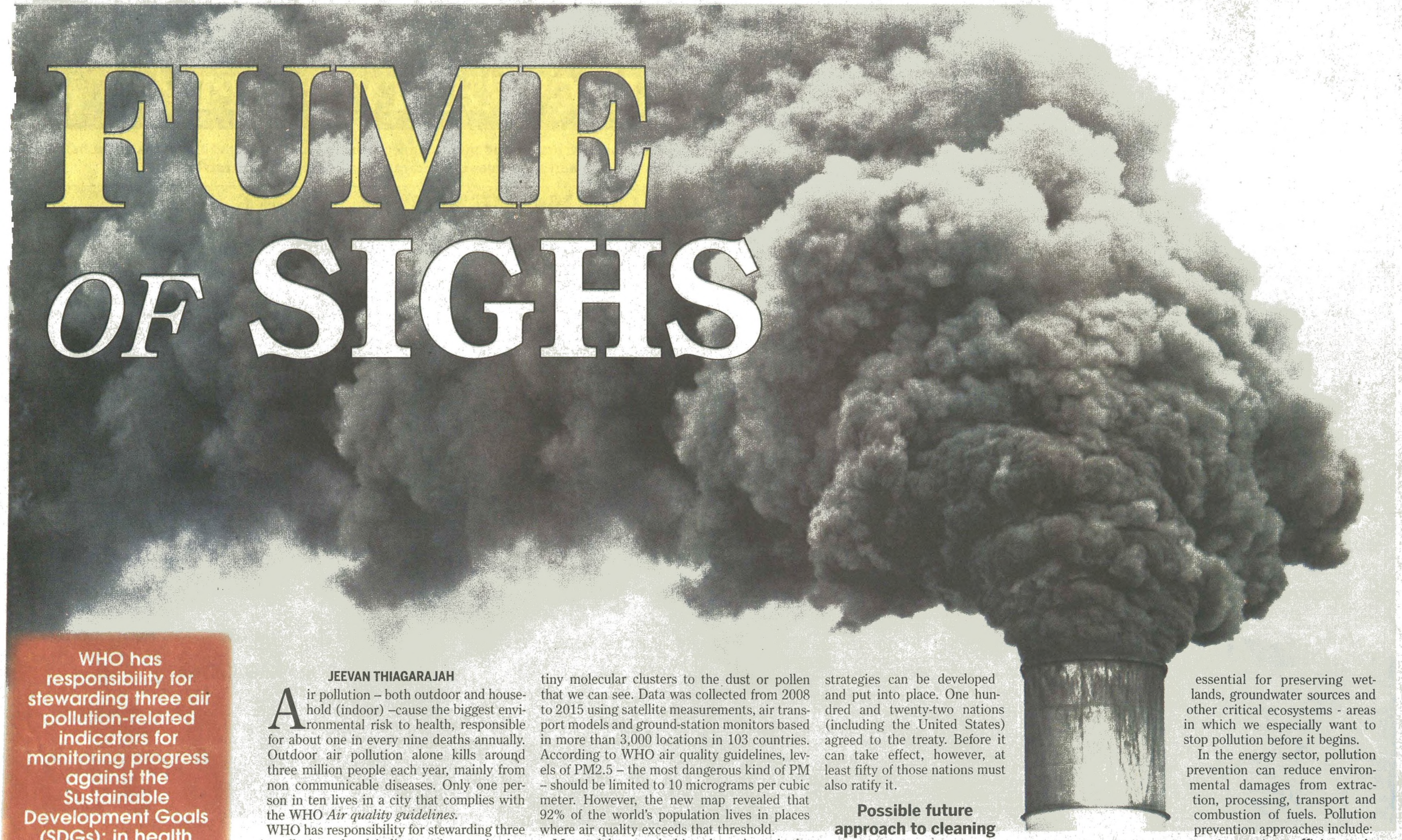
FUME OF SIGHS



WHO has responsibility for stewarding three air pollution-related indicators for monitoring progress against the Sustainable Development Goals (SDGs): in health (Goal 3), in cities (Goal 11) and in energy (Goal 7). WHO resolution WHA68.8, maps out a road map for enhanced global responses to the adverse effects of air pollution and provides an essential framework for decision-makers to choose and implement the most efficient policies. The Western Pacific and South East Asian regions bear most of the burden with 1.1 million and 799 000 deaths, respectively.

