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A Science-Policy Panel to Catalyze A Global Response to Chemicals, Waste and Pollution

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The Lancet Commission on Pollution and Health (2017) highlighted that polluted air, water and soil is responsible for 9 million premature deaths annually worldwide (Fuller *et. al.*, 2022) - or one in six deaths. To put that in perspective, that is three times the annual mortality from malaria, tuberculosis and HIV *combined*. New data shows one third of all children are lead (Pb) poisoned – which is up to 800 million children globally (UNICEF & Pure Earth, 2020). A 2019 ranking (based on data from the Institute for Health Metric's (IHME's) 2017 Global Burden of Disease Study) of global premature, pollution-related deaths placed six G20 countries, including Brazil, China, India, Indonesia, and the United States in the top 10, with a combined death toll of over 4.8 million people per year (GAHP, 2019). In early April 2022, the World Health Organization (WHO) stated that 99 per cent of people breathe polluted air – up from 91 per cent just two years ago (IHME, 2019). The enormity of this finding led the WHO to dedicate the theme of 2022 International World Health Day to "Our Planet Our Health" – highlighting the detrimental impact of anthropogenic pollution to human and environmental health.

Another significant metric is the Global Disability-Adjusted Life Years (DALYs). It is estimated that approximately 275 million DALYs are attributable to pollution globally, with air pollution responsible for roughly 147 million DALYS, water pollution (84 million), lead

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(24 million), and occupational pollution (18 million) (Landrigan *et. al.* 2017).

Yet except for ambient air pollution, there is little public awareness of the enormous health consequences of pollution, especially on women, children and marginalised communities. And further, there is little by way of resources being directed towards implementation of efforts to solve pollution at its source, especially in the worst affected countries. A 2016 analysis of Official Development Spending calculated that on average, global investment to mitigate pollution deaths from risk factors associated with industrialization and urbanization, i.e. ambient air and chemical pollution amounts to only $14/death, compared with $1,250/death for malaria, $190/death for tuberculosis, and $165/death for HIV/AIDS (Swinehart, 2019). While the number of deaths from pollution associated with industrialization and urbanization are 9 times higher than those caused by malaria, OECD spending on this issue amounts to only 10 per cent of that allocated to malaria.

Just earlier this year, the UN Environmental Assembly, at its 5th session part 2 (UNEA 5.2) adopted a resolution that "a science policy panel should be established to contribute further to the sound management of chemicals and waste and to prevent pollution". The Resolution, which was sponsored by Burkina Faso, Colombia, Costa Rica, Ghana, Mali, Niger, Nigeria, Norway, Peru, Senegal, Switzerland, Thailand, United Kingdom of Great Britain and Northern Ireland, and Uruguay, was approved by a consensus across all regions of the world, and underscored the importance of sound management of chemicals and waste in order to protect human health and the environment (UNEA, 2022).

The proposed science policy panel (SPP) is urgently needed. Not only is pollution - chemicals and hazardous waste in air, water and soil - a huge, under-recognized global environmental health problem, that costs up to 2 per cent of global GDP (Landrigan *et. al*, 2018) – the number of deaths attributable to pollution is likely a severe undercount. Although there have been great advances in the scientific understanding of pollution and its health impacts, there are still many gaps in our knowledge. These include an absence of information on pollution levels and prevalence of pollution-related disease in many countries, and lack of research into the toxic effects of many chemicals in common use, especially newer classes of chemicals. There is also uncertainty about the dose-response functions (health impact linked to varying dosages of pollutants absorbed) for many commonly used chemicals.

Nevertheless, what we do know at present is extremely alarming - and shows no signs of improvement in the worst affected countries. While high income countries have made significant progress over the last 30-40 years, the 2017 Lancet Commission on Pollution and Health demonstrated that 92 per cent of pollution-related mortality (and most of the associated economic losses) now occurs in low- and middle-income countries (LMICs). These countries are also least equipped to deal with – and address - the health and economic consequences of pollution exposure and implement preventative and mitigative measures.

It is also demonstrated that deaths from modern pollution – i.e. pollution stemming from industrialization and urbanization – is getting worse, while deaths from traditional pollution – that attributable to water and sanitation and indoor cookstoves – are improving (Landrigan *et.al.*, 2018). The latter is in large part to the increased efforts made over the last decades.

Of the total pollution-related mortality, roughly 6.5 million deaths are attributable to air pollution (IHME, 2019). This includes 4 million deaths from ambient particulates, and 2 million from household air (the balance being ambient ozone which accounts for about 400,000). Water pollution is responsible for about 1 million deaths, of which unsafe sources account for the bulk, and unsafe sanitation for a (declining) balance (IHME, 2019). Occupational pollution-related deaths are estimated at close to 1 million and associated with particulates (500,000) and carcinogens (350,000) (IHME, 2019). Another 1 million deaths are due to lead (Pb, 900,000) and other toxic substances, such as mercury, chromium, and pesticides (IHME, 2019). As noted, the mortality from newer chemicals, such as PFAs and endocrine disrupters, remains unknown.

The Science-Policy Panel on Chemicals, Wastes and Prevention of Pollution (SPP) has been suggested as a body to help address the twin problems of (i) improving the science of understanding the full toll that pollution takes on global public health, and (ii) promoting policy initiatives to help reduce polluting activities. The global concern for climate change is largely due to an SPP: the Intergovernmental Panel on Climate Change (IPCC). Similarly, the other environmental crisis facing the planet - biodiversity - loss also has its own SPP: the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) established by States in 2012 as an independent intergovernmental body, which has drawn major attention in its own right. It is hoped that the proposed SPP would similarly galvanize the world community into taking effective action on chemicals, waste and pollution.

It may be obvious to environmental health practitioners and academics that action on pollution is urgently needed, but the argument for such action and priority setting has yet to reach the ears of key decision makers. It is envisaged that, like IPCC and IPBES, the proposed SPP for chemicals, wastes and pollution prevention would be an independent intergovernmental body. The UNEA Resolution calls for the convening in 2022 of an *ad hoc* open-ended working group (OEWG) to prepare proposals for the scope, structure, governance, procedures and administrative arrangements for the SPP. The Resolution stipulates that the OEWG would complete its work by end-2024, after which an intergovernmental meeting is to be convened to consider the establishment of the SPP.

The proposed SPP for chemicals waste and pollution prevention would also have the additional benefit of helping achieve the Sustainable Development Goals (SDGs). As the afore-mentioned Lancet Commission on Pollution and Health noted, the SDGs focus on pollution to an extraordinary extent. SDG 3 on good health and well-being commits the world - in SDG 3.9 - to substantially reduce, by

2030, the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination. But there are many other pollution-specific or pollution-related SDGs: SDG 6 (water and sanitation); SDG 2.4 (improving soil quality); SDG 7 (clean energy); SDG 9.4 (clean technologies and industrial processes); SDG 11 (sustainable cities and communities); SDG 12 (responsible consumption and production); SDG 13 (climate action); and SDGs 14-15 (water and land conservation). By making global action on chemicals, waste and pollution more purposive and comprehensive, the proposed SPP could significantly expedite attaining these SDGs.

With the approval of the UNEA Resolution, the focus of diplomacy and negotiation now shifts to the OEWG and finalizing a comprehensive proposal that could be considered by an intergovernmental meeting to establish the SPP. In that context, in addition to governance and financing, there are a few issues that need to be discussed and addressed.

The first relates to the health dimension of chemicals, waste and pollution. The Resolution to establish the SPP reaffirms that the sound management of chemicals and waste is crucial for the protection of human health. It also recognizes that air pollution is the single greatest environmental risk to human health, with disproportionate impacts on women, children and the elderly. Accordingly, the Resolution invites the World Health Organization (WHO) to play a role, as appropriate, in the OEWG. However, this invitation by itself may not be enough to fully engage WHO and the health sector. Achieving such engagement is critical to help mitigate the silo mentality that has resulted in pollution not receiving adequate international political attention. If WHO is to participate actively and effectively in the OEWG, it may be necessary for WHO Member States to propose actions through the WHA governance structure to promote inclusion the impacts of pollution on health on the agenda, as well as champion active involvement in the SPP.

Second, concern for the health dimension goes beyond its relevance for action on chemicals, waste and pollution. Individual chemicals or toxicants are not equal in their impacts on human health, and efforts to establish a burden of disease for many toxicants are still under way. Nevertheless, existing burden of disease data, though an undercount, provide a meaningful way to (i) propose targets for pollution action, (ii) measure progress towards those targets, and (iii) importantly, serve as a priority-setting criterion for policy action on chemicals, waste and pollution to protect the most vulnerable and at risk.

Third, the principal functions of the proposed SPP include (i) horizon scanning to identify issues of relevance, and (ii) undertaking assessments of current issues, in particular those relevant to LMICs. While both these functions are important, with (i) 92 per cent of the burden of disease falling on LMICs, (ii) the present and continuing health consequences, and (iii) the scale of such damage, an especially strong focus is warranted on the issues that concern the most people and the worst affected countries.

Fourth, from GAHP's view the most critical pollution issues that require priorities in accordance to human health impact, especially in LMICs are:

- ambient air pollution
- household air pollution
- lead (Pb) exposures
- other chemicals and waste (mercury, hexavalent chromium, e-waste, etc.,)

To ensure these issues receive focused attention, it would be beneficial if the proposed SPP could have two working groups: one on air pollution, and the other on lead (Pb) and other chemicals and waste.

Further, since pollution does not recognize borders, the transboundary aspects of these types of pollution should also be considered. Examples include crop burning in one country affecting air quality in another, atmospheric emissions of heavy metals (such as lead, mercury and cadmium), and trade in contaminated food (including baby-food) and other products. Hence, the pollution issues of relevance for LMICs are also of concern for developed countries. Reducing and controlling such pollution at source benefits both directly and should be of interest to them. The USA, in particular, is likely to support a focus on air pollution. During UNEA5.2 preparatory meetings, the US Government expressed a strong desire to see how a "SPP that covers pollution more broadly, with an initial focus on air pollution, could have a significant impact on how governments and other stakeholders can work effectively to address this global problem." Indeed the US Environmental Protection Agency (EPA) has also identified both air pollution and transboundary pollution as international priorities[1].

Fifth, as noted earlier, there is still much that is not known about the harmful health effects of toxic chemicals; not just about newer chemicals (PFAs, endocrine disruptors) but also about well-known pollutants, such as lead (Pb). However, like IPCC and IPBES, it is likely that the proposed SPP would not engage in undertaking any primary research. That said, it could play a useful role in (i) taking stock of existing knowledge, (ii) identifying areas of needed research, and (ii) helping resources flow to such research.

Finally, as in the case of fossil fuels, much of the research and knowledge of chemicals and waste is in the hands of industry. The SPP's access to such data may be fraught and care must be taken to avoid potential conflicts of interest. However, with safeguards in place, it should certainly be possible for the industry to be a full partner in this endeavor. Indeed, the SPP is unlikely to be successful without the participation of private sector stakeholders.

It is hoped that negotiations in the OEWG will be purposeful, effective and expeditious, as well as inclusive of all stakeholder perspectives, including civil society and the private sector. Given the models of IPCC and IPBES, there is much experience to draw from in designing the structure and governance of the proposed SPP. This should help focus discussions at the OEWG more on the substantive issues (functions, role of WHO, other UN agencies and other stakeholders, resources, etc.). If the process is in accordance with the mandate, it may even be possible for

the OEWG to complete its work before the deadline of end-2024.

But whether the OEWG completes its task early or not, the important thing is to aim for a well-thought-out proposal, acceptable to all. For that to happen, leading countries – such as members of the G20 – will need to provide a determined push, both individually and collectively. With six of the G20 countries among the top 10 most pollution-affected, the G20 should take particular interest in establishing the proposed SPP. India, as a country directly affected by pollution-related disease, and the next G20 Chair, could play a leadership role in this regard.

The organization we represent – the Global Alliance on Health and Pollution (GAHP)[2] - works to reduce death and illness caused by all forms of toxic pollution. As such, and while we wait for next steps for the OEWG, GAHP stands ready to support and participate in the OEWG. We do so with the knowledge that establishing the proposed SPP on chemicals, waste and pollution prevention would not only serve our core mission, but also ensure a healthier planet and healthier future generations. We look forward to collaborating with other stakeholders to bring the proposed SPP into being as expeditiously as possible, and to participating actively in its work, once it is established.

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Endnotes

1 EPA's International Priorities, United States Environmental Protection Agency, https://www.epa.gov/international-cooperation/epas-international-priorities.

2 Details are available at https://gahp.net/.