

# Rana Roy

## A race against the clock

*Urgent action is needed to limit an explosive increase in the costs of air pollution in Africa.*



**Rana Roy**

*Author, OECD Development Centre Working Paper “The Cost of Air Pollution in Africa”*

Air pollution causes millions of premature deaths worldwide every year, as confirmed in each of the recent Global Burden of Disease surveys by the Institute for Health Metrics and Evaluation, the world’s most comprehensive epidemiological database. The economic cost, as calculated by the Organisation for Economic Co-operation and Development and in other authoritative studies, runs into trillions of dollars.

Household air pollution results from the burning of solid fuels – such as coal but more usually renewable biomass – for cooking and other domestic consumption. Ambient air pollution results mainly from burning fossil fuels for use in transport, power plants, and industry. Road transport is the largest single source of deaths from ambient air pollution in the European Union, the United States, and most other advanced economies. Industry and coal-fired power plants play a larger role in China, India, and other emerging economies.

The annual world-wide death toll from household air pollution has been in slow decline, with recent estimates showing a fall in annual deaths from just above to just below 3 million from 2005 to 2015. The count has fallen to near zero in the advanced economies; in China it has been falling for the last two decades.

By contrast, the estimated annual world-wide death toll from ambient air pollution has continued to climb over the

last quarter-century, with recent estimates showing an increase from just above 4 million in 2005 to 4.5 million in 2015. Advanced economies accounted for 0.5 million of these deaths. The centre of the problem lies in Asia: China and India alone accounted for an absolute majority of the total in 2015.

In the light of this evidence, it is tempting to conclude – as does the Lancet Commission on pollution and health – that “modern” air pollution will continue to rise while “traditional” air pollution will continue to fall, and that between now and 2050 the sharpest increase in deaths will occur in the cities of South and East Asia. But there is reason to suppose that the sharpest increase is more likely to be in Africa – and that a majority of Africa’s air pollution deaths will continue to originate in household air pollution.

Advanced economies have succeeded in controlling ambient air pollution through effective regulation in the past and possess the knowledge and policy tool-kit to do so, at relatively little cost, in future. Their recent uptick in deaths is a self-inflicted wound, the result of a weakening of regulatory pressure and the singular misstep of promoting – via tax incentives – a shift from petrol to diesel vehicles. Deaths in China remain high but they peaked a decade ago and have been falling since, as they have in a number of other major emerging countries, though not yet in India.

In Africa, deaths from ambient pollution have increased steadily, outpacing the global increase, albeit from a relatively low base. And deaths from household pollution, starting from an already high base, have also continued to increase, against the global trend.

By United Nations projections, Africa’s population is set to increase from 1.25 billion today (17 per cent of the global total) to 2.5 billion by 2050 (26 per cent) – and thence to 4.5



*The combination of polluting domestic energy use with high-density poor-quality housing means the growth of urban Africa is likely to bring an explosive increase in premature deaths from air pollution.*

But the population of North Africa, where household air pollution is much less of a problem than ambient air pollution, is set to fall from 15 per cent of the continent's total today to 11 per cent by 2050 and to 7 per cent by 2100. It is Sub-Saharan Africa, where household air pollution is the larger problem, which will dominate. Hence, if current patterns remain unchanged, household air pollution is more likely than not to continue to account for the majority of the toll in Africa.

Thus the challenge posed to policymakers in Africa is starkly different to those in the advanced economies and many emerging economies. Whereas others have eliminated, or steadily reduced, deaths from “traditional” household pollution, sub-Saharan African countries need to confront a steadily rising toll. And whereas others can focus on ambient pollution in its “modern” forms, this is not the case in Africa. It is not a matter there of tightening regulations on major power plants or of better enforcing European vehicle standards but rather – as Professor Mathew Evans of York University put it – a matter of dealing with “millions of steel diesel electricity generators” and “cars which have had their catalytic converters removed”. It is not a problem of modernity but of insufficient modernisation.

If Africa is to limit an explosive increase in air pollution and all its attendant human and economic costs, it will need bold policies: not targeted adjustments here and there, but massive investments in urban improvements, infrastructure and reconstruction. Inefficient fuel stoves will need to be replaced with modern cookers, biomass with natural gas or electricity, diesel generators with modern power plants, second-hand diesel vehicles with mass transit, and so on. These investments will be expensive. But the benefits in lives saved, improved health, productivity gains, and a higher material standard of living should outweigh the costs. ▲

billion by 2100 (40 per cent). Meanwhile, Asia's population is set to fall in relative terms from 60 per cent of the global total to 54 per cent by 2050 and 43 per cent by 2100: China's is set to fall in both relative and absolute terms. It is Africa which will dominate the numbers, including the numbers for mortalities.

---

**4.5 billion:** Africa's projected population in 2100, compared to 1.25 billion today

---

Projections for coming decades also show continuing growth in Africa's urban population, in both absolute and relative terms. To date, the continent's death toll from air pollution there has risen in tandem with the growth in its urban population. The sources of ambient emissions are mainly urban, while the combination of polluting forms of domestic energy use with high-density poor-quality housing in urban areas exacerbates its health impacts. If these patterns of urban life remain unchanged, the growth of urban Africa is likely to bring with it an explosive increase in premature deaths from both types of air pollution.