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Implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes

Note by the Secretary-General*

The Secretary-General has the honour to transmit to the General Assembly the report of the Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes, Baskut Tuncak, submitted pursuant to Human Rights Council resolution [36/15](#).

* The present report was submitted to the conference services after the deadline in order to reflect the most recent developments.



Report of the Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes

Summary

In the present thematic report to the General Assembly, submitted pursuant to Human Rights Council resolution [36/15](#), the Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes, Baskut Tuncak, takes the opportunity to remind the international community of the State's duty to prevent exposure to hazardous substances and wastes (toxics). The Special Rapporteur outlines the legal basis of that duty and highlights how exposure prevention is the exception, leading to existential threats to life and health, including reproductive health. The report concludes with recommendations.

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I. Introduction

1. Nearly 60 years ago, in her book *Silent Spring*, Rachel Carson warned: “If we are going to live so intimately with these chemicals, eating and drinking them, taking them into the very marrow of our bones, we had better know something about their nature and their power.” While the dangers of exposure to toxic pollutants, whether synthetic chemicals used in workplaces or intentionally added to products or wastes that contaminate food, air, soil and water, have been known for decades, the magnitude and impact of a rapidly toxifying world continues to expand faster than measures to prevent exposure.

2. Exposure to hazardous substances, including various pollutants that contaminate food, air and water, infringes on numerous human rights, including the rights to life, health and a life with dignity. Every State has binding human rights obligations that create a duty to take active measures to prevent the exposure of individuals and communities to toxic substances. This duty is essential to ensuring that every person enjoys not only the rights mentioned above, but also the rights to a healthy environment, safe and healthy work environment, safe water, clean air and adequate food and housing, among others.

3. Nonetheless, people and peoples are knowingly exposed to a multitude of hazardous substances, and that could be prevented. This toxic cocktail is conservatively calculated as being the single largest source of premature death in the world, and it causes and contributes to a silent pandemic of diseases and disabilities. While this toxification of people and the planet grows, States, businesses and health experts are locked in years-long or decades-long debates over when and to what extent exposure to various hazardous substances are acceptable. As they endlessly debate what should be considered clean, healthy or adequate, toxic exposure erodes, abuses and violates the rights to air, water, food and safe workplaces, particularly of children and other susceptible groups. Relief and remedy, to the limited extent that it materializes, is often insufficient and comes too late.

4. When viewed through the lens of children’s health and reproductive health, the importance and gravity of preventing exposure to toxic substances comes further into focus. Declining fertility is only one of many concerning health trends linked to toxic exposure that persist because States have not prioritized exposure prevention.

5. In the present report, the Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes, Baskut Tuncak, takes the opportunity to remind the international community of the State’s duty to prevent exposure to hazardous substances and wastes. He outlines progress made in the prevention of such exposure, as well as examples of recent challenges, such as pesticides, industrial chemicals, air pollution, plastic “waste” and contaminated drinking water. He concludes with recommendations for various stakeholders.

II. Duty to prevent exposure

6. Every State has an obligation to prevent exposure to hazardous substances and wastes (toxics) under international human rights law.¹ This obligation derives implicitly, but clearly, from any number of rights and duties enshrined within the global human rights framework, under which States are obligated to respect and fulfil recognized human rights, and to protect those rights, including from the implications of exposure to toxics. Those rights include the human rights to life, health, safe food and water, adequate housing, and safe and healthy working conditions.² The duty to prevent exposure is further reinforced by the national and regional recognition of the right to a safe, clean, healthy and sustainable environment, including clean air. The existence of the State's duty to prevent exposure is reinforced by the right to full respect for the bodily integrity of the person, which helps to provide context to the extent to which every person should have the right to control what happens to their body (see [A/HRC/39/48](#)). In the present section, the duty to prevent exposure in the context of several rights and principles is explored.

