN DEVELOPMENT BANK	325.4	2.11%	592.9	3.84%	0.99%
2	WORLD BANK - INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT	264.8	1.45%	272.1	1.49%	0.00%
3	JAPAN	183.8	1.31%	196.2	1.40%	0.09%
4	INTER-AMERICAN DEVELOPMENT BANK (IADB)	0.0	0.00%	55.7	0.61%	1.16%
5	KOREA	30.1	0.42%	30.2	0.42%	0.79%
6	GERMANY	1.6	0.01%	24.0	0.10%	50.48%
7	SWEDEN	2.1	0.06%	20.5	0.53%	100.00%
8	EU INSTITUTIONS	3.7	0.02%	16.4	0.08%	100.00%
9	WORLD BANK - INTERNATIONAL DEVELOPMENT ASSOCIATION	11.1	0.06%	11.1	0.06%	0.00%
10	UNITED STATES	2.8	0.01%	11.0	0.04%	100.00%
11	ARAB FUND (AFESD)	0.0	0.00%	10.4	1.62%	0.00%
12	CLIMATE INVESTMENT FUNDS: MULTILATERAL/REGIONAL DEVELOPMENT BANKS GLOBAL FINANCING INSTRUMENT	0.0	0.00%	8.5	3.35%	37.03%
13	FRANCE	8.4	0.08%	8.4	0.08%	0.51%
14	UNITED KINGDOM	6.1	0.04%	8.0	0.06%	100.00%
15	SWITZERLAND	3.4	0.14%	7.2	0.29%	100.00%
16	AUSTRIA	0.0	0.00%	5.1	0.69%	97.49%
17	GLOBAL ENVIRONMENT FACILITY	1.3	0.84%	4.4	2.78%	100.00%
18	EUROPEAN BANK FOR RECONSTRUCTION & DEVELOPMENT (EBRD)	0.0	0.00%	3.0	0.05%	0.00%
19	NORWAY	0.1	0.01%	2.3	0.06%	100.00%
20	BELGIUM	0.0	0.00%	1.3	0.11%	100.00%

The most recent official figures from the OECD-DAC database show that in 2019 development funding on projects with the primary objective of reducing air pollution was \$899 million^d (Figure 1).

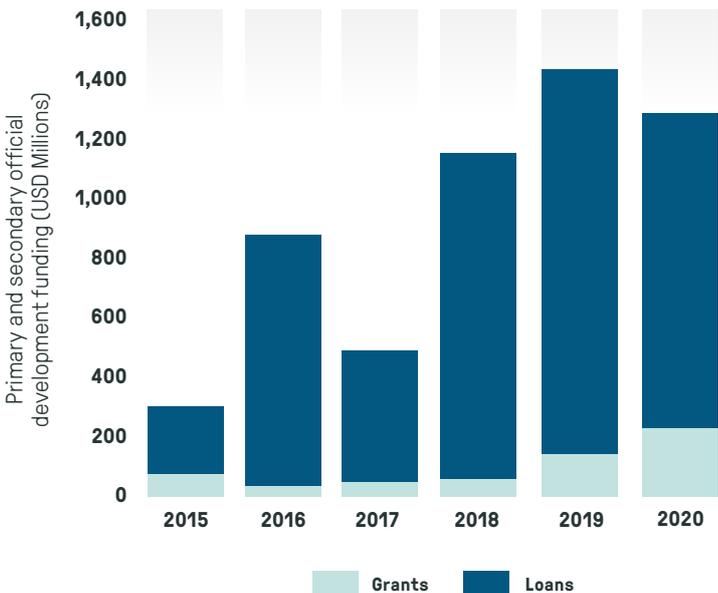
FIGURE 1: ANNUAL PRIMARY & SECONDARY OFFICIAL DEVELOPMENT FUNDING TO AIR QUALITY, 2015–2020.



The figure for 2019 rises to \$1,429 million when we take secondary air quality spending into account. Of this funding, 90% was loans, while only 10% was grants (Figure 2). Funding for secondary projects accounts for a far greater share of spending in 2020, according to IATI data, compared to any previous year.

The 2020 data also shows a fall in overall funding (both primary and secondary) compared to 2019. Looking at the past six years (2015 to 2020), total aid spending on air pollution-related projects was \$5.5 billion (Figure 1). Primary accounted for \$3.1 billion, and secondary \$2.4 billion.

FIGURE 2: ANNUAL GRANT & LOAN OFFICIAL DEVELOPMENT FUNDING TO AIR QUALITY, 2015-2020.



^dCurrency is U.S. dollars (USD) unless otherwise specified.

MONGOLIA: ACHIEVING DRAMATIC IMPROVEMENTS IN AIR QUALITY IN JUST ONE YEAR

In January 2018, levels of outdoor air pollution in Ulaanbaatar, Mongolia, were almost forty times higher than the WHO daily recommended limits, making it one of the most polluted cities in the world. Communities have been severely affected by its damaging effects, particularly low-income families and children. Air quality in Ulaanbaatar has improved significantly, with dangerous air particulate concentrations around 46% lower compared to the start of the program in 2018.

The Asian Development Bank provided Mongolia's National Program for Reducing Air and Environmental Pollution with \$290.75 million (with a \$130 million loan provided for phase 1 covering 2018-19, further loans of \$160 million for 2019-21, and a \$750,000 fund for technical assistance). The program's activities aim to combat both outdoor and indoor air pollution, which include capacity building on air quality monitoring and phasing out raw coal burning practices in households.

PILOTING NEW TECHNOLOGIES

The programme targeted the main sources of air pollution to reduce the exposure to dangerous emissions sources. This includes piloting new technologies and renewable fuel sources to upscale for the future. Improvements will be ongoing as the government strengthens policy and implementation measures using the data from the new air quality monitoring system. The technical assistance fund will support general Air Quality Management in the second phase helping to inform policy to control outdoor air pollution at the city level.

INTEGRATED PUBLIC HEALTH

The programme also involves rolling out an education and outreach scheme, including a public education plan to raise awareness of the dangers and management of air pollution, targeting at least 50% female participation to increase awareness on air pollution. It also includes a pneumonia vaccination program.

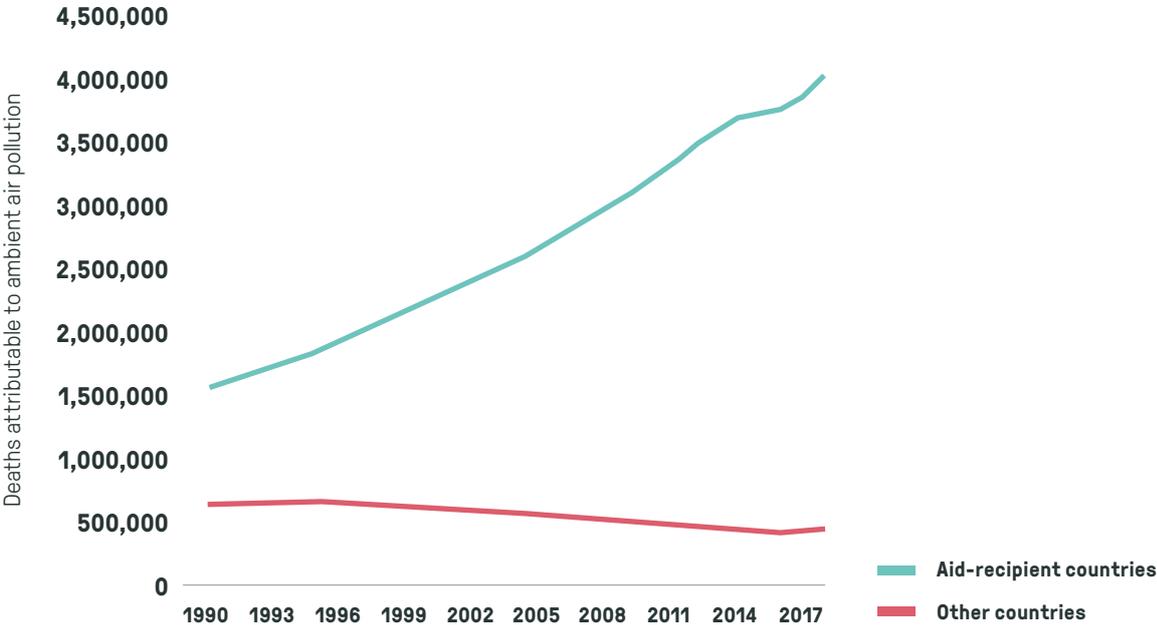
Source: OECD-DAC

SPENDING IS NOT RISING RAPIDLY ENOUGH TO SAVE OR IMPROVE LIVES

Deaths globally continue to rise sharply, particularly in aid-recipient countries. Development funders must urgently turn their attention to spending more in aid-recipient countries because deaths due to exposure to outdoor air pollution in these countries are at an all-time high (Figure 3). Annual deaths from outdoor air pollution in aid-recipient countries now total over four million, accounting for 90% of all deaths attributable to outdoor air pollution. This represents a 153% increase between 1990 and 2019, while other countries saw their death toll fall by 30% on aggregate.^e This trend reflects the application of a consistent methodology over this time period.²⁵

FIGURE 3: ANNUAL DEATHS ATTRIBUTABLE TO AMBIENT AIR POLLUTION IN AID-RECIPIENT AND OTHER COUNTRIES, 1990-2019.

Source: Global Burden Of Disease Study 2019. Institute For Healthmetrics And Evaluation, 2020.



AS GLOBAL DEATHS CONTINUE TO RISE IN AID-RECIPIENT COUNTRIES, THE FUNDING GAP CONTINUES TO WIDEN.

As deaths rise in these countries, the funding gap continues to widen. Together bilateral funders have allocated just 0.2% of their aid spending over the last five years to tackling air pollution.

Where significant investment has been made in tackling air pollution, things have improved. China has seen the rate of age-standardised deaths per 100,000 attributable to fine particulate matter (PM2.5) decline from 89.9 to 81.3 between 2015 and 2020.²⁶

^eThere are some exceptions to the trend of falling deaths due to ambient air pollution in non-aid-recipient countries. Japan, Korea and several of the oil-producing states in the Middle East saw an increase in these deaths over the same period.

