



Open letter to Mr Achim Steiner, Executive Director of UNEP, Dr José Graziano da Silva, FAO Director-General of FAO, and Dr Margaret Chan, Director-General of WHO on the occasion of the fourth session of the International Conference on Chemicals Management

We, Toxicologists and Health Professionals, call for a global elimination of Highly Hazardous Pesticides

Many pesticides pose a threat to human health and the environment and result in heavy costs to societies. Due to their extensive use over a long period of time, highly hazardous pesticides (HHPs)¹ are now widely dispersed throughout ecosystems globally. Pesticides are found in human bodies and other living organisms, food and water, soil, and in the air.

Early statistics from the World Health Organisation (WHO) indicated that about 200,000 people were being killed worldwide and as many as 25 million agricultural workers in the developing world were suffering from occupational pesticide poisoning, every year.² In the decades since that estimate, surveys have indicated that occupational poisoning is increasing.³ Official studies grossly underestimate these numbers. It is known that many children are poisoned by pesticides but there is no estimate of numbers.⁴ UNEP's Global Chemical Outlook report points out that "Acute chemical poisoning data are highly variable and depend on the surveillance infrastructure in place in individual countries or regions".⁵ WHO acknowledges that there are no reliable estimates of pesticide poisonings and that existing estimates likely significantly underestimate the global burden.^{6 7}

¹ For more on the definition and history of HHPs, please refer to the PAN International List of HHPs, available at <http://pan-international.org/>. The FAO/WHO Joint Meeting on Pesticide Management first used the term "HHPs", and identified criteria for HHPs, which PAN since expanded to include important criteria missing from the JMPM definition, such as endocrine disrupting properties and inhalation toxicity.

² Jeyaratnam, J. (1990): Acute Pesticide Poisoning: A Major Global Health Problem. *World Health Statistics Quarterly* 43, no. 3 (1990): 139-44.

³ The figure of 25 million was based on an average of 3 percent of agricultural workers in low-income countries suffering one episode of pesticide poisoning per year. However recent surveys show that figure may be very much higher now, with, for example, acute occupational pesticide poisoning amongst young male Korean farmers reported to be 24.7%. [Lee WJ, Cha ES, Park J, Ko Y, Kim HJ, Kim J. (2012): Incidence of acute occupational pesticide poisoning among male farmers in South Korea. *Am J Ind Med* 55(9):799-807.]

⁴ Watts M. (2013): Poisoning Our Future: Children and Pesticides. Pesticide Action Network Asia and the Pacific, Penang.

⁵ Prüss-Ustün et al. (2011): Knowns and unknowns on burden of disease due to chemicals: a systematic review. *Environmental Health* 2011, 10:9. See also: United Nations Environment Programme (2015): *Global Chemicals Outlook Towards Sound Management of Chemicals*, p. 57. United Nations Pubns, 2015.

⁶ Thundiyil, J.G., Stober, J., Besbelli, N., Pronczuk, J. (2008). Acute Pesticide Poisoning: A Proposed Classification Tool. *Bulletin of the World Health Organization*. Available from <http://www.who.int/bulletin/volumes/86/3/07-041814/en/>.

A recent meta-analysis of worldwide literature on pesticide self-poisoning resulted in a conservative estimate of suicides by pesticides accounting for approximately 33% of suicides globally.⁸ According to this WHO study restricting access to the means of suicide such as pesticides is a key element of suicide prevention efforts as pesticides are among the most common methods of suicide globally.

Further, Maximum Residue Limits, Acceptable Daily Intakes and Maximum Allowable Concentrations support a belief in “safe” levels of exposure that do not exist. Because of their inherent toxicity to humans and/or biological systems, the risks associated with HHPs cannot be managed safely, and thus ‘risk management’ approaches do not effectively prevent their disastrous effects on the health of humans and the environment, including the widespread disappearance of honeybees.⁹

Current risk assessment is largely based on the idea that “the dose makes the poison.” However, recent advances in science have demonstrated that chronic exposure to low, so-called “non-toxic” doses and to mixtures means there is unacceptable uncertainty in identifying safe levels to exposure to carcinogens, reproductive toxins, neurodevelopmental toxins and endocrine disruptors.

Existing regulatory guidelines are insufficient for hazardous effects such as immunotoxicity, endocrine disruption and postnatal reproductive toxicity effects.

There is growing evidence that the health of future generations may be severely jeopardized by HHPs. The foetus and the newborn child are sensitive to the harmful effects of many pesticides and other environmental contaminants, which may irreversibly influence their developmental processes.

Our understanding of the many ways in which chemicals can affect humans and the environment is still unfolding. For instance, our understanding of the fact that environmental chemicals can interfere with hormone action has developed slowly over the past half-century,¹⁰ but is still insufficiently defined for regulatory systems to take appropriate action on them.

For the above reasons, it is ethically important for us, as concerned toxicologists and health professionals, to call for the immediate global elimination of HHPs. Their production, distribution and use must be stopped to protect our children and the succeeding generations from an impending toxic tragedy.

⁷ Goldman. L. (2004). *Childhood Pesticide Poisoning: Information for Advocacy and Action*. United Nations Environment Programme and the World Health Organization. Available from <http://www.who.int/ceh/publications/pestpoisoning.pdf>

⁸ WHO (2014): Preventing Suicide: A Global Imperative. World Health Organization, Geneva.

⁹ Some of the target sites of pesticides (proteins and enzymes) have been conserved throughout the evolution of species and can be found in very different organisms, for example humans, fruit flies, yeast and bacteria. Thus it is not surprising that some pesticides are toxic for non-target species.

¹⁰ Endocrine Society (2015): Position Statement: Endocrine-Disrupting Chemicals in the European Union.

http://www.endocrine.org/~media/endosociety/Files/Advocacy%20and%20Outreach/Position%20Statements/2015/Position_Statement_EDC_EU.pdf

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