7. At the outset, it should be emphasized that the primary duty to prevent human rights violations rests with States, irrespective of the increasing recognition of the responsibilities of business enterprises and other non-State actors ([A/HRC/RES/24/16](#), para. 2). States are legally bound to take reasonable steps to prevent human rights violations, which includes the obligation under international law to protect against human rights abuses by third parties, including private actors. States may violate their obligations under international human rights law when they fail to take appropriate steps to prevent, investigate, punish, redress and remedy abuse by private actors. No State can meet its human rights obligations without preventing human exposure to pollution, toxic industrial chemicals, pesticides, wastes and other substances with intrinsic hazards.³ Independent of State efforts, and particularly where the State is unable or unwilling to exercise its duty, business enterprises have a responsibility to prevent exposure to hazardous substances resulting from their activities and/or business relationships.⁴ This responsibility is independent of whether or not adequate legislation is in place to protect human rights.

A. Protect the human rights to life, health and a life with dignity

8. The toxification of our planet and bodies constitutes what is arguably one of the most underappreciated threats to the ability of present and future generations to enjoy their human rights to life, health and a life with dignity.

¹ Consistent with the previous reports of the current mandate holder and those of his predecessors, hazardous substances and wastes are not defined strictly; they include, inter alia, toxic industrial chemicals and pesticides, pollutants, contaminants, explosive and radioactive substances, certain food additives and various forms of waste. For ease of reference, the Special Rapporteur refers to hazardous substances and wastes as “toxics”, and therefore, in the present report, the term “toxics” (or “toxic substances”) should be understood to also include non-toxic but hazardous substances and wastes.

² In its resolution [42/21](#) of 26 September 1919, the Human Rights Council recognized the duty of States to prevent unsafe occupational exposure to hazardous substances and the corresponding responsibility of businesses.

³ Every country has recognized either the right to life or the right to the highest attainable standard of health under international human rights law, with most having recognized both.

⁴ Under the Guiding Principles on Business and Human Rights: Implementing the United Nations “Protect, Respect and Remedy” Framework ([A/HRC/17/31](#), annex), where a business enterprise causes or may cause an adverse human rights impact, it should take the necessary steps to cease or prevent the impact.

9. In 2015, pollution killed an estimated 9 million people, accounting for approximately 16 per cent of all deaths worldwide, and this is likely to be an underestimation, given the known information gaps.⁵ This is three times more than AIDS, malaria and tuberculosis combined and 15 times more than from wars and other forms of violence.⁶ Pollution, more specifically human exposure to it, is estimated to be the single largest source of premature death in the world today.⁷

10. The human right to life concerns the entitlement of individuals to be free from acts and omissions that are intended or may be expected to cause their unnatural or premature death, as well as to enjoy a life with dignity.⁸ States are obligated to establish a legal framework as may be necessary to ensure the full enjoyment of the right to life by all individuals.⁹ States must adopt any appropriate laws or other measures in order to protect life from all reasonably foreseeable threats emanating from private persons and entities.¹⁰ Of considerable importance is that States parties may be in violation of their obligations concerning the right to life even if such threats and situations do not result in loss of life,¹¹ which highlights the interrelatedness of the right to life and bodily integrity, which is outlined below.

11. The rights to life and a life with dignity are inseparable from the right to the highest attainable standard of health, which requires the prevention of exposure. The right to the prevention of diseases is a fundamental aspect of the right to health.¹² Accordingly, the right to health requires the prevention and reduction of exposure to hazardous substances.¹³ The Committee on Economic, Social and Cultural Rights lists prevention before reduction, indicating that prevention is paramount to reducing exposure and that reduction is not an alternative to prevention. Exposure reduction is undertaken through exposure prevention, reducing overall exposure.

12. The Human Rights Committee recently recognized that pollution threatens the right to life and in particular the right to a life with dignity.¹⁴ Consistent with this interpretation, in the landmark decision by the Human Rights Committee in *Cáceres et al. v. Paraguay*, the Committee found that Paraguay had violated the rights to life and a life with dignity of over 20 people who were exposed to toxic pesticides (CCPR/C/126/D/2751/2016, paras. 7.3 and 7.5). The contamination was found to have caused the death of one person and poisoned 22 other inhabitants of a community. The finding reinforced that the State's failure to prevent exposure can be a violation of the right to life and a life with dignity, even in absence of premature death.