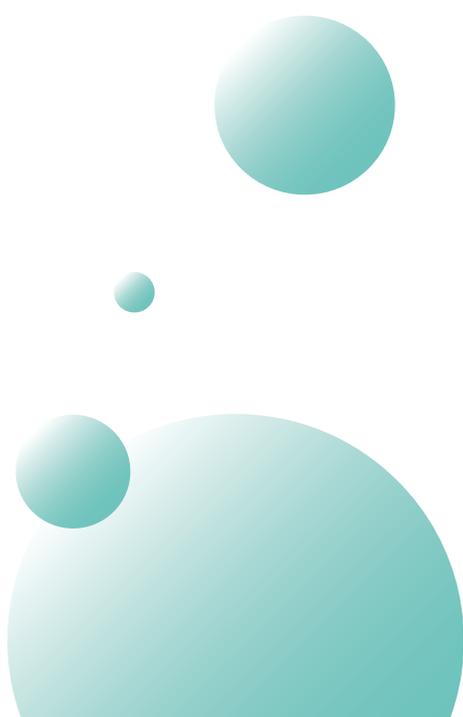
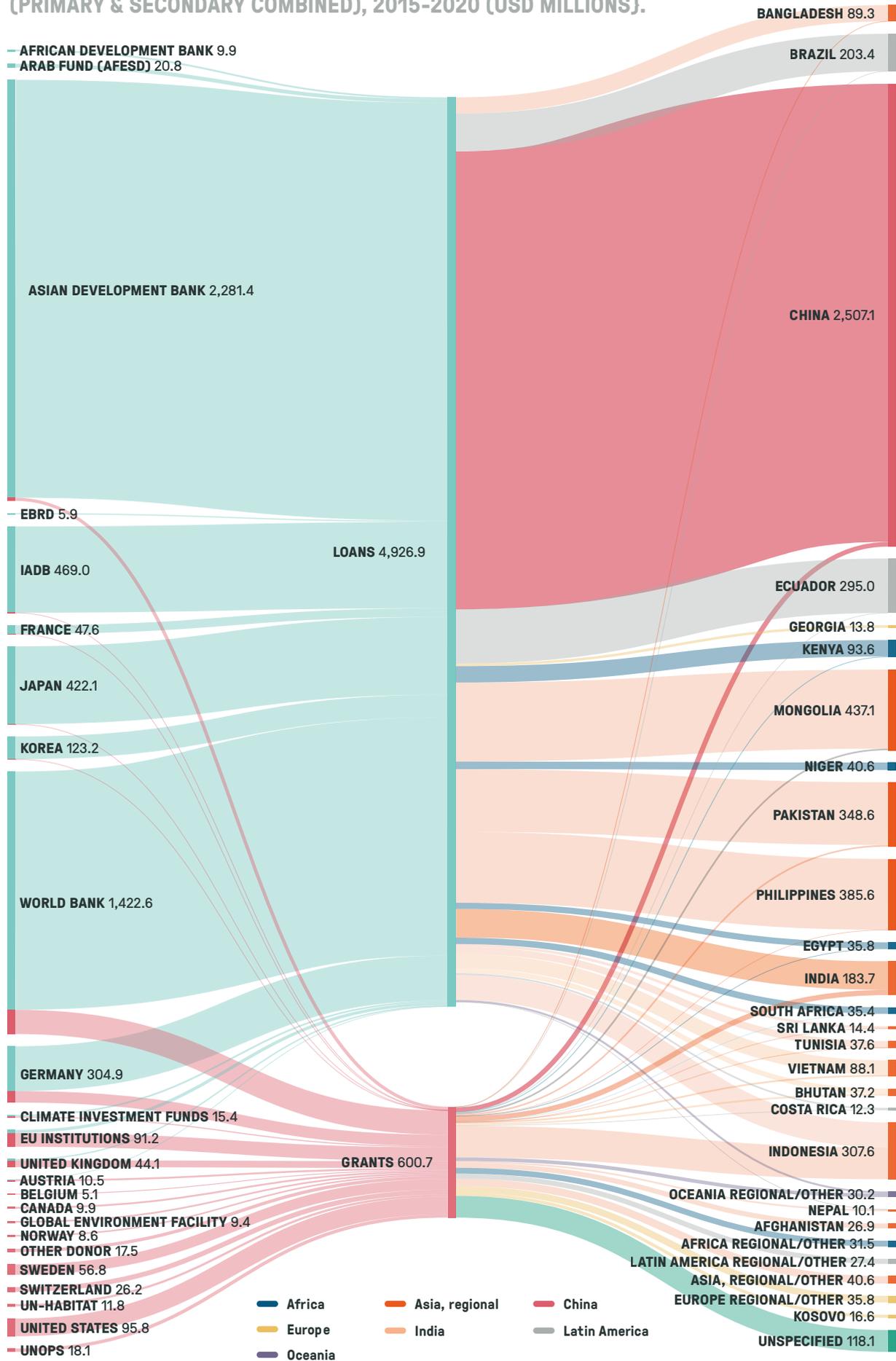


FIGURE 4: THE FLOW OF OFFICIAL DEVELOPMENT FUNDING TO AIR QUALITY (PRIMARY & SECONDARY COMBINED), 2015-2020 (USD MILLIONS).



SPENDING IS CONCENTRATED IN HIGH GROWTH MIDDLE-INCOME COUNTRIES

In total, countries in Asia received over 80% of development funding to fight air pollution between 2015 and 2020. Countries in Latin America received 10%, and just 5% was spent in Africa.

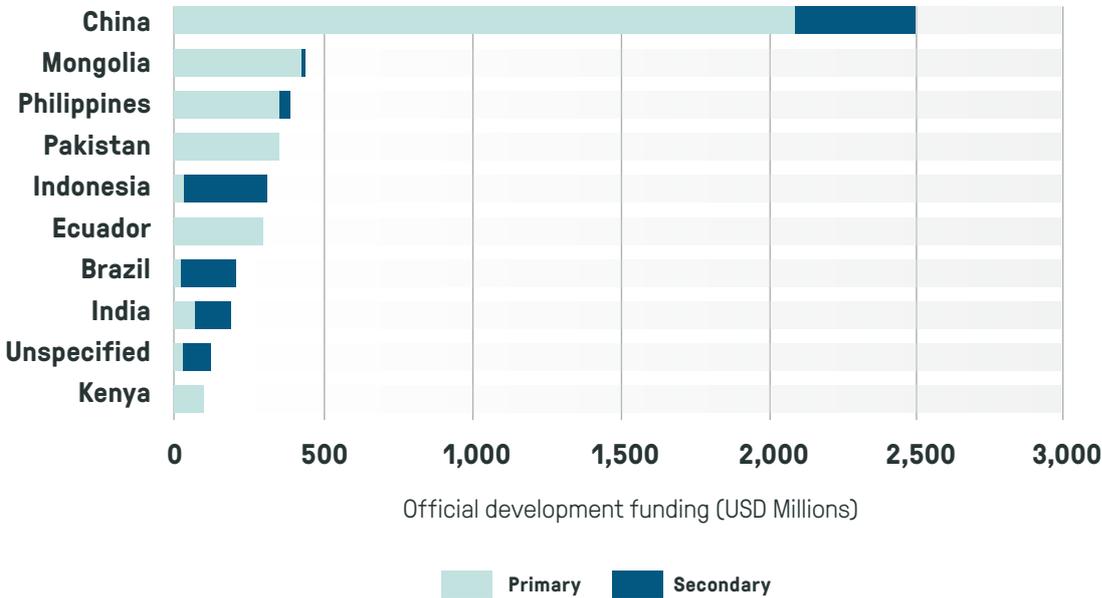
Within these regions, the funding is concentrated in a small number of countries, with the top 10 recipients accounting for 88% of disbursements. China, the largest recipient (Figure 4) accounted for 45% of disbursements over the period 2015–2020. For the top three recipients, China, Mongolia, and the Philippines, most pollution-related funding was in projects where air quality is a primary objective (Figure 5). The substantial amount of funding for large-scale projects in Ulaanbaatar, Mongolia, and the Beijing-Hebei area of China contributes significantly to this ranking. The biggest air quality funder, Asian Development Bank, is situated in a region with many cities suffering from air pollution.

AIR POLLUTION DEVELOPMENT FUNDING IS DOMINATED BY LOANS TO MIDDLE-INCOME COUNTRIES IN ASIA.

The World Bank and regional development banks provide most of their finance in the form of loans. Of the bilateral funders, only four use a substantial amount in loans to improve air quality: Japan, Germany, France, and Korea.

FIGURE 5: TOP RECIPIENTS OF PRIMARY AND SECONDARY OFFICIAL DEVELOPMENT FUNDING, 2015-2020.

In the three largest recipients, funding for primary projects was substantially larger than for secondary projects.



FUNDERS ARE NEGLECTING GROWING CITIES WITH WORSENING DANGEROUS AIR POLLUTION

Development financing to fight air pollution is heavily skewed towards loans because of the income status of the countries where the largest projects are located. Loans account for 62% of development funding to lower-middle-income-countries and 68% of development finance to upper-middle-income-countries. Low-income countries (LICs) receive two-thirds of their development funding in the form of grants.

By and large, the countries that receive the most funding to combat air pollution are justifiably those with the highest levels of pollution related deaths (Figure 6). Countries in Asia accounted for 83% of air pollution-related deaths among the low- and middle-income countries. Many of them have experienced high growth through industrialisation reliant on intensive burning of fossil-fuels.

FIGURE 6: DEATHS ATTRIBUTABLE TO AMBIENT AIR POLLUTION VERSUS OFFICIAL DEVELOPMENT FUNDING.

Source: Global Burden Of Disease Study 2019. Institute For Healthmetrics And Evaluation, 2020.

