- Pollution / Virus

The Plastic Pandemic

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We are fearful of breathing in the air around us because there's a pandemic. A paper published in the Lancet (bit.ly/2Qj55rr) last week states that the Covid-19 virus could be largely airborne, more than transmission via droplets and contaminated surfaces. Even with physical distancing, the air we breathe could be transporting the virus into our lungs. So, properly worn face masks are of paramount importance in preventing infection.

The scary part is that the air we breathe has been polluted for more than 200 years with industrial and other emissions. Earth's atmosphere has never been all that clean, what with recurring natural disasters like forest fires, volcanic eruptions, dust storms, unfiltered ultraviolet (UV) radiation, cosmic debris and other such naturally occurring pollutants.

The post-industrial world, however, is subject to far more per nicious sources of pollution. Besides CO2saturated industrial smoke and power stations, fumes from agricultural waste bur ning and vehicular emissions – and now the coronavirus – there are more toxins in air, water and soil in the form of microplastics. This has been reiterated in the April 2021 study, 'Constraining the Atmospheric Limb of the Plastic Cycle,' published in Proceedings of the National Academy of Sciences (PNAS). It shows that 84% of airborne microplastics in the American West actually comes from roads outside major cities.

Another 11% could be blowing all the way in from the ocean. The study believes that microplastic particles can stay airborne for nearly a week – which, as a Wired.com report underlines, is 'more than enough time for them to travel across continents and oceans'.

When plastics replaced glass, porcelain and metal to make containers, buckets, plates and innumerable industrial and household items, no one knew the extent to which it would affect public health and welfare, never mind the survival of other species, especially marine organisms.

If minimising plastic use can mean the difference between good and bad health – or even life and death – one would think that better sense would prevail. Wrong. Plastic is cheaper than other materials. It is more easily available. It is easy to maintain. It does not break easily like glass. It is lighter, and easy to store.

Climate change, environmental degradation, poisonous products, air, water and soil pollution and more are compelling challenges posing grave risks to life, limb and livelihoods. Despite many people replacing their earlier food storage containers and tableware with non-plastic, plastic remains near-ubiquitous. In tooth brushes, in buckets and mugs, and so much more.

At any given time, a reported 1,100 tonnes of microplastic particles are floating over the western parts of the US. These particles, smaller than 5 mm, come from discarded plastic bottles and bags. And from sloughed off microfibres that get into wastewater from washing synthetic clothes. Water loaded with disintegrated plastic gets into the soil, and also gets flushed into the sea. Microplastics are now part of the water cycle. They stay in the atmosphere when water evaporates, perhaps indefinitely.

This, according to Janice Brahney, a co-author of the new PNAS study, really highlights the role of 'legacy pollution'. "The amount of plastics that are in our ocean is just overwhelming compared to anything that we produce in any given year in the terrestrial environment," she states, adding, "When a car rolls down a road, tiny flecks fly off its tires as part of normal wear and tear. This material isn't pure rubber; it contains added synthetic rubbers and a slew of other chemicals. Tire particles, then, are technically microplastics, and they're all over the place."

Since polymers are present everywhere – air, soil, water – researchers say it is now impossible to trace their origins. Hence the alarming but catchy phrases doing the rounds like 'Plastic is falling out of the sky' and 'Plastic rain is the new acid rain.'

This brings to mind work done by India's 'Plastic Man', waste management expert Rajagopalan Vasudevan of ThiagarajarCollegeof Engineering, Madurai. Vasudevan, recipient of the Padma Shri in 2018, promotes

adding plastic waste in construction material to make roads. But wouldn't this be double jeopardy – with the friction between plastic-coated tyres and plastic roads generating even more microplastics?

When things accelerate beyond our immediate control, as has global warming, deforestation, and now the Covid-19 pandemic, experts ask us to learn to adapt till mitigation measures take effect. How does one adapt to toxic air-laden with virus, CO_2 and plastic? Don't hold your breath on this one.