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Air pollution – both outdoor and household (indoor) –cause the biggest environmental risk to health, responsible for about one in every nine deaths annually. Outdoor air pollution alone kills around three million people each year, mainly from non communicable diseases. Only one person in ten lives in a city that complies with the WHO *Air quality guidelines.*

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The Western Pacific and South East Asian regions bear most of the burden with 1.1 million and 799 000 deaths, respectively. In other regions, about 211 000 deaths occur in Sub-Saharan Africa, 194 000 in the Eastern Mediterranean region, 190 000 in Europe, and 93 000 in the Americas. The remaining deaths occur in high-income countries of Europe (289 000), the Americas (44 000), Western Pacific (44 000), and Eastern Mediterranean (10 000).

Almost 94 % of deaths worldwide are due to non-communicable diseases in adults, such as cardiovascular diseases (stroke and ischaemic heart disease), chronic obstructive pulmonary disease and lung cancers. The remaining deaths occur in children under five years of age due to acute lower respiratory infections.

A new WHO map was created with data on the annual amount of particulate matter, found in the air around the world. PM is a type of air pollutant that consists of small particles, from tiny molecular clusters to the dust or pollen that we can see. Data was collected from 2008 to 2015 using satellite measurements, air transport models and ground-station monitors based in more than 3,000 locations in 103 countries. According to WHO air quality guidelines, levels of PM2.5 – the most dangerous kind of PM – should be limited to 10 micrograms per cubic meter. However, the new map revealed that 92% of the world's population lives in places where air quality exceeds that threshold.

Many of the areas lacking clean air are in the Western Pacific, the Mediterranean region, sub-Saharan countries and Southeast Asia, according to the map.

Taking on pollution: a global attempt

While artificial chemicals have improved the quality of life around the world, they have also posed a threat to the health of people and wildlife. In late 2000, in an effort to control the effect of toxic global pollutants, the United Nations Environment Programme organised a meeting to draft a treaty to restrict the production and use of twelve persistent organic pollutants (POPs), especially those used as pesticides. The twelve toxic chemicals cited, which environmentalists have called the "dirty dozen," include eight pesticides (aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, mirex, and toxaphene), two types of industrial chemicals (hexachlorobenzene and polychlorinated biphenyls or PCBs), and two types of industrial byproducts (dioxins and furans). These toxic pollutants were chosen not because they are the most dangerous, but because they are the most widely studied. Since it is still widely used in Africa to control malaria, DDT was given a special exemption: it can be used in those countries until replacement chemicals or strategies can be developed and put into place. One hundred and twenty-two nations (including the United States) agreed to the treaty. Before it can take effect, however, at least fifty of those nations must also ratify it.

Possible future approach to cleaning up pollution

The cost of cleaning up tens of thousands of toxic sites on factory grounds, farms, and military installations is staggering. In the United States, that amount may soon exceed $700 billion. So far, the main approach has been to dig the polluting chemicals out of the ground and transport them to a landfill. However, after a decade of research, scientists in the early twenty-first century found that hundreds of species of plants, along with the fungi and bacteria that inhabit the ecosystem around their roots, seek out and often break down chemical molecules that can harm most other life. For example, there are sunflowers that capture uranium, ferns that thrive on arsenic, clovers that eat oil, and poplar trees that destroy dry-cleaning solvents. Research into using plants as pollution sponges must continue, but early reports of their helping to clean up pollution were promising.

Specific pollution prevention approaches

Pollution Prevention (P2) approaches can be applied to all potential and actual pollution-generating activities, including those found in the energy, agriculture, federal, consumer and industrial sectors. Prevention practices are essential for preserving wetlands, groundwater sources and other critical ecosystems - areas in which we especially want to stop pollution before it begins.

In the energy sector, pollution prevention can reduce environmental damages from extraction, processing, transport and combustion of fuels. Pollution prevention approaches include:

- **increasing efficiency in energy use;**
- **use of environmentally benign fuel sources.**

In the agricultural sector, pollution prevention approaches include:

- **Reducing the use of water and chemical inputs;**
- **Adoption of less environmentally harmful pesticides or cultivation of crop strains with natural resistance to pests; and**
- **Protection of sensitive areas.**

In the industrial sector, examples of P2 practices include:

- **Modifying a production process to produce less waste**
- **Using non-toxic or less toxic chemicals as cleaners, degreasers and other maintenance chemicals**
- **Implementing water and energy conservation practices**
- **Reusing materials such as drums and pallets rather than disposing of them as waste**

In homes and schools examples of P2 practices include:

- **Using reusable water bottles instead of throwaways**
- **Automatically turning off lights when not in use**
- **Repairing leaky faucets and hoses**
- **Switching to "green" cleaners.**