**Combating pollution**

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WHILE Pakistan`s carbon emissions are very low in comparison to the rest of the world, it is among the most polluted countries in terms of ambient (outdoor) air pollution and water contamination. According to rankings compiled by IQAir, Pakistan was the world`s second most polluted country in the world for both 2018 as well as 2019, behind Bangladesh, with air quality characterised as `unhealthy` as measured by levels of PM2.5 (fine particulate matter that have a diameter less than 2.5 micrometres).  
  
The annual average concentration of PM2.5 recorded for the country as a whole was seven times higher than the World Health Organisation`s recommended air quality guideline. For several months of the year, Pakistan`s main urban centres, especially Lahore, Islamabad, Karachi, Peshawar and Faisalabad are ranked among the cities with least safe air quality in the world ranging from unhealthy to outright hazardous, with Lahore alternating with New Delhi as the top-ranked city globally between November and February each year.  
  
At the time of writing, the air quality index (AQI) value for Lahore was 178, according to specialist website IQAir, which indicates a PM2.5 concentration of 108.2 µg/m3. This level is characterised as `unhealthy` for all population groups, according to the Air Quality Monitor scale of the US Environmental Protection Agency.  
  
Exposure to high levels of air pollution can cause a variety of adverse health outcomes. According to the WHO: `It increases the risk of respiratory infections, heart disease and lung cancer.` Other research indicates that every 10 µg/m3 increase in PM 2.5, increases all-cause mortality between 3-26 per cent, chances of childhood asthma by 16pc, chances of lung cancer by 36pc and heart attacks by 44pc. The WHO estimates that ambient air pollution accounts for an estimated 4.2 million deaths per year worldwide.  
  
The estimates for the number of premature deaths caused annually by pollution in Pakistan vary from 22,600 in the mid-2000s, to well over 300,000 as of 2015. Based on data for more recent years, air pollution is the sixth leading risk factor for mortality in Pakistan. According to the State ofGlobal Air Report 2019, 47pc of deaths from chronic obstructive pulmonary disease (COPD) are attributable to air pollution in Pakistan, in addition to 32pc of deaths from lung cancer.  
  
The health costs attributable to ambient air pollution are substantial. A 2014 study by the World Bank estimated that Pakistan`s annual burden of disease due to outdoor air pollution accounted for 163,432 disability-adjusted life years (DALYS)lost.  
  
The State of GlobalAir 2019 Report found that `exposure to outdoor PM2.5 accounted for a loss of one year and seven months in life expectancy`.  
  
Air pollution is not just a health issue but a significant (and growing) development challenge.  
  
High levels of ambient air pollution impose significant costs on society and the economy. The World Bank has estimated that, for the world as a whole, the cost associated with health damage from ambient air pollution is around $5.7 trillion, equivalent to over 5pc of global GDP. According to its findings, `In individual countries, the economic burden of pollution associated with premature mortality and morbidity is also significant, equivalent to 5 to 14pc of countries` GDPs`.  
  
The costs associated with pollution are both direct as well as indirect, and include health and social costs, environmental costs, economic costs incurred by households as well as firms, and fiscal costs. To address the issue of pollution (as well as carbon emission), a range of policy instruments are available and in use around the world. These include inter alia: Clean-air legislation, tighter regulation and greater enforcement with regard to emission standardsandsafeguards; Introduction of cleaner fuels in transportation and power generation; Adoption of carbon sequestration and offsetting measures, such as KP`s billion-tree tsunami initiative or the Punjab afforestation programme; Provision of subsidy and/or grants for adoption of cleaner fuels and newer technology; A congestion tax; Emissions Trading Systems (or `cap-and-trade` systems). These are specific to carbon emissions; A `carbon` tax levied on motor fuels, vehiclepurchase and/or ownership, tailpipe emissions, and on polluter industries; Mandating targets for the sale of electric and hybrid vehicles.  
  
The major sources of ambient air pollution worldwide include inefficient modes of transport (polluting fuels and vehicles), inefficient combustion of household fuels for cooking, lighting and heating, coal-fire d power plants, agriculture, and waste burning. In Pakistan`s case, with the rapid increase in the number of motor vehicles on road from approximately4.5min2001toaprovisionalestimated29.5m by 2020, vehicular emissions are estimated to account for over 40pc of ambient air pollution.  
  
Hence, by virtue of the well-established `polluter pays principle`, a green tax on motor fuels is an option worth considering, as one of several multipronged measures. This tax could take the form of a nominal per-litre levy on motor fuels sold in the country, with the advantage of being both targeted as well as an `ef ficient` tax with low compliance and administrative costs. It is unlikely to be inflationary if set at well below Rs1 per litre, allaying a key concern of the government.  
  
Since petroleum pricing is a federal subject under the Constitution, the federal government will need to introduce the `green` tax on every litre sold, and pass on the proceeds as a straight transfer to each province under the NFC Award. The revenue raised can be used to partially defray the substantial economic and health costs incurred as a result of air pollution, as well as build sub-national governments` fiscal capacity to make appropriate investments and incur expenditures to reduce ambient pollution levels.  
  
In summary, Pakistan has a serious pollution problem. With rapid urbanisation as well as motorisation, its poor air quality is deteriorating further, posing very significant health risks for its population as well as its economic trajectory. Concerted policy action is needed on a wide front to deal with the challenge.  The writer is a former member of the prime minister`s economic advisory council, and heads a macroeconomic consultancy based in Islamabad.