13. Protection of the rights to life and a life with dignity requires that States ensure that individuals and communities are protected from exposure to hazardous substances, such as pollution and toxic chemicals in products and occupational settings (*ibid.*). Critically, the Human Rights Committee recognized that States may be in violation of the rights to life and a life with dignity when they take insufficient measures or otherwise fail to take measures to prevent chronic exposure to hazardous substances, whether from the environment, workplace, consumer products or other sources. Chronic exposure to hazardous substances can impinge on a person's ability to live

⁵ Philip J. Landrigan and others, "Lancet Commission on pollution and health", *The Lancet*, vol. 391, No. 10119 (February 2018).

⁶ *Ibid.*

⁷ *Ibid.*

⁸ Human Rights Committee, general comment No. 36 (2018) on the right to life, para. 3.

⁹ *Ibid.*, para 18.

¹⁰ *Ibid.*

¹¹ *Ibid.*, para. 7.

¹² Committee on Economic, Social and Cultural Rights, general comment No. 14 (2000) on the right to the highest attainable standard of health, para. 16.

¹³ *Ibid.*, para. 15.

¹⁴ Human Rights Committee, general comment No. 36.

with dignity and decency, to fully develop their personality and physical capabilities, to live without humiliation and/or to participate in community with others.

14. The Human Rights Committee also found that toxic exposure can violate the right to private and family life enshrined in article 17 of the International Covenant on Civil and Political Rights. It noted that a violation may exist when pollution has a direct, serious impact on the right to private and family life and the home. Pollution and environmental degradation can affect the well-being of an individual (*ibid.*, paras. 7.3, 7.5 and 7.8).¹⁵ The decision of the Human Rights Committee is also relevant to the interpretation of rights contained in the Convention on the Rights of the Child and the International Covenant on Economic, Social and Cultural Rights because it is based on the impacts on health for individuals, including children, as well as the pollution of rivers from which they fish, the wells from which they drink and the fruit trees, crops and livestock on which they feed (*ibid.*, paras. 7.3, 7.5 and 7.6).

15. Although the Human Rights Committee cites three banned pesticides, in the view of the Special Rapporteur, the decision – that States have a duty to prevent exposure to hazardous substances – should be considered to extend beyond pesticides. Furthermore, the decision should not be limited to hazardous substances banned under national or international law, given that many hazardous substances are still neither banned nor restricted under either. The Special Rapporteur considers exposure of individuals and communities to various hazardous substances and wastes to be an infringement of the rights to life and dignity of victims, and it should be considered a *prima facie* failure of the State's duty to prevent exposure.

16. In *Cáceres et al. v. Paraguay*, the burden of proof did not lie solely with the alleged victims. Recalibration of the burden of proof towards those with greater access to information is a good practice, which the Special Rapporteur has emphasized in previous thematic reports.¹⁶ Placing the burden of proof on victims of exposure promotes impunity and denies access to justice. Victims rarely have equal access to information or the potential power of the State to compel the generation or production of information. In cases in which decisions of violations depend on information available only to the State party or business implicated, the human rights treaty bodies and judicial bodies should consider the allegations to be well founded if the State party does not rebut them by providing satisfactory evidence and explanations.

17. The rights to life, health and a life with dignity, among others, require that States prevent exposure to toxic and otherwise hazardous substances and wastes. Every State must have in place comprehensive laws and effective enforcement mechanisms to prevent exposure to all forms of pollution, toxic chemicals and other hazardous substances that can be a reasonably foreseeable threat to the health, life and dignity of the individual, including exposure caused by private actors.