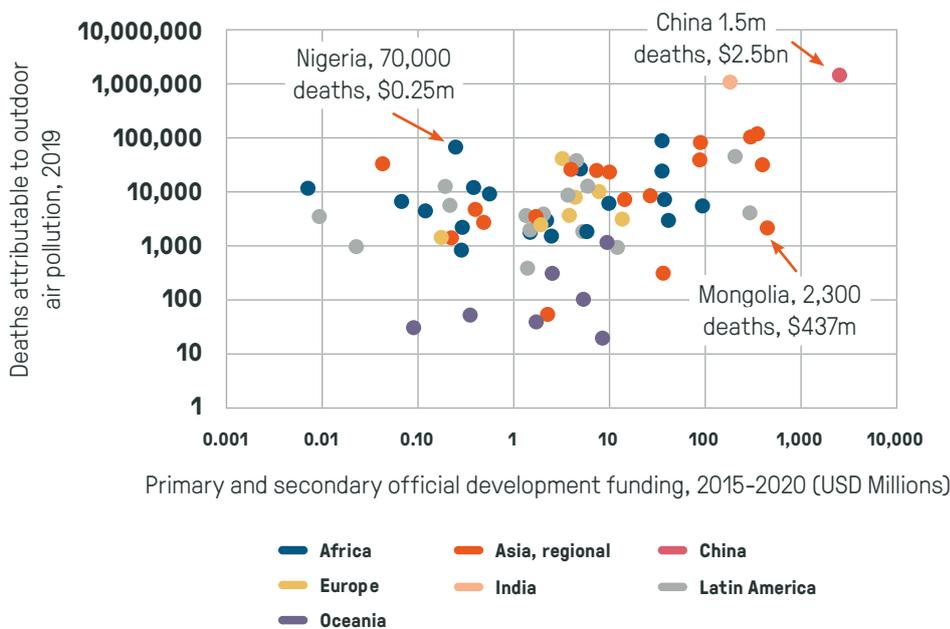


Figure 6 also shows how some aid-recipient countries with high deaths from air pollution are neglected by development funders. Many of them have economic growth strategies that rely on burning fossil fuels. Nigeria is a prominent example where funding is low relative to deaths. Yet experts predict Lagos will become the world’s largest city by 2100, generating a huge upsurge in outdoor air pollution through industrial expansion and soaring transportation levels.²⁷ Air pollution in Africa is currently responsible for 10% of deaths among low- and middle-income countries: deaths have risen by 31% over the last 10 years, the same rate

of increase as Asia. This trend is set to continue, as cities across the continent continue to industrialise using fossil fuels. Development funders should support such countries to transition to low carbon development to mitigate the public health impacts of air pollution.

Deaths from air pollution in the Americas and Europe accounted for 4% and 3% of total deaths respectively. This suggests that investment and regulation to combat air pollution is making a difference.



The background is a teal color with a faint, semi-transparent cityscape. There are several decorative teal circles of various sizes scattered across the page. The text is centered and written in a bold, white, sans-serif font.

**“JUST 5% OF
DEVELOPMENT
FUNDING
BETWEEN
2015 & 2020
WAS SPENT
IN AFRICA”**

SPENDING ON AIR POLLUTION COULD HAVE MORE IMPACT AND BE MORE EFFECTIVE

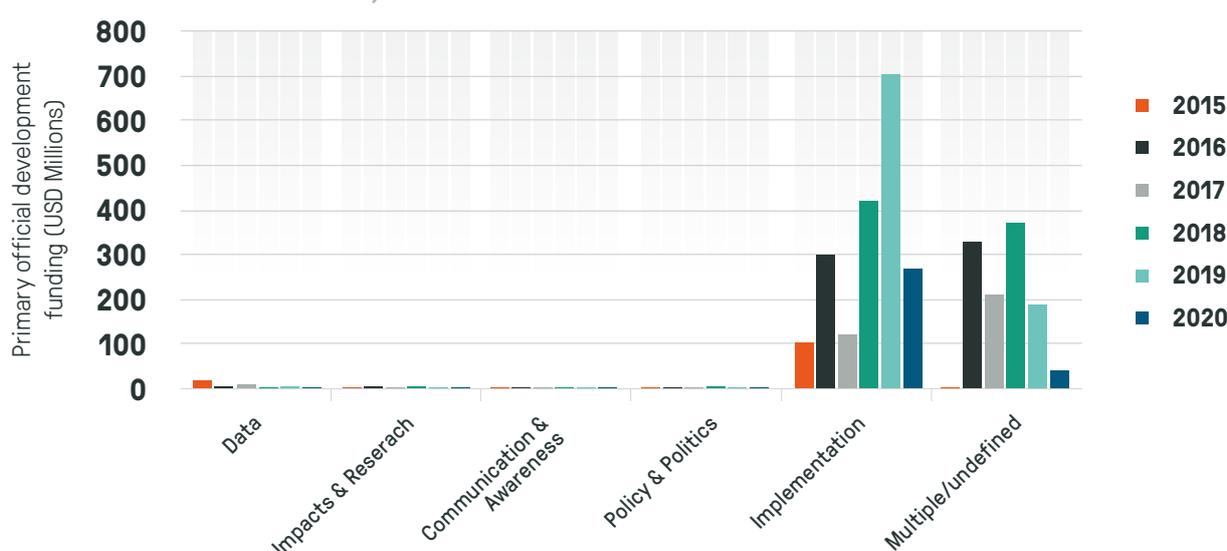
The impact and effectiveness of current spending on air pollution could be greater if development funders more consciously supported the right programmes.

Funders have told us they regard the most useful programmes are those designed to achieve co-benefits across health, climate, air quality, gender and equity, pre-birth, neonatal and childhood development, and economic development. Funders highlight that to overcome the barriers they face on working on air quality (for example poor articulation of the links between addressing air pollution and a range of SDGs, or sector working in silos etc.), strengthened collaboration across different sectors, and between different stakeholder is needed. Spending on improving air quality should, for example, reduce the demand for already overburdened health services and help stretched health budgets respond to other priorities. As the case studies show, consideration to improving public health can be factored into programme objectives, design, and results. They also focus on building state capacity

while encouraging collaboration among the partners and different stakeholders across sectors.

Unfortunately, these examples are not representative of all official spending on tackling air pollution. Its effectiveness can be undermined when official donors do not have an integrated and coordinated approach. For example, spending on ‘implementation’ or infrastructure projects understandably comprises the bulk of activities funded, with 61% of primary official development funding classified in this way (Figure 7). Spending on the infrastructure needed to reduce pollution will have a greater impact if it is supported by data and research that inform policy development and support awareness raising and communication. Yet only 2% of funding is spent on policy and politics projects. Data related projects account for 1% and impact and research, and communications and awareness projects represent less than 1% combined. More targeted spending is needed. For example, significant support for ground monitoring infrastructure and systems is necessary to close the air quality data gap, which is fundamental for driving forwards the air quality field in underserved regions such as Africa. National governments and official development funders should also coordinate with other stakeholders (civil society, philanthropy, private sector) engaged in these complementary project areas.

FIGURE 7: ANNUAL PRIMARY OFFICIAL DEVELOPMENT FUNDING BY PROJECT TYPE, 2015-2020.



Categorising projects is complicated by the multifaceted nature of official development funding and of large-scale projects, like those in China and Mongolia, which may include work under multiple headings, including policy and politics, communications and awareness, among others. As a result we’ve classified 37% of primary development funding as multiple/undefined.

INDIA: STRENGTHENING CAPACITY TO ACHIEVE AIR QUALITY TARGETS

At the World Sustainable Development Summit 2020, Clean Air Project in India (CAP India) was launched in four cities – Lucknow and Kanpur in Uttar Pradesh, Nashik and Pune in Maharashtra state. The Swiss Development Cooperation (SDC) invested CHF 2.7 million, or roughly \$3 million, into the partnership with The Energy and Resources Institute (TERI).

The programme will focus on:

- improving data measurement
- enhancing city and state authorities' capacities for implementing clean air policies and action plans, and
- raising public awareness for clean air action.

AIMING TO REACH AMBIENT AIR QUALITY TARGETS

The partnership chose the four cities after conducting a scoping study assessing factors including: severity and sources of air pollution, population density and associated health impacts, economic standing of the state, and preparedness of the state to respond with policy and regulation. The long-term project aims to support India's flagship National Clean Air Programme (NCAP) by demonstrating viable approaches for cities to address air pollution. NCAP was launched in January 2019 with a goal to meet the government's prescribed annual average ambient air quality standards across the country.

BUILDING CAPACITY TO TACKLE AIR POLLUTION

This is a new and ambitious programme, so its activities are yet to fully take effect. It has a comprehensive and integrated approach that emphasises strengthening state capacity to combat air pollution. This includes building the abilities of state pollution control boards, other government departments, academia, and research institutions by training on source emission monitoring, and conducting source apportionment studies. The aim is also to strengthen state capacity to prepare and implement action plans using the results of the research.

The programme involves awareness-raising activities with different communities in the four cities, particularly those most affected by air pollution, by mobilising the support of media and NGOs. Public education plans include a strong health element using health camps, citizen workshops, and action projects with students.

MONITORING AND MEASURING DEVELOPMENT FUNDING FOR AIR QUALITY

There are currently no codes or markers within any database of aid activities that allows for spending on projects to combat air pollution to be systematically identified.

Currently, the OECD CRS database tracks the sectors or policy objectives of aid spending in two ways:

- **Purpose codes** – indicates the sector that benefits from an activity. There are over 250 purpose codes, divided into over 40 sectors and sub-sectors.
- **Policy markers** – used to show activities which support specific policy initiatives that may cut-across a number of sectors.

The cross-cutting nature of air pollution-related activities means the use of a single policy marker would probably be more appropriate than attempting to implement a large number of new purpose codes. Single markers are used to track spending on priorities such as gender equality or climate change (mitigation or adaptation),

The process of introducing a new marker on air pollution in the OECD data is likely to take some years. But there are other options for tracking air pollution spending. Key development funders could establish a group of actors willing to engage in voluntary reporting on air pollution spending. This has been done in other areas – for example the Scaling Up Nutrition (SUN) partnership used a system of voluntary reporting before the nutrition policy marker was implemented in the Development Assistance Committee database. The World Bank's tracking of its spending on air pollution-related projects could also provide an example of best practice for other development funders to follow.

PERU: CUTTING AMBIENT AIR POLLUTION BY UP TO 90%

Peru has a number of medium-sized cities with between 100,000 and 2 million residents. In these cities local public transport faces various challenges including slow travel flow, poor safety standards and high emissions. For example, in Cusco the number of vehicles in the city has increased by 328% in the last 10 years, while its road infrastructure has remained almost unchanged.

The Sustainable Urban Mobility in Secondary Cities programme is designed to address all the environmental, economic and public health problems generated by these transport systems, including air pollution. Funding from Germany amounted to €5 million, or approximately \$6 million.

DESIGNING MORE SUSTAINABLE URBAN TRANSPORT

The Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH and Peru's Ministry of Transport and Communications are working closely with selected local authorities. Measures include establishing a national urban transport programme called Promovilidad, which supports the medium-sized cities in designing low-emission and more sustainable urban transport systems.

The Promovilidad programme has been extended to 30 cities. Technical and financial support has enabled the cities to implement efficient bus rapid transit systems. These are cutting inner-city journey times and reducing ambient air pollution by over 90% in particulate matter emission along the routes they serve.

PRIORITISING COOPERATION AND COMMUNICATION

The primary objective is to improve the efficiency of public transport systems. But the programme also seeks to gain co-benefits across reducing green-house gas emission, tackling air pollution, and improving public health and impacts on economic activity. All partners have made sure technological cooperation and communication across different stakeholders is a strong feature of the overall programme.

Source: OECD-DAC

SPENDING ON POLLUTING FUEL SOURCES CONTINUES

In 2019 and 2020, development funders spent 21% more on financing projects that prolong fossil-fuel use (\$1.50 billion), than they did on projects with a primary objective of reducing air pollution (\$1.24 billion). This includes the construction or renovation of facilities that burn fossil fuels.

Spending on such projects is equivalent to more than half of total funding on primary and secondary projects combined, which stood at roughly \$2.7 billion over the same time period (Figure 1). The largest recipients of this funding are in Asia and North Africa (Figure 8), with Bangladesh and Indonesia receiving \$346 million and \$301 million respectively.

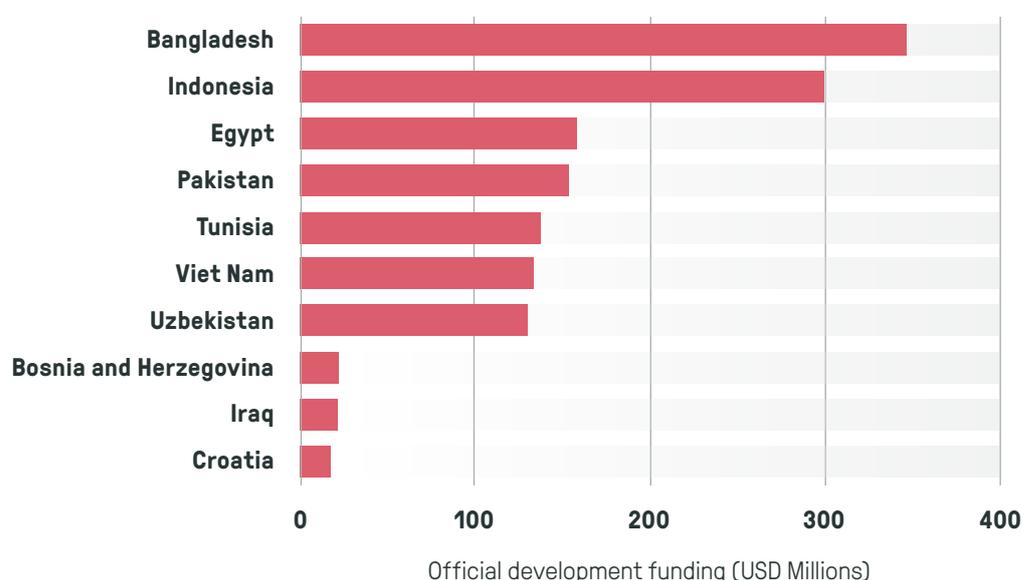
It is important to note that this analysis is limited to development finance that could, from the available data, be identified as funding fossil-fuel facilities. Other sources of financing will mean that far larger sums are being spent by governments on these facilities.

Analysis, at a project level, of all trade and development financing announced by individual institutions, shows that, between 2013 and 2019, G20 nations invested at least \$122.5 billion on fossil fuel projects.²⁸

These projects may result in some reduction in air pollution in the near term, for example, through efficiency improvements to coal-fired power stations. However, such projects potentially prolong the use of non-sustainable and polluting fuel sources in low- and middle-income countries, and so could work against the clean air agenda over the longer term. Investment in renewable energy is a cost-effective and viable alternative that can contribute to economic development and energy security without impacting air quality.

“IN 2019 AND 2020 DEVELOPMENT FUNDERS SPENT 21% MORE FINANCING PROJECTS THAT PROLONG FOSSIL-FUEL USE THAN PROJECTS WITH A PRIMARY OBJECTIVE OF REDUCING AIR POLLUTION.”

FIGURE 8: TOP RECIPIENTS OF FOSSIL-FUEL PROLONGING OFFICIAL DEVELOPMENT FUNDING, 2019-2020.



SOUTH AFRICA: BUILDING A COAL-FIRED ELECTRICITY PLANT COSTS LIVES

Long term, South Africa is aiming to achieve an economic growth rate of 4% a year. The government has estimated this will require electricity generation capacity to increase by 3.3% a year.

The African Development Bank provided a loan of \$2.63 billion (47% of the financing plan) for the construction of the Medupi power plant to help meet these energy needs. The project was initiated in 2009 - the power plant was commissioned in 2015 and due for completion in 2020.

Located in Lemphalale, Limpopo Province, Medupi is the eighth largest coal-fired electricity plant in the world. It uses super-critical boiler technology intended to increase plant efficiency and reduce CO₂ emissions. The government/AfDB considered renewable sources like solar and offshore wind power as alternatives but rejected them. Their reasons included cost and the perceived urgency.

MISJUDGING THE IMPACT ON AIR QUALITY

The early project appraisal report²⁹ acknowledged that PM₁₀ concentrations would exceed the national standard because of the ash dump associated with the plant. But it predicted that the proposed plant concentrations of nitrous oxide and nitrogen dioxide would fall below local and international air quality limits.

Air scrubbers to ameliorate emissions were not installed before the plant became operational. A 2015 monitoring report³⁰ found that these would not be installed until at least 2027. It went on to state, 'broad concerns remain about the quality and comprehensiveness of the air monitoring systems' and 'the monitoring team found little attention given to building stronger understanding of the connection between air monitoring and the health status of potentially affected populations'.

An independent study in 2017³¹ estimated that health impacts of emissions from the Medupi power plant were causing 364 deaths per year.

Source: OECD-DAC/AfDB

HOW COVID-19 HAS CHANGED FUNDERS

Official development funders and philanthropic foundations have responded to the challenge of the COVID-19 pandemic, adapting their processes and aligning their funding.

“The significant drops in traffic, especially early in the pandemic, resulted in stark improvements in urban air quality. Protecting our health, particularly respiratory health, has never been more important and air quality has a significant role to play in global wellbeing”

FIA Foundation

“The pandemic has reversed the fall in global poverty for the first time in a generation.³² Poor people are more likely to live in a polluted environment, and suffer the adverse impacts of air pollution. Furthermore, poor people who have the least means to address the health damage of air pollution often disproportionately carry the economic burden. This makes reducing air pollution in developing countries central to achieving poverty reduction and equitable prosperity objectives.³³”

World Bank

“The impact of the pandemic on both health and economies across the globe reinforced the importance of air quality funding. The impact of air pollution on human health, especially respiratory diseases which are increasingly relevant in the pandemic, demonstrates the importance of funding and deepening measures to improve air quality. As a result of this context, we expanded the funding of initiatives that combat air pollution through public campaigns and strategic advocacy.”

Instituto Clima e Sociedade, Brazil

With some communities more exposed to air pollution, and the link between air pollution and COVID-19 growing,³⁴ funders have focused in on air quality work as central to pandemic recovery.

“Early in the pandemic we convened a discussion of the leading mobility players to consider what role we could all play in supporting communities likely to be most affected, and how our own objectives for cleaner mobility might be impacted by COVID. We published a report³⁵ of those discussions and established a COVID-response research fund to support work on these issues.”

FIA Foundation

“It is clear that we now have a critical window of opportunity to address air pollution as part of COVID-19 recovery efforts. As most air pollutants and GHG emissions result from common sources such as transportation, industries, and the energy sector, combatting air pollution will aid in delivering on multiple climate and development goals as well.”

India Climate Collaborative

Throughout emergency responses and lockdowns, the pandemic has demonstrated the vital role of civil society. Funders we spoke with have evolved their approach in the last year, by becoming more responsive and flexible or by devolving more decision-making to grantees, for example.

“The stellar role that civil society has played in pandemic response and relief activities has emphasized the importance of local institutions, flexible funding, decentralised decision-making, and disseminating the capacity to solve, rather than the solution itself. Organisations that had access to flexible funding were not only able to act quickly and adapt to rapid requirements locally, but survived funding crunches that followed, as grant money was redeployed to research and relief efforts.”

India Climate Collaborative

PHILANTHROPIC FOUNDATION FUNDING

Philanthropic foundations – non-profit or charitable organisations that provide funding and support for charitable causes – have played a pivotal role in driving change in several fields.^f As the analysis shows, grants from foundation provide critical support to the air quality field.

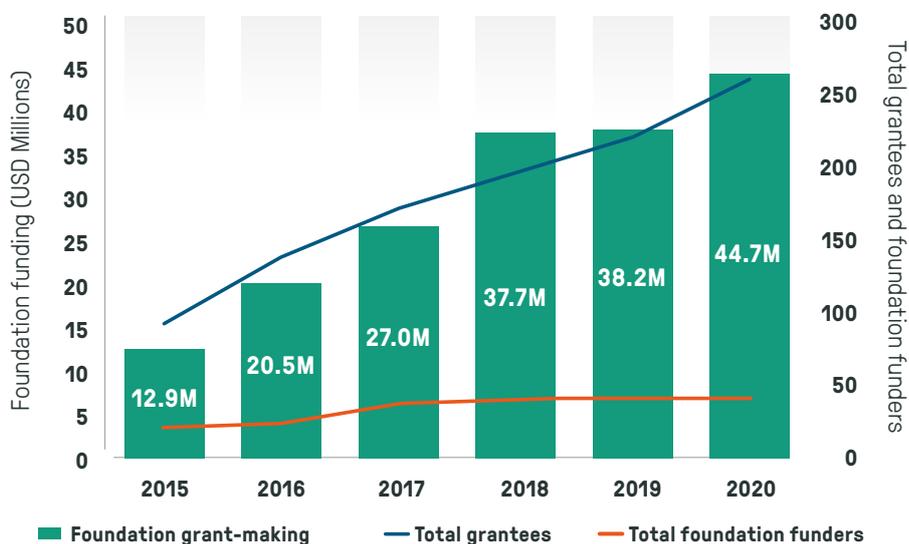
The analysis of philanthropic foundation spending includes only projects where air pollution is a primary objective and benefit because it was not feasible to comprehensively capture grant making that satisfies the “secondary” definition.^{gh}



SPENDING DOES NOT REFLECT THE EXTENT OF THE PROBLEM

In 2020, total primary foundation funding rose by 17% to \$44.7 million (Figure 9). Grant making on air quality makes up less than 0.1% of total foundation grant making.¹³ For comparison, philanthropic giving on education is at least \$700m a year. And, despite the adverse impacts of air pollution on children’s health and more specifically brain development,³⁶ foundation funding on air quality is 15 times smaller.³⁷ And at the current rate of growth, it will not surpass \$100 million a year for another eight years.

FIGURE 9: ANNUAL FOUNDATION FUNDING TO AIR QUALITY, NUMBER OF GRANTEES & FOUNDATION FUNDERS, 2015-2020.



“GRANT MAKING ON AIR QUALITY MAKES UP LESS THAN 0.1% OF TOTAL FOUNDATION GRANT MAKING”

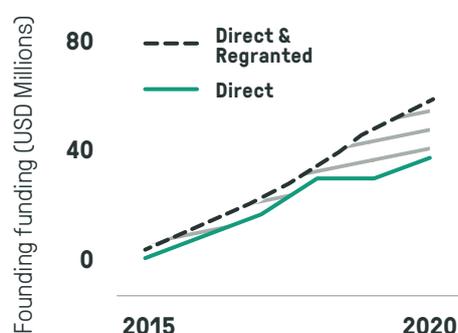
^fPhilanthropic foundations can be funded by an individual, family, business or through public donations and have a wide range of legal structures and charitable purposes. The term foundations here is used to distinguish entities with a designated legal and institutional structure organized around charitable giving; as distinct from individuals who may give to causes directly outside of an institutional structure, or corporations engaged in corporate giving outside of a charitable foundation structure – for example, gifts through the Coca Cola Foundation would be included where they had an air quality focus, but direct giving and employee donation matching by the Coca Cola Company would not be included.

^gSecondary air quality projects include improvements to air quality as a component but is a secondary objective or co-benefit to the investment.

^hFunding information for this section was made possible by the generous data sharing of leading foundations in the air quality field. See page 42 for a summary of the methodology.

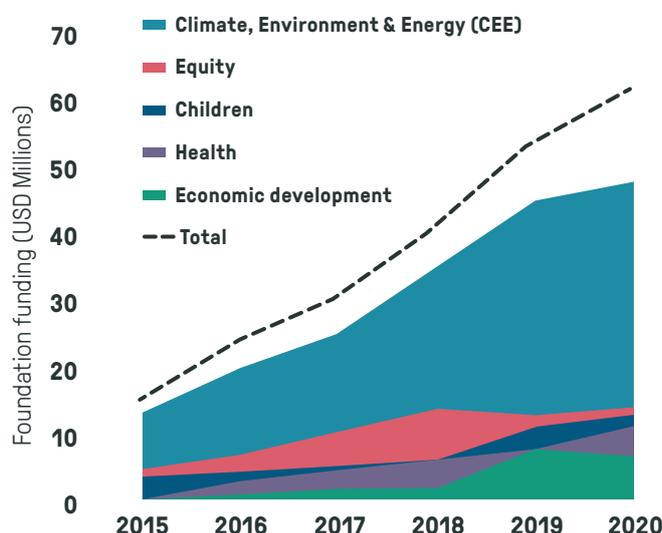
Between 2018 and 2020, the number of foundations making grants on air quality has remained consistent at 40–45 (Figure 10). However, the number of grantees has reached a new high of 264. This demonstrates the role of foundations in building the field of actors combatting air quality, but also suggests there is significant room for further field building. Between 2015 and 2020 the total level of funding increased by 246%, while the average funding per grantee has risen by only 26% over the same period.

FIGURE 10. A) COMPARISON BETWEEN ANNUAL DIRECT AND REGRANTED FOUNDATION FUNDING, 2015-2020.



Note that foundations can have more than one focus area and therefore the focus area values are not cumulative.

B) ANNUAL DIRECT AND REGRANTED FOUNDATION FUNDING (TOTAL AND BY FOCUS AREAS), 2015-2020.



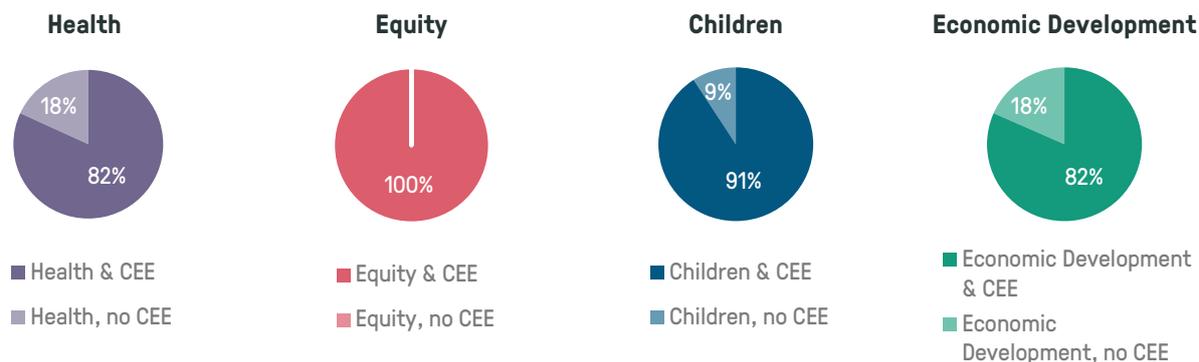
MORE FOUNDATIONS NEED TO BECOME ACTIVELY ENGAGED ON AIR QUALITY TO ALIGN THE LEVEL OF FUNDING TO THE SCALE OF THE PROBLEM.

AIR POLLUTION SPENDING IS LARGELY DRAWN FROM CLIMATE, ENERGY AND ENVIRONMENT FOUNDATIONS

There are various motivations for foundations to work on air quality, coming from several of the largest focus areas in global philanthropy: health, equity, children, economic development, and climate, energy and environment (CEE). 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.

In 2020, 77% of funding on air quality came from foundations with CEE as one or more of their focus areas (Figure 10). Foundations with focus areas of equity, health, children and economic development contribute to 23%, 20%, 17% and 10% of funding respectively. Across the latter focus areas, over 80% of that funding was from foundations also making grants on CEE. All funders with a focus on equity working on air quality are also working on CEE (Figure 11).

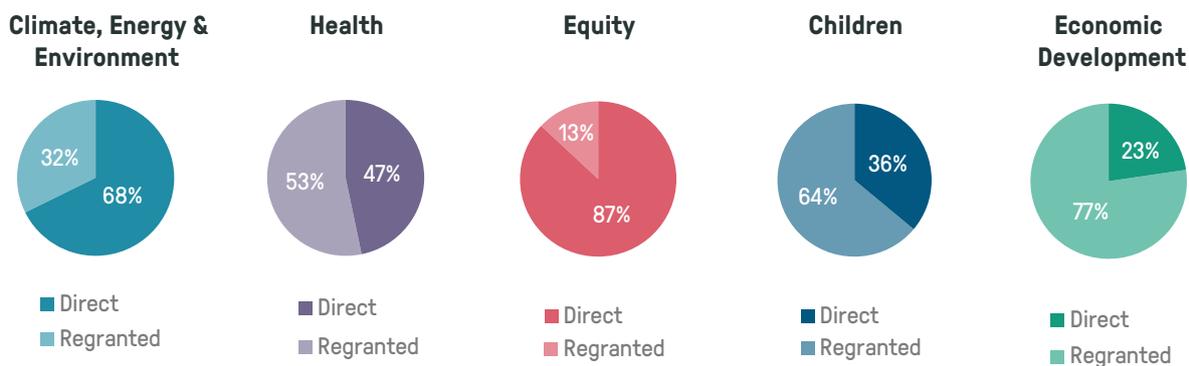
FIGURE 11: PERCENTAGE OF FOCUS AREA FUNDING WHERE FOUNDATIONS DO & DO NOT ALSO WORK ON CEE, 2020.



In 2019 and 2020, regranted primary air quality funding became more prevalent (Figure 10), increasing from 9.3% of total foundation funding in 2018 to 28% in 2020. The majority of funding from foundations with a focus on CEE and equity flows directly to air quality implementors (68% and

87% respectively). Whereas funding on air quality from foundations working on health, children and economic development is more likely to be regranted (Figure 12).

FIGURE 12: PERCENTAGE OF FOCUS AREA FUNDING THAT IS DIRECT & REGRANTED, 2020.



DUE TO THE COMPLEXITY OF AIR POLLUTION AS AN ISSUE, EFFECTIVE ACTION REQUIRES A BROAD RANGE OF FUNDERS TO APPLY THEIR EXPERTISE

Total foundation funding to projects where air pollution is seen as a primary objective and benefit was just 2.4% of the total foundation funding on climate change mitigation in 2019.¹³ Considering the synergies between air pollution and climate change, CEE funders could realise more of and extend the impacts of their work by giving air quality higher priority.

While there are important co-benefits to tackling air pollution and climate change together, they present very different challenges. Not only do air pollutants and greenhouse gases require

different datasets and monitoring technologies to understand them, they impact on human health and national economies in different ways.

As a result, political and public opinion surrounding air pollution and climate change differ as do the stories that need to be told. As well as more funding, foundations that are specialists in equity, children, health and economic development could bring different – and useful – perspectives on this geographically variable social, economic and environmental problem.

SPOTLIGHT ON HEALTH

Air pollution is a global health emergency, yet the foundation funding it receives in comparison to other urgent global health issues is limited. For example, foundation funding per healthy life year lost for air pollution is 34 times less than what is funded towards HIV/AIDS (see Annex 1). Foundations, and particularly health foundations, are not responding to the magnitude of the problem.

Foundations with a health focus made \$11 million of direct and regranted funding to air quality in 2020. Health funders are predominantly involved in air quality projects in one of two ways:

1. **Through collaborations with partner foundations and regranted institutions** – 53% of health funding to air quality was regranted.
2. **When foundations have in-house CEE programs** – just 18% of health funding to the issue came from foundations with a focus on health but not CEE.

Of the \$2 million of funding from health funders with no CEE focus area in 2020, 60% (\$1.2 million) was directly granted. Over the last three years this funding has grown exponentially but the total value remains minute in the context of foundation health funding and this growth is driven by just two foundations (Figure 13). In 2020, roughly half of this direct funding was on air quality impacts and research – which is an integral point of contact for health funders on this issue (Figure 14). Such research provides key insights that are at the core of communications and awareness of the problem and policy and political engagement.

Air quality projects do not necessarily require CEE capacity. Continued exponential growth in direct funding from a growing group of health foundations has the potential to significantly alter the air quality funding landscape.

FIGURE 13: ANNUAL DIRECT FUNDING FROM FOUNDATIONS WITH A FOCUS AREA ON HEALTH BUT NOT CEE, 2015-2020.

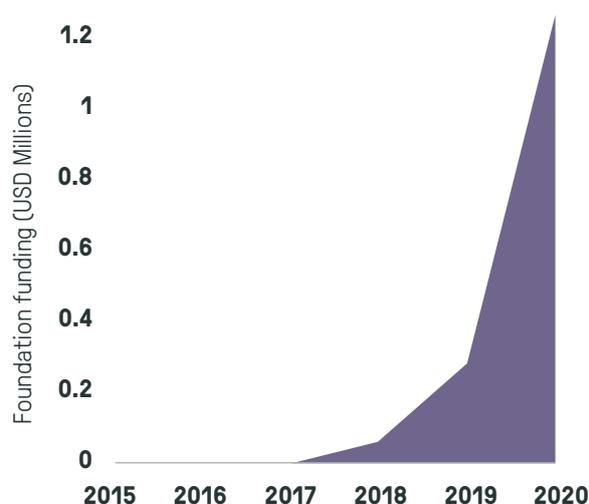
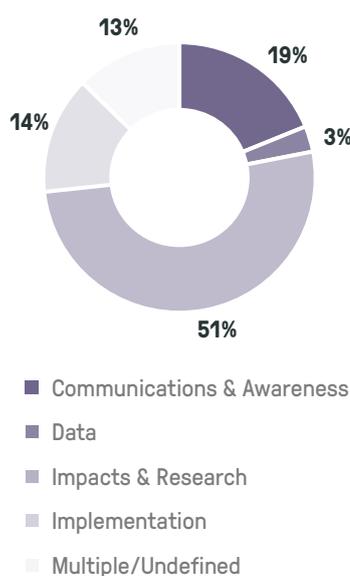


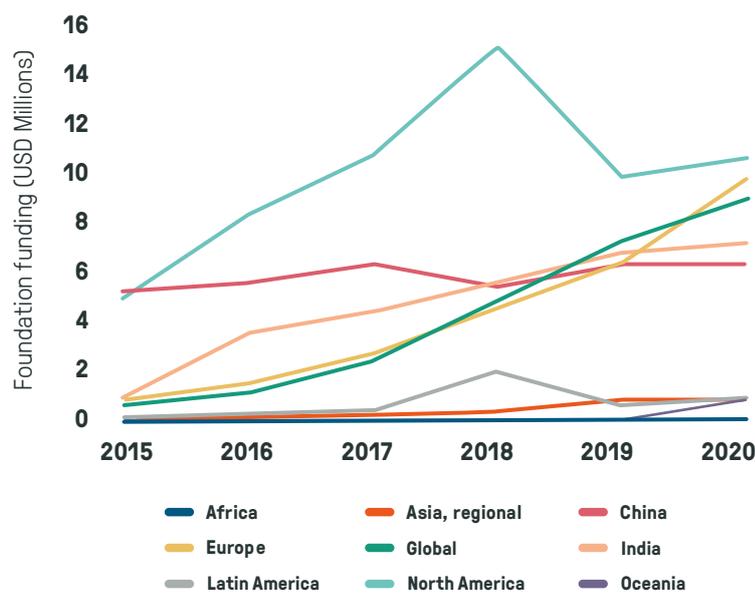
FIGURE 14: PROJECT TYPES DIRECTLY FUNDED BY FOUNDATIONS WITH A FOCUS AREA ON HEALTH BUT NOT CEE, 2020.



AFRICA, LATIN AMERICA AND ASIA (EXCLUDING CHINA AND INDIA) RECEIVE LESS THAN 4% OF TOTAL FUNDING

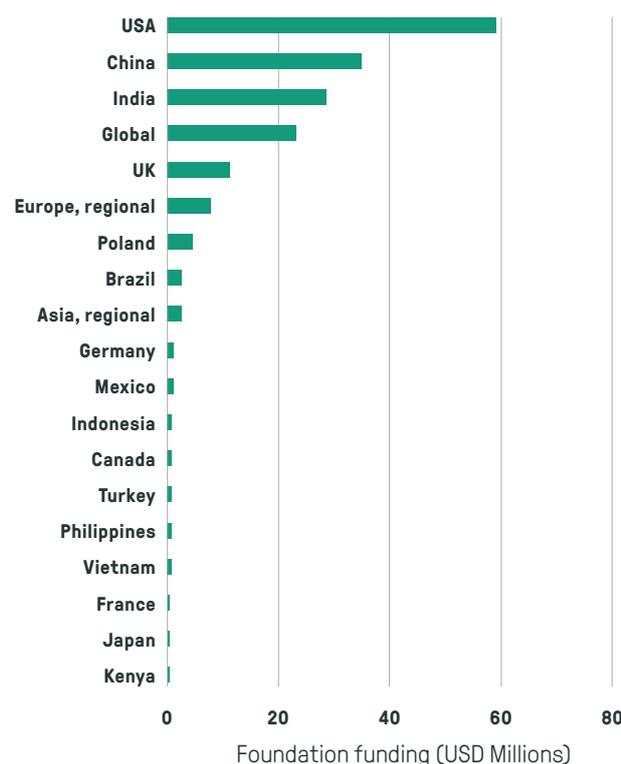
Philanthropic funding on air quality is dominated by funding to North America, Europe, India, China and global projects (Figure 15). Air quality funding to Africa, Latin America and Asia (excluding India and China) lags severely behind. These three regions have a combined population of 3.8 billion people. Annual mortality due to air pollution is 1.37 million but they received a combined total of just 3.4% of total foundation funding on air quality over the past six years.

FIGURE 15: ANNUAL FOUNDATION FUNDING BY REGION, 2015-2020.



Concentrations of funding are evident. Besides India and China, the United Kingdom, Poland and Brazil are the only countries with direct outdoor air quality funding exceeding \$2 million over the 2015-2020 period (Figure 16 not including the contributions from regional and global projects that are spread across two or more countries). Concentrations of funding are beneficial where there is a clear route to sharing and scaling best practice to neighbouring countries.

FIGURE 16: TOP RECIPIENTS OF FOUNDATION FUNDING, 2015-2020.



The set of countries with significant funding is not broadly representative of air quality context and capacity levels globally. According to the OECD international foundation funding favours middle-income countries and countries with stronger enabling environments³⁸ – this is reflected in philanthropic funding for air quality.

African countries are among those where the level of funding is negligible in comparison to the dominant countries. As we have described, rapid urbanisation in African cities means levels of air pollution are increasing. That means there is an opportunity for early intervention. Foundations have the potential to catalyse real impact by driving awareness and taking initial action. Not only does this open the door for official development funding, it helps to build the air quality movement.

KENYA: IMPROVING LUNG HEALTH RESEARCH USING A PARTICIPATORY APPROACH

The ‘Clean air, good health Nairobi’ project, led by Glasgow and Portsmouth Universities and funded by the Wellcome Trust, works in two communities in Nairobi – Mukuru, a large informal settlement, and Buruburu, a more affluent neighbouring area. Champions (local artists, residents) who were identified by project leads within each community, co-develop and deliver creative activities (music, theatre, games, visual art) to children and their parents. These activities raise awareness of the impacts of air pollution and lung health. The activities also encourage children and their parents to feel confident about participating in the Tupumue study, funded by the Medical Research Council, which compares air pollution and lung health in 5-18 year-old children in the two communities.

TAILORING ACTIVITIES TO THE AUDIENCE

The participatory approach has supported the champions to take ownership of the project and to become recognised as knowledgeable about air pollution and lung health within their own communities. This has allowed access to local knowledge and social capital, which has been essential to the success of the project. The activities do not require high levels of literacy and do not discriminate according to age or level of education. For example, the champions describe the Tupumue data collection process using puppetry so that children are knowledgeable and confident about participating. By March 2020, 900 parents had consented for their children to be recruited and completed questionnaires.

Champions have been trained by the UK research team to design and deliver creative air pollution and lung health awareness-raising campaigns, as well as monitor, evaluate and report these activities. This training also provides transferable skills – in performance, IT, and project management for example – that support their professional development.

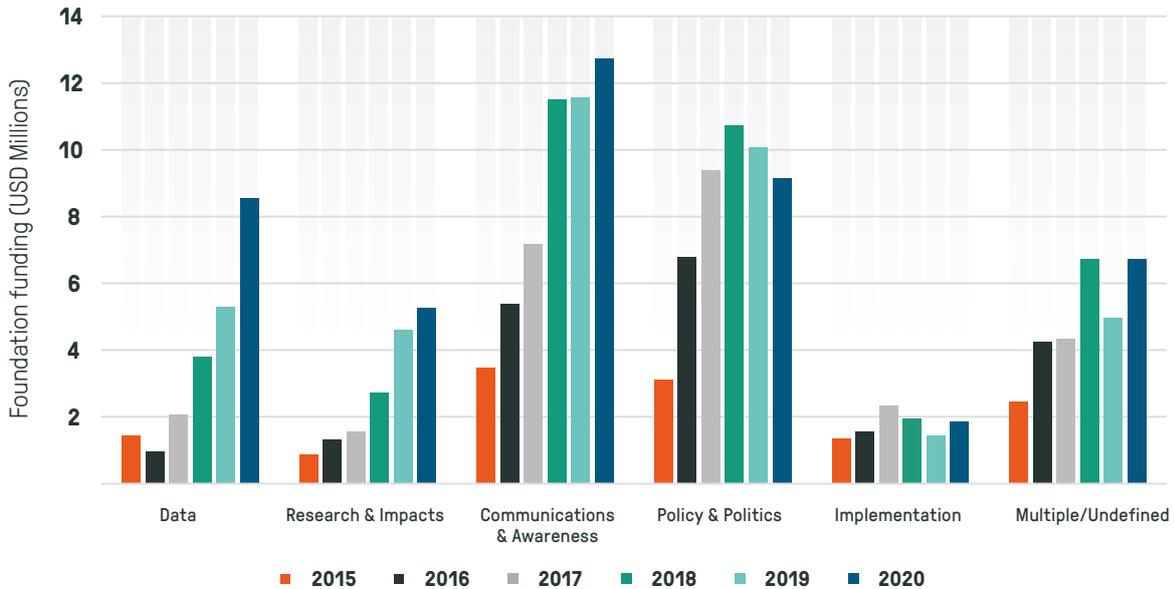
DESIGNING REMOTE DELIVERY

Building local project management capacity has been key to the project’s successful delivery. The COVID-19 pandemic has forced the UK team to oversee the project remotely. One Kenyan project manager, supported by two local community managers, is the main point of contact with the UK team and Kenyan Tupumue researchers. Champions have received airtime allowances to support their involvement and communications via WhatsApp and Zoom. COVID-19 has also prompted champions to design remote delivery awareness-raising activities like music and drama videos for social media. These could inform future regional and national air pollution and lung health awareness-raising campaigns.

COMMUNICATIONS AND AWARENESS AND POLICY AND POLITICS PROJECTS RECEIVE THE MOST FOUNDATION FUNDING

In 2020, grant making we have categorised as communications and awareness remained the most significant, with funding of \$12.7 million (Figure 17), followed by policy and politics (\$9.2 million).

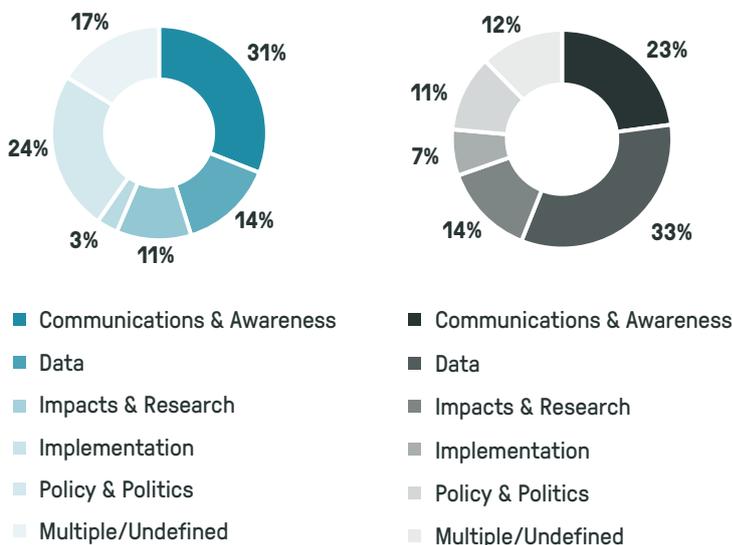
FIGURE 17: ANNUAL FOUNDATION FUNDING BY PROJECT TYPE, 2015-2020.



Policy and politics has seen a \$1.5 million decline since 2018 – a downturn largely attributable to decreased funding on this type of project in the USA, which peaked in 2017.

Funders with CEE focus use a greater proportion of their funding to support policy and politics (24%) and communications and awareness (31%) than those without (11% and 23% respectively) (Figure 18). Despite similarities in data needs for air pollution and CEE, foundations with CEE focus use a smaller proportion of their funding to support data compared to non-CEE foundations (14% and 33% respectively). CEE foundations have significant relevant expertise in data and the air quality field would benefit considerably from greater access to that.

FIGURE 18: PROJECT TYPES DIRECTLY FUNDED BY FOUNDATIONS WITH (BLUE) & WITHOUT (GREY) A FOCUS AREA OF CEE, 2020.



Effective action on air pollution requires work under all pillars. Philanthropic funding plays a vital role in supporting communications and awareness of air quality issues and influencing policy and politics.

It can also drive innovation in locally-relevant air quality data and air quality impact studies – complementing the focus of official development funding on implementation.

USA: SECURING POLICY CHANGE THROUGH A DIVERSE GRASSROOTS CAMPAIGN

In the United States, more than 50 million people live in areas with poor air quality – and communities who live closest to ports and industrial services are disproportionately impacted. Yet early versions of the Advanced Clean Trucks (ACT) Rule, published by California’s Air Resources Board (CARB) in 2019, were insufficient to meet the state’s climate and clean air goals. Together, ClimateWorks Foundation, the Energy Foundation and the Hewlett Foundation funded a diverse coalition to campaign for a stronger ACT Rule to reduce harmful truck pollution and generate a model for replicating this impactful strategy.

GIVING A HUMAN FACE TO THE CAMPAIGN

A well-coordinated, diverse and invested coalition of over 25 groups used personal stories of living in ‘diesel death zones’ to communicate the issue of air pollution with impact. It was these personal testimonies, paired with clear research and data, strategic communications, private sector support, and the promotion of economic opportunities for electric trucks that brought success. The coalition, supported by philanthropy, convinced CARB members a stronger rule was both possible and necessary. The diversity of the coalition was central to ensuring a stronger rule that benefited everyone, including disadvantaged communities.

In spring 2020, CARB issued a significantly more ambitious proposal which gained the board’s unanimous approval in June that year. The revised target will result in nearly 300,000 electric trucks by 2035 and 17.3 million metric tons fewer of GHG emissions between 2020 and 2040. Thanks to the coalition, the ACT now prioritises reducing emissions in disadvantaged communities.

California’s governor has reaffirmed the policy and further increased ambition by signing an executive order requiring all trucks to be pollution-free by 2045.

ESTABLISHING A POLICY MODEL

The project’s success is testament to the value of early engagement with communities, including those overburdened with pollution, for example by highlighting the health disparities faced and prioritising deployment of clean electric trucks in those communities. Crucially, the ACT now serves as a model policy for other states and countries to adopt. With support from philanthropically resourced organizations, California has since signed memorandums of understanding with 14 other U.S. states and Washington D.C., and is working with other countries toward a 100% zero-emission truck future, with massive benefits for human health and the climate.

INDIA: PUTTING AN END TO AIR POLLUTION CAUSED BY BURNING AGRICULTURAL WASTE

The widespread burning of agricultural waste in India's northern states is a significant source of air pollution, particularly in the winter months. Farmers in Punjab, Haryana and Western Uttar Pradesh burn around 23 million tons of rice residue each year. This emits vast levels of air pollution which put the livelihoods of millions of farmers at risk, and has serious health implications for hundreds of millions more people. Burning crop residue also contributes to climate change and damages soil health and long-term agricultural productivity.

Since 2018, Tata Trusts has been enhancing the Indian government's efforts to help farmers adopt a better way to manage crop residue – through 'Happy Seeder' technology. Farmers can use a Happy Seeder and sow seeds through straw and standing stubble, meaning there's no need to burn rice residue for wheat to be grown in the winter months. A 'Super Straw Management System' allows fine chopping of the rice residue, and the Happy Seeder technology then sows the wheat in the standing stubbles. The rice residue in the field acts as a mulch and helps prevent weed growth.

SPREADING THE WORD

Tata Trusts' Reviving Green Revolution Cell and The Nature Conservancy India promoted Happy Seeders in 624 villages in Northern India. Between them, they delivered thousands of field demonstrations for farmers using hundreds of machines. And they equipped thousands of farmers to use the technology through training schemes, field days and seminars. Central government provided financial support to farmers to purchase machines – a major contribution to allow change.

Adopting this technology benefits farmers economically. A recent survey found that Happy Seeder farmers spent 32% less on the weedicides and 6% less on fertilisers. Happy Seeder sown wheat fields also saw a net yield gain of 300-400 kg per hectare. Net profit ranged from 10,000 to 12,000 Rupees per hectare compared to wheat crop sown using traditional methods. Continuing the practice for two to three years starts improving crop yields by cutting the cost of land preparation for wheat sowing, and as less weedicide and water are needed. And there are multiple gains from the project. Convincing farmers to take up Happy Seeders has helped prevent the health and environmental impacts of the air pollution caused by mass crop residue burning.

SPOTLIGHT ON DATA

Foundation funding of data projects continues to rise at the fastest rate year-on-year, signifying a growing focus on better understanding the scale and source of the air pollution problem. Data projects increased from roughly \$5 million in 2019 to roughly \$8.5 million in 2020. The growth of funding towards data is driven largely by grants in North America, Europe, India and global projects, with the least funding going to the regions with the least air quality data.

Between 2015 and 2020 spending on data in Africa was approximately \$40,000 (Figure 19). Spending on data in Europe over the same period was over 100 times greater, despite having a lower number of annual deaths due to air pollution.

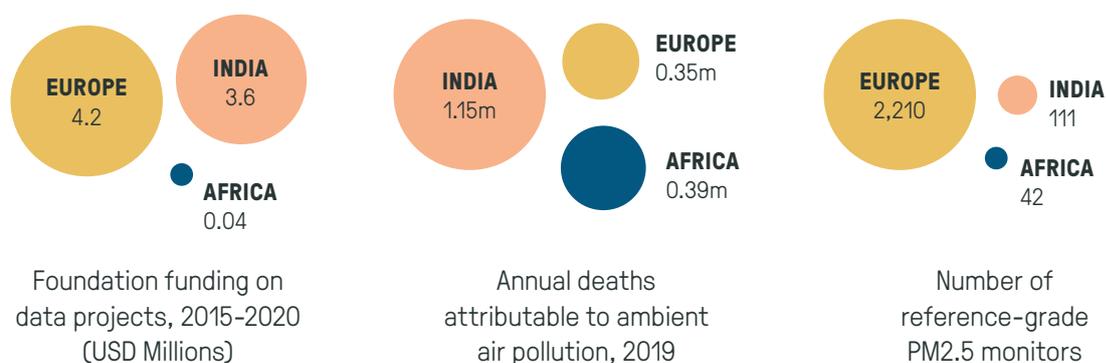
PHILANTHROPIC FOUNDATIONS ARE WELL PLACED TO ENSURE THAT THESE REGIONS ARE NOT LEFT BEHIND BY PILOTING INNOVATIVE TECHNOLOGIES AND SHARING BEST PRACTICES

The availability and quality of air quality data globally is highly variable. For decades, countries have relied on the presence of expensive reference-grade monitors to provide information on air quality. In Africa there are only 42 reference grade PM2.5 monitors, while in Europe there are over 2,000 (Figure 19).

Recent innovations and developments in low-cost sensors, satellites and modelling technologies present new ways to monitor air quality, but alone are not silver bullets. Both expanding reference-grade ground-level monitoring and investing in technical innovation are crucial to filling local data gaps at scale.³⁹

Official development funders are well placed to build capacity for local air quality management and support core ground monitoring infrastructure and systems. Philanthropic foundations are well placed to bring about a potential leapfrog in air quality data in the under-served regions. Foundations can pilot innovative approaches to data to discover what works, which can then be scaled up by other funders or integrated into multifaceted development funder projects.

FIGURE 19: COMPARISON OF THE FOUNDATION FUNDING ON DATA, THE DEATHS ATTRIBUTABLE TO AMBIENT AIR POLLUTION AND THE NUMBERS OF REFERENCE-GRADE MONITORS IN EUROPE, INDIA AND AFRICA.



Source: Global Burden Of Disease Study 2019. Institute For Healthmetrics And Evaluation, 2020. World Health Organisation, 2018.

RECOMMENDATIONS

Air pollution is a cross-cutting global problem. Action to improve air quality can achieve multiple benefits: protecting health, helping tackle inequity, mitigating climate change and contributing to sustainable development.

This report shows the limited resources development funders and foundations put into air quality projects, and highlights areas where more investment will have the greatest impact.

It highlights the glaring contradiction in funding further fossil fuel production more generously than the programmes that tackle the air pollution caused by oil, gas and coal.

Dedicated teams, specific programmes, better co-ordination and improved partnerships are among the recommendations we urge development funders and foundations to act on. We have recommendations for all funders and for the individual groups.

WE RECOMMEND

Official development funders and philanthropic foundations

- 1. Increase funding levels – investing in air quality delivers high returns for health, climate and the economy.** The scale and urgency of the problem is not matched by the current level of funding. More than 4.2 million people die early due to the effects of air pollution each year, and many millions more suffer life-impairing illness. And yet in 2019 less than 1.00% of all official development assistance (\$900 million) was spent directly addressing the problem. We know aid works – funding for China²⁶ and Mongolia has reduced air pollution, delivering health, climate and economic dividends. Funding air pollution reduction is a smart investment that makes aid dollars and philanthropy go further.
- 2. Make air pollution an explicit priority in development activities, missions, programmes and reporting.** Very few foundations and development funders have specific air quality programmes, with the issue often a secondary focus within a climate, energy, transport or health team. This is mirrored in national and

local government, where health or transport departments often leave the problem to environment departments. Some development funders such as Switzerland and the World Bank, and foundations like FIA Foundation have specific air quality programmes and others should follow suit. Funders that put an explicit focus on air quality programming and reporting will generate greater co-benefits for health, the economy and society.

- 3. Increase grant-funding to low-income countries, particularly in Africa, and diversify the set of countries receiving larger amounts of funding.** Africa is experiencing rises in death rates from air pollution that match those in Asia but receives just 5% of development funding for air quality. Given the tendency of foundations to support work in countries with stronger enabling environments, philanthropic funding focuses on a similarly limited set of medium- to high-income countries. Development funders in particular need to switch from loan funding of projects in a few middle-income Asian nations to grant funding in the low-income nations of Africa. If funders act now, they can deliver high impact, early interventions in these low- and middle-income countries where air pollution is an overlooked but growing problem.
- 4. Work together, innovate and invest in vital air quality infrastructure, solutions and advocacy.** Official development funders and foundations have complementary strengths and should work together to tackle air pollution. Foundations can pilot innovative approaches, funding higher risk projects and emerging solutions. Development actors could support delivery of core air quality infrastructure, such as monitoring, without which no progress can be made. This is especially vital in Africa, where many states lack reference-grade air quality monitors. Alignment and collaboration across funder type will help deliver scale-up. We have not yet found examples of this good practice happening within air quality projects.

Official development funders

1. **Stop all new fossil fuel investments and work with low- and middle- income countries to end spending on fossil fuel facilities.** Development funding is making deadly air pollution worse. More is still being spent on the construction and continued use of fossil-fuel powered facilities than on averting air pollution (21% more in 2019 and 2020). This has to stop. Investing in new fossil fuel projects undermines simultaneous efforts to reduce the death and illness caused by air pollution. It often makes little economic sense, with renewable energy a cost-competitive or cheaper alternative. Development funders must also end support for existing fossil fuel activity, shifting investment to clean air projects that benefit both health and climate.
2. **Improve reporting of development funding of air quality.** Almost all development funders need to improve the reporting and tracking of their spending on tackling air pollution. This will help better coordinate development activities, especially where funding comes from multiple government departments or agencies. Development funders should press the OECD-DAC to include specific codes on air pollution projects for its database. While pushing hard for this to happen, development funders should immediately take the initiative to track and self-report their air quality spending.
3. **Support governments to meet WHO ambient air quality standards and the SDG air quality targets by building broad partnerships.** All countries have signed up to meet the targets for the Sustainable Development Goals, which include substantially reducing deaths and illness from pollution by 2030 (SDG 3.9). Development funders should encourage countries to attain the relevant World Health Organisation air quality standards as a contribution to their SDG plans. Development funders should support countries to build multi-stakeholder coalitions (civil society, local government, private sector, philanthropy, the public) to achieve this. They should sponsor links across the health, environment, transport, climate and energy sectors to avoid the siloed approach that slows progress.

Philanthropic foundations

1. **Health foundations and other non-CEE (climate, energy and environment) philanthropies should bring their valuable expertise to air quality work.** Most foundation funding comes from organisations with a focus on CEE, which means the huge health impacts of air pollution are not getting the urgent attention they need. It is welcome that health funders with no CEE focus have increased funding from near zero to around \$2 million in 2020. But this is a drop in the ocean given mortality rates. Non-CEE foundations should fund air quality projects that complement existing grant-making in transport, human rights or children's development, as well as in health, and leverage their networks, thought leadership and grantees. They can also build in-house capacity on air quality or fund activity via specialist regranters.
2. **Share scalable solutions to drive action on clean air globally.** Air pollution is being tackled nationally, despite being a global problem. Foundations need to support the sharing and scaling of successful projects and solutions, applying learning from the current concentrations in funding to benefit a greater number of countries. Collaboration with development funders is one way to do this.
3. **Maximise impact by applying the expertise derived from climate and energy projects to improve air quality data monitoring and reporting.** CEE funders should apply their emissions data expertise to drive the air quality data field. The largest point of contact between climate and air quality work is emissions (data, methodologies, sources, policies etc.). Yet CEE funders spend a disproportionately small amount on improving and generating air quality data.

METHODOLOGY

This report has been made possible by the generous data sharing of leading foundations and by public records of Official Development Finance spend. Every effort has been made to ensure the data presented in this report is representative of the global air quality funding landscape. We recognise the accuracy of this analysis relies on the quality of information provided by funders and the availability of funding information. The Clean Air Fund would welcome the input of any funders not approached in developing this report to inform future publications.

SOURCES OF THE DATA

All data

- Data on mortality due to ambient air pollution was taken from the Global Burden of Disease 2019.⁴⁰
- Data on the number of reference-grade PM2.5 monitors was obtained via the World Health Organisation's Urban Ambient Air Pollution dataset.⁴¹

Foundation funding

- Data was collected via direct engagement with foundations known to be granting on air pollution and from online and public sources.
- ClimateWorks Foundation's Global Intelligence department shared data from their in-house tracking of foundation funding for climate change and adjacent topics.

Official Development Funding

- Data up to 2019 is drawn from the Creditor Reporting System (CRS) database maintained by the OECD-DAC.
- CRS data takes approximately a year to publish. 2020 data is therefore from the International Aid Transparency Initiative (IATI). Data from both sources was compared to ensure consistency across years prior to 2020. Given the data for 2020 is drawn from a different source to the data for 2015–2019, 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'.

- Additional information was obtained on projects from documents contained in development funder websites.
- Development Initiatives supported the Official Development Finance data collection.

ANALYSIS AND ASSUMPTIONS

All data

- In the instances where no end date was assigned to a grant, the duration of the grant was assumed to be one year.
- A grant invested across more than one region is categorised as a global grant.
- Europe includes pan-European grants and grants made in the UK and Turkey.
- 'Asia regional' includes all grants made in Asia excluding India and China.
- N. America includes grants made in the United States of America, Canada and the Caribbean.
- Latin America includes grants made to Central American countries and Mexico.
- Most grants were reported in USD. Those that were not were converted using a consistent exchange rate.

Foundation funding

- Only primary grants (projects where improving air quality is a primary goal and benefit) were included in the foundation funding analysis. Unlike Official Development Finance, there's no centralised database for foundation grant making and therefore it wasn't feasible to robustly capture all grants where air quality is an indirect benefit or secondary objective of a project.
- Grants that span multiple years were assumed to be disbursed evenly over those years. This is to prevent very large grants awarded in a single year but granted across multiple years significantly skewing the 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 Re-granted. An example of this would be where a grant was made by an endowed foundation to the Clean Air Fund, a re-granter. Where funding flowed directly from an endowed foundation or a re-granter 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 re-granted grants were considered.

- The focus areas of foundations were determined through desk-based research based on foundations' missions and programmes, and by information provided by the funders themselves. 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 (mobility, social impacts, human rights etc.) but these were omitted from the analysis above for brevity.
- Geographical categorisations are defined by the location of the work undertaken in the project.

- 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. We welcome the input of new funders to improve the quality of the information (see page 19).

Official development funding

- The data collected from the CRS captures disbursements only for each year assessed in the report.
- OECD-DAC statistics capture both bilateral and multilateral climate-related development finance flows. Our data therefore does not capture other 'climate-finance'; the financial resources provided under the UN Framework Convention on Climate Change (UNFCCC).
- 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 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) and to assign the strategic priority for each grant. If funders' descriptions of their projects were insufficiently detailed, some spending may have been missed.

ANNEX 1 – THE SCALE OF FUNDING TO AIR QUALITY IS NOT PROPORTIONAL TO THE MAGNITUDE OF THE PROBLEM

Healthy life years lost (disability-adjusted life years; DALYs) are an indicator of the overall burden of disease for health problems. They combine both life lost due to premature mortality and years of life lost due to time lived in states of less than full health.⁴² Annex 1 compares official development assistance and foundation funding with associated DALYs for outdoor air pollution, as well as other urgent global health emergencies: malnutrition and HIV/AIDS. In order to conduct this comparison, only official development assistance (grants and not loans) are considered throughout.

ANNEX 1: TABLE COMPARING ANNUAL OFFICIAL DEVELOPMENT ASSISTANCE FUNDING, ANNUAL FOUNDATION FUNDING AND DALYS FOR OUTDOOR AIR POLLUTION, MALNUTRITION AND HIV/AIDS.

	HEALTHY LIFE YEARS LOST (MILLIONS DALYS IN 2019)	ANNUAL OFFICIAL DEVELOPMENT ASSISTANCE (GRANTS ONLY; USD MILLIONS)	ANNUAL FOUNDATION FUNDING (USD MILLIONS)	OFFICIAL DEVELOPMENT ASSISTANCE USD/DALY	FOUNDATION USD/DALY	REFERENCES
OUTDOOR AIR POLLUTION	118	28.9 ¹	40.2 ¹	0.24	0.34	6
MALNUTRITION	58	940	137	16.21	2.36	25, 43
HIV/AIDS	56.2	6500	654	115.66	11.64	44, 45, 46

¹ Annual values were obtained by averaging across the years 2018-2020.

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info@cleanairfund.org

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