

# “Plastics crisis” endangers humanity and all aspects of the environment, concludes *Lancet* study

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“The world is in a plastics crisis” declares a review published August 3 by *The Lancet* medical journal. “Countdown on health and plastics” is a study co-authored by Professor Philip J. Landrigan, a paediatrician and epidemiologist, in collaboration with contributors including biologist Professor Martin Wagner and 24 others across a range of disciplines including marine ecology and law.

The review opens with a stark warning: “Plastics are a grave, growing, and under-recognised danger to human and planetary health. Plastics cause disease and death from infancy to old age and are responsible for health-related economic losses exceeding US\$1.5 trillion annually.”

Global capitalist commodity production is the driving force behind this growing threat to planetary health. Or as the review puts it: “The principal driver of this crisis is accelerating growth in plastic production”. Global plastic output has grown by a factor of at least 250, “from less than 2 megatonnes (Mt) in 1950, to 475 Mt in 2022, with the most rapid increases seen in the production of single-use plastics.”

Plastic waste has increased in direct proportion to skyrocketing plastic production. That will nearly triple by the year 2060 without intervention.

The study describes plastic as “the defining material of our age.” The authors note that plastics are “flexible, durable, convenient, and perceived to be cheap. Plastics are ubiquitous in modern societies, and have supported advances in many fields, including medicine, engineering, electronics, and aerospace.” But its widespread use has huge “hidden economic costs borne by governments and societies.”

At least 16,000 chemicals are involved in the production of modern plastics, including numerous flame retardants,

fillers, dyes and stabilising agents making them stronger, flexible and durable. Many of these ingredients extend the life of plastic products, and by extension plastic litter.

An increasing number of chemicals utilised in the production of plastics are linked with negative health impacts at all stages of human life, the report states. But measures to understand scientifically both the human and environmental impacts of plastics pollution are hampered by a singular lack of corporate transparency regarding which chemicals are used to produce which specific plastics.

Over 98 percent of plastics are manufactured using fossil fuels—oil, gas and coal—with energy-intensive production processes releasing the equivalent of 2 billion tonnes of CO<sub>2</sub> a year into the environment. In addition, half of unmanaged plastic waste is burned in the open air, producing other toxic forms of air pollution.

Single-use bags, plastic bottles, fast-food containers and wrappers are four of the main plastic culprits fouling the environment, and in total constitute almost half of all manufactured waste. Many of these products have a useful lifespan of mere minutes to hours yet remain in the environment for hundreds of years.

As the *Lancet* reviewers point out, the damage represented by plastics has been understood by scientists for decades. Sixty years ago, the first reports emerged of “plastic waste obstructing the gastrointestinal tracts of seabirds, entangling sea turtles, and killing marine mammals.”

Importantly, the study explains how the impacts of plastic pollution “fall disproportionately upon low-income and at-risk populations.” In every country, without exception, it is the working class which lives closest to polluting industries, stinking refuse dumps, recycling, power and incineration plants, and heavily polluted roads

and motorways, and must breathe the most polluted air. In a vastly unequal society, the super-rich can move uphill, upstream and upwind, away from the worst environmental pollution created by the corporations they own.

The harm to human health and especially to workers in the plastics production process has been scientifically understood since the mid-1970s, including observation of initial cases of “hepatic angiosarcoma [a rare and aggressive cancer of the liver] among polyvinyl chloride [PVC] polymerisation workers in Kentucky, USA, occupationally exposed to vinyl chloride monomer.”

The review notes how the risk of plastics pollution to humans was first acknowledged because of “the high incidence of injuries, illnesses, and deaths among workers who extract carbon feedstocks for plastic production by fracking, oil drilling, and coal mining.”

Over the following decades scientists found that “Elevated rates of stillbirths, premature births, asthma, and leukaemia in fenceline communities adjacent to fracking wells and plastic production facilities show that plastics’ harms extend beyond the workplace and affect people of all ages.”

Today, the review warns, microplastic and nanoplastic particles are found increasingly “in human biological specimens, including blood, breastmilk, liver, kidney, colon, placenta, lung, spleen, brain, and heart in populations worldwide.” Even in household dust, scientists have located brominated flame retardants which are a group of synthetic organobromine chemicals added to products to prevent or slow the spread of fire.

With no let-up by capitalist corporations in the use of fossil fuels, the plastics crisis, the review makes clear, is accelerating “alongside the other planetary threats of our time and is contributing to climate change, pollution, and biodiversity loss.”

The *Lancet* pulls no punches about recycling as a potential solution to the plastics crisis pointing out “Less than 10% of plastic is recycled” and “therefore 90 percent is either burned in the open air, goes to landfill or gathers in the environment.” Chemically complex plastics cannot be recycled, unlike paper, glass, steel, and aluminium. The review states unequivocally, “It is now clear that the world cannot recycle its way out of the plastic pollution crisis”.

The review concludes, “Continued worsening of plastics-associated harms is not inevitable.” It lists “ambient air pollution, lead, mercury, climate change, and chlorofluorocarbons” as examples whereby the harm to human beings “can be successfully and cost-effectively

mitigated with evidence-based laws and policies that are supported by enabling measures.” The review lists potential measures to fight pollution: “transparency, regulation, and monitoring” apparently “facilitated by effective implementation measures (e.g.: fair enforcement and adequate financing).”

The study’s authors are correct to conclude that worsening pollution is not inevitable. But their claim that government regulation and legislation can prevent the plastics crisis from metastasizing into a full-scale human and planetary disaster is wishful thinking. Pollution has reached such catastrophic levels because capitalist governments in every country are beholden to transnational corporations and the multi-billionaires who own them.

The publication of the *Lancet* review was timed to coincide with UN negotiations toward what was hailed as a landmark treaty to end plastic pollution. But member states failed to get a deal over the line at the end of December 2024, and the latest set of talks, the sixth in under three years, ended August 14 in ignominious failure.

UN negotiations have fractured over whether an agreement should focus on reducing plastics production or plastic pollution. Russia, Saudi Arabia and other oil and gas-based economies oppose any cuts to plastic production, a stance shared by the plastic-producing corporations. They argue that superior waste collection and better recycling infrastructure is the way to deal with the plastics crisis.

The *Lancet* review’s findings are an indictment of the profit system and its incompatibility with human need, and ultimately the very survival of the planet. Scientists and the working class must link arms against the capitalist nation-state system rooted in production for profit and the anarchy of private competition. The colossal fortunes of the billionaires must be expropriated and placed under social ownership. The rational use of plastics alongside finding new alternatives—and their disposal without further environmental degradation—requires the global reorganisation of society on a socialist basis under democratic workers’ control.



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