B. Respect and protect bodily integrity

18. The autonomy of the individual and various freedoms, including control of what happens to one's own body, is fundamental to human rights law, particularly to the

¹⁵ See also European Court of Human Rights, *López Ostra v. Spain* (application No. 16798/90), judgment of 9 December 1994.

¹⁶ Available at www.ohchr.org/EN/Issues/Environment/ToxicWastes/Pages/Annual.aspx.

right to life with dignity,¹⁷ which is interrelated with bodily integrity (or physical integrity).¹⁸

19. The concept of “bodily integrity” underlies many of the prohibitions and freedoms found in human rights law. While not defined under either the International Covenant on Civil and Political Rights or the International Covenant on Economic, Social and Cultural Rights, bodily integrity is fundamental to the rights to security of the person, freedom from torture and cruel, inhuman and degrading treatment, privacy, the highest attainable standard of health and decent work, among others.¹⁹ Freedoms from scientific experimentation without consent and non-therapeutic medical interventions without consent are grounded in bodily integrity.

20. Bodily integrity is also established in certain national laws and legal traditions. For example: “The common law action of battery developed out of the law’s recognition of an individual’s interest in personal autonomy and bodily integrity – that is, the right of a person to participate in and make decisions about his own body.”²⁰ The European Court of Human Rights has recognized that the physical integrity of the person is covered by their right to private life.²¹

21. Human exposure to toxics clearly has implications for bodily integrity. Poisoning another through high-level (acute) exposure to a hazardous substance is an unquestionable violation of bodily integrity. In addition, this right is also affected by the implications of regular exposure to lower levels of toxic substances (chronic exposure) that may or may not cause or contribute to adverse health impacts, from cancer to impaired reproductive health to reduced intelligence.

22. Our bodies carry a tremendous burden of toxic chemical exposure. Hundreds of toxic and otherwise hazardous substances are detected in human blood and urine, umbilical cords and placental tissue and even in human cells themselves. Where infringements of bodily integrity have been deemed permissible by law, it is typically argued that there is an overriding public interest justification. Yet no legitimate public interest justification is offered for the vast majority of cases of preventable exposure to hazardous substances today.

23. The Special Rapporteur has raised the implications and impacts of exposure for bodily integrity in several reports, including on the rights of the child and workers (see [A/73/567](#), [A/HRC/39/48](#), [A/HRC/39/48/Corr.1](#) and [A/HRC/33/41](#)). In the context of childhood exposure, the phenomenon of children being born “pre-polluted” raises significant concerns regarding the adequacy of State efforts to protect the physical integrity of women of reproductive age (see [A/HRC/33/41](#)). In the context of exposure to pollution and other hazardous substances, however, bodily integrity has much wider implications for the global population as a whole.

24. Bodily integrity is closely linked with the right to life. Individuals and communities who cannot, through the actions or inactions of a State or business

¹⁷ Human Rights Committee, general comment No. 36, para. 9.

¹⁸ The term “physical integrity” is often used interchangeably with “bodily integrity”, as it is here. In the present report, the Special Rapporteur uses the term bodily integrity for consistency with the most recent general comment on the right to life.

¹⁹ See for example, Supreme Court of Canada, *Rodriguez v. Attorney General of British Columbia* [1993] 3 SCR 519 (majority opinion). See also Committee on Economic, Social and Cultural Rights, general comment No. 18 (2005) on the right to work, para. 7.

²⁰ See Supreme Court of Colorado, United States of America, *People v. Medina*, 705 P 2d 961 (1985).

²¹ For example, European Court of Human Rights, *Pretty v. United Kingdom of Great Britain and Northern Ireland* (application No. 2346/02), judgment of 29 April 2002, para. 18, in which the Court indicated that article 8 protected the physical, moral and psychological integrity of the individual, including rights over the individual’s own body.

enterprise, live a life in dignity because of exposure to toxic substances, thereby lack access to conditions that would ensure a dignified life.

