



# Ambient air pollution and health in Accra, Ghana

Pierpaolo Mudu

WHO URBAN HEALTH INITIATIVE



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ISBN 978-92-4-002229-4 (electronic version)

ISBN 978-92-4-002230-0 (print version)

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**Suggested citation.** Mudu P. Ambient air pollution and health in Accra, Ghana. Geneva: World Health Organization; 2021. Licence: CC BY-NC-SA 3.0 IGO.

**Cataloguing-in-Publication (CIP) data.** CIP data are available at <http://apps.who.int/iris>.

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Design and layout by L'IV Com Sarà

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# FOREWORD

The business of protecting the citizens of Ghana from environmental risks represents a fundamental challenge for many of us. The Ghana Environmental Protection Agency (EPA-Ghana) works to accelerate sustainable development by controlling the volume, types, constituents and effects of waste discharges, emissions, deposits or any other source of pollutants, and of substances which are hazardous or potentially dangerous to the quality of the environment and impact negatively on climate change. EPA-Ghana recognizes pollution as both an environmental and social problem that leads to a multitude of adverse effects on human health, ecosystems and the climate. Today, air pollution is one of the biggest environmental threats to public health in Ghana, shortening the lives of tens of thousands of citizens each year. The Ghanaian public often express concerns about the health effects associated with exposures to air pollution, but are sceptical about the level of understanding and evaluation of the existing risks. EPA-Ghana has dedicated significant resources to monitor and control air pollution in the country, and the progress made to date has been remarkable, but there remains much to do. Although we have a better control of the risks which constitute a major public health threat, the need to strengthen our existing capacity and strategies remains.

This report has come at an opportune time as it provides a direction for our country to take regarding how policies should respond to the challenge of tailoring interventions to mitigate the environmental and health threats that we face. A critical part of our ability to inform citizens about the risks of air pollution, resides in refining the scientific base underlying risk assessment. Organizing our policies based on a functional response, guided by the latest evidence, rather than responding reactively to emergencies, is a necessary goal to focus our actions.

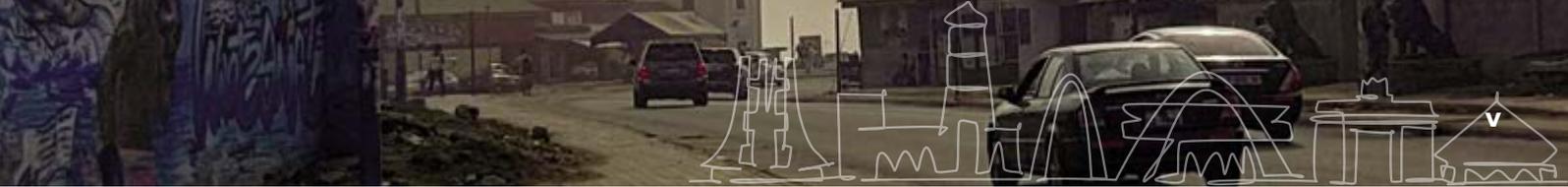
We know that the effects of air pollution on human health are particularly serious for those who are already vulnerable because of their age or pre-existing health problems. This report indicates the substantial gains to be made in public health resulting from improvements in air quality for the population of Accra. Reductions in premature mortality, morbidity and increased average life expectancy are fundamental targets to be incorporated in the work of the environmental sector in collaboration with public health actors including the Ghana Health Service, School of Public Health and the Environmental Health Division of the District Assemblies among others.

This report is not simply a set of analyses and suggestions, but provides a valuable aid to decision-makers grappling with decisions on how much to invest in air pollution reduction policies. This report therefore provides useful expert guidance to inform those decisions.

We are thankful to the World Health Organization for this timely and concise report.

**Emmanuel Appoh**

Head/Environmental Quality Department  
Ghana Environmental Protection Agency



# ACKNOWLEDGEMENTS

This report was developed by Pierpaolo Mudu (Department of Environment, Climate Change and Health, WHO).

Alexander Baklanov (World Meteorological Organization), Johan Kuylenstierna and Chris Malley (Stockholm Environment Institute, University of York, United Kingdom of Great Britain and Northern Ireland), Thiago Hérick de Sá (Department of Environment, Climate Change and Health, WHO), Andreia Costa Santos (London School of Hygiene and Tropical Medicine) and Joseph Spadaro (Spadaro Environmental Research Consultants, United States of America) contributed to the revision of the draft.

Useful observations and assistance in air quality data collection and analysis were provided by Emmanuel Appoh (Environmental Protection Agency Ghana), Gordon Dakuu (WHO Country Office Ghana) and Sara Terry (US-EPA). Comments and support were also provided by Daniel Benefor (Environmental Protection Agency Ghana) and Sophie Gumy and Giulia Ruggeri (Department of Environment, Climate Change and Health, WHO). Additional support on air pollution data trends was provided by Gavin Shaddick (University of Exeter, United Kingdom).

Assistance with the collection, dissemination of data and analysis was given by Michael Hinsch and Abraham Mwaura (Department of Environment, Climate Change and Health, WHO) and Sandra Cavalieri (CCAC). Particular thanks are due to Diana Estevez and Jessica Ho (Department of Health Statistics and Information Systems) for their review of the statistics of the report.

Comments at an early stage of the project were provided by Carlos Dora (School of Public Health, Columbia University, New York). Comments and suggestions to improve the final draft were given by Nathalie Roebbel (Department of Environment, Climate Change and Health, WHO). Special thanks to Maria Neira (Department of Environment, Climate Change and Health, WHO) for her continuous support.

The preliminary results of the analysis were presented at the Accra Metropolitan Assembly in August 2018, at the session on "Understanding the impacts of air pollution on health – enhancing actions for improving air quality in GAMA", within the US Environmental Protection Agency Megacities, Climate and Clean Air Coalition (CCAC), Urban Health Initiative (UHI), World Bank Joint Workshop Series.

This work was supported by the Climate and Clean Air Coalition through the grant provided for the Urban Health and SLCP Reduction project in Accra.

Support was also provided by the Government of Norway through its financial contribution to advance WHO's work on air pollution and health, which contributed to the completion of this product.

# ABBREVIATIONS

ALRI	acute lower respiratory infection
AMA	Accra Metropolitan Assembly
AQG	Air quality guidelines (WHO)
ASDR	age-specific death rates
BRT	bus rapid transit
CAMS	Copernicus Atmosphere Monitoring Service
CCAC	Climate and Clean Air Coalition
CI	confidence interval
CO	carbon monoxide
COPD	chronic obstructive pulmonary disease
CVD	cardiovascular disease
DALY	disability-adjusted life year
GAMA	Greater Accra Metropolitan Area
GBD	Global Burden of Disease
IER	integrated exposure response
IHD	ischaemic heart disease
NCD	noncommunicable disease
NO <sub>2</sub>	nitrogen dioxide
O <sub>3</sub>	ozone
PM	particulate matter
QBS	quality bus system
RR	relative risk
SES	socioeconomic status
SO <sub>2</sub>	sulfur dioxide
UHI	Urban Health Initiative

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