25. In its case law, the European Court of Human Rights has recognized the right to have one's physical integrity protected from exposure to hazardous substances and wastes. In its decisions on the justiciability of claims, however, the Court has emphasized that personal exposure to a danger that is serious, specific and/or imminent is required to constitute a violation.²² Such a reading may be appropriate for a few substances with well-characterized hazards and potential for exposure, however, for the vast majority of substances, neither hazards nor the likelihood of exposure is well characterized for current and future generations. No evidence of risk does not mean that there is no risk. Furthermore, imminent danger is highly problematic in the context of exposure to certain toxics, when diseases may not manifest for years or decades, if at all, or may act in concert with other risk factors contributing to an adverse health outcome. Narrow criteria, such as that of imminent danger, for the applicability of claims based on physical and bodily integrity regarding toxic exposure is neither just nor realistic given the current body of knowledge and most importantly given what is known to be unknown about the health impacts of exposure to hazardous substances over extended periods of time and during sensitive periods of development. To that end, the increasing recognition of the European Court of Human Rights of the importance of the principle of precaution in respecting and protecting human rights is a welcome shift.²³ The precautionary principle should – and must, in the many countries where it already appears in existing law – be taken into account to ensure the right to bodily integrity, a position backed by the World Health Organization (WHO).²⁴

26. According to WHO: “Limitations in the ability to characterize causal relationships are occasionally misinterpreted as evidence of safety. Thus, the need for more accurate scientific information has sometimes been used as a reason for inaction. The combination of rigid policy structures requiring strong evidence of risk, social attitudes and interference by vested interests often results in policymakers having to wait unreasonable lengths of time before they can commit themselves to preventive action. The past cases of lead, tobacco, asbestos and many other agents provide ample evidence of the high costs associated with waiting for convincing proof of harm. It is equally important that inadequate application of the precautionary principle should not prevent or preclude action producing important benefits for society.”²⁵

27. Physical integrity was also invoked in the case of hundreds of displaced Roma, Ashkali and Egyptian children poisoned by lead while they were housed by the United Nations in camps constructed on and near a toxic wasteland during the conflict in Kosovo.²⁶ In its opinion in *N.M. and Others v. the United Nations Interim Administration Mission in Kosovo (UNMIK)*, the Human Rights Advisory Panel noted that UNMIK “should have afforded special protection to the right to life and physical integrity of complainants as vulnerable persons, as a result of being displaced

²² See for example, European Court of Human Rights, *Balmer-Schafroth and others v. Switzerland* (application No. 67/1996/686/876), judgment of 26 April 1997.

²³ See for example, European Court of Human Rights, *Tătar v Romania* (application No. 67021/01), judgment of 6 July 2009, paras. 69 and 120.

²⁴ Marco Martuzzi and Joel A Tickner, eds., *The Precautionary Principle: Protecting Public Health, the Environment and the Future of our Children* (Copenhagen, WHO, 2004).

²⁵ Ibid.

²⁶ More information is available at www.ohchr.org/EN/Issues/Environment/ToxicWastes/Pages/LeadContaminationKosovo.aspx.

following the conflict in Kosovo and the destruction of their homes, and as members of a disadvantaged minority”.²⁷

28. The achievements of the global movement to ban tobacco smoking in public spaces is a remarkably successful example of prevention efforts to protect the right to bodily integrity. In some cases, national efforts were driven, or at least reinforced, by arguments based on the individual’s human rights to physical integrity and health.²⁸ The Pan-American Health Organization has emphasized the human rights to life and physical integrity in its work to bring a rights-based approach to the response to the hazards of tobacco use.²⁹

29. Despite a few cases that affirm the relevance of preventing and reducing toxic exposure in order to uphold the right to bodily integrity, there remains regrettably limited interpretation and application of the right in that context to date. A human rights-based approach to environmental and occupational health requires inclusion and the robust consideration of bodily integrity. This is particularly salient for how so-called “acceptable” levels of exposure are established by regulators. Problematic consideration of economic factors in the establishment of exposure standards often result in unjustified, unnecessary and preventable toxic exposure of workers and other vulnerable groups, in disregard of their human rights. With evidence mounting of the health impacts at increasingly lower levels of exposure³⁰ and of exposure to mixtures of various hazardous substances, a more robust interpretation and application of bodily integrity in the context of toxic exposure is urgently needed.

30. In the view of the Special Rapporteur, to respect and protect the right to bodily integrity as required under a human-rights based approach to hazardous substances and wastes, individuals should be able to choose what risks (i.e. with regard to exposure) they believe to be acceptable regarding their health, not the State or business enterprises. This demands much more transparency and greater realization of the right to information to prevent exposure, for both consumers and regulators (see below). It is the duty of the State and responsibility of businesses to respect and protect this aspect of personal autonomy through both their actions and inaction.³¹

31. There is also a need for better recognition and application of rights grounded in bodily integrity that are affected by the implications of exposure to toxic substances, such as freedom from torture, cruel, inhuman and degrading treatment. Article 7 of the International Covenant on Civil and Political Rights traditionally only focuses on any form of arrest, detention or imprisonment. However, just as torture and inhumane treatment are perpetrated by one person unto another, exposure to toxics is often the result of actions by one unto another. Similar to other violations of human rights that affect bodily integrity, diseases and disabilities that result from exposure to toxic substances are cruel, inhuman and degrading. They can include the excruciating pain of cancer and the suffocating torture of respiratory diseases.

²⁷ Human Rights Advisory Panel, *N.M. and Others v. UNMIK*, case No. 26/08, opinion of 26 February 2016, para. 222. Available at www.unmikonline.org/hrap/Eng/Cases%20Eng/26-08%20NM%20etal%20Opinion%20FINAL%2026feb16.pdf.

²⁸ For example, the case by an employee against PTT Post (Netherlands) to enforce a completely smoke-free environment, in which the court found in favour of the employee; see Tony Sheldon, “Dutch workers entitled to smoke-free conditions, court rules”, *British Medical Journal*, vol. 320, No. 7244 (May 2000).

²⁹ Pan-American Health Organization, “Human rights and health: persons exposed to second-hand tobacco smoke”, 2008.

³⁰ See for example, Bruce P. Lanphear, “Low-level toxicity of chemicals: no acceptable levels?”, *Plos Biology*, vol. 15, No. 12 (2017).

³¹ In the draft principles on human rights and the environment (E/CN.4/Sub.2/1994/9, annex I) proposed by the first holder of the mandate of Special Rapporteur on human rights and the environment, Fatma Zohra Ksentini, the right to freedom from pollution was proposed.

32. The violence from exposure to toxics also extends beyond the direct impacts of diseases and disabilities that may be seen and felt. Toxic industrial chemicals, pesticides, various pollutants, radiation and other hazardous substances inflict invisible violence through the mutation of DNA, damage to cellular structures and interference with the normal biochemical systems on which human life, health and development depend. In many ways, such exposure violates sexual and reproductive rights, including with regard to the effects thereof, such as the inability to carry pregnancies to term and infertility. Toxic exposure also disproportionately inflicts cancers and other diseases on some vulnerable groups, including children and people living in poverty.

33. Actions that may be reasonably foreseen as likely to expose human beings to toxics, whether in the form of visible pollution discharged into waterways or invisible molecules from disintegrating household products, are also an affront to human dignity and bodily integrity. There is a need to move beyond the narrow interpretations of infringements of freedoms from torture, cruel, inhuman and degrading treatment as relating only to situations in which, for example, an individual is imprisoned or is otherwise affected by the actions of a public official. Such a limited interpretation discounts a fundamental human freedom, control over one's body. It deprives victims of justice and remedy. It denies them due recognition of the torturous conditions that they suffer as a result of such illnesses, resulting in an undignified life, and it inflicts the cruelty of implicit encouragement of the continuation of such exposure and future violations and the degradation of having no control over what toxic substances enter their bodies.

34. In the case of *Cáceres et al. v. Paraguay* before the Human Rights Committee, the complainants alleged cruel, inhuman and degrading treatment owing to their exposure to hazardous pesticides, implicitly arguing violations of their bodily integrity (see CCPR/C/126/D/2751/2016). Having found a violation of the rights to life, a life with dignity and private life, the Committee did not give an opinion on this question. While the claim of a violation of the right to freedom from cruel, inhuman or degrading treatment remained unaddressed, in the view of the Special Rapporteur, the Committee's finding of a violation of the right to private life in the context of the physical and psychological impacts of exposure to hazardous substances makes such a claim well founded.³²

C. Ensure equality and prevent discrimination

35. Human rights are anchored in universal values and principles such as equality, non-discrimination, the dignity of individual human beings, justice and accountability. Those who are the most vulnerable, most marginalized and most susceptible to toxic exposure face disproportionate threats to life, health and bodily integrity.

36. Billions of people suffer the indignity and injustice of relentless exposure to toxics in the air, water and food upon which they depend. Those who are most affected are often the most vulnerable members of society, and their vulnerability is exploited by an often disingenuous narrative of necessity, including economic development, jobs and national sovereignty. Those whose rights are most violated by exposure to toxics are those living in poverty, minority groups, migrants, workers, indigenous peoples and other vulnerable or susceptible groups, with highly gendered impacts.

37. Policies that directly or indirectly permit hazardous substance exposure perpetuate discrimination and exploitation. Toxic exposure is discriminatory against

³² For similar reasons, a claim that the victim's bodily integrity was violated is also well founded, in the view of the Special Rapporteur.

those who are genetically more susceptible to developing diseases and disabilities. People who are malnourished are more affected by exposure to toxic pollution and chemicals, which can compound other challenges, especially those faced by people of low income or living in poverty. Pollution often affects those living in poverty the most, in high-income, middle-income and low-income countries alike,³³ and there is extensive research indicating that people in lower-income communities are disproportionately subjected to greater danger from toxic exposure. Whether from the perspective of gendered impacts or the vulnerability of different age groups, the adverse impacts of exposure can be discriminatory. Those who have the least financial or political power are typically the least likely to be in a position to defend their human rights from the threat of exposure to toxics.

38. Every child has the right to be heard on matters affecting their rights, which must therefore include matters relating to their exposure to toxic substances (see [A/HRC/33/41](#)). Over 200 hazardous substances have been detected in umbilical cords and placentas, including toxic constituents of consumer products, food packaging and air pollution (*ibid.*). Children are not only exposed during sensitive developmental periods to a multitude of substances with known and unknown toxicity, from a plethora of sources, but they are also exposed at higher levels than adults (*ibid.*). The consequences of exposure to various hazardous substances are typically the worst for children. Millions of children are deprived their right to maximum development by exposure to hazardous substances before they can even begin to exercise their fundamental right to be heard, with parents effectively denied essential elements to “speak” on their behalf to prevent exposure.

39. In the Declaration of the United Nations Conference on the Human Environment, of 1972, the Conference states that policies promoting or perpetuating apartheid, racial segregation, discrimination, colonial and other forms of oppression and foreign domination stand condemned and must be eliminated. While many States have banned or restricted the most toxic of substances, they continue to export the same substances to foreign countries, including those with far weaker governance structures to prevent exposure. The exporting countries should not assume that the prior informed consent of the importing country exonerates them from participating in discrimination or exploitation. Importing Governments may not share similar values, measures of anti-corruption or democratic ideals, let alone have the capacity to prevent exposure. In addition, countries that export such restricted substances, typically wealthier nations, may later import products containing or composed of those highly hazardous substances, in which case workers and local communities in importing countries have been exposed in ways deemed unacceptable in the exporting country. To profit from such double standards is a form of exploitation, which the global community has only marginally addressed through global treaties and other instruments.

40. Prevention of exposure is required to prevent discrimination and to ensure that everyone can enjoy a healthy environment and safe and healthy working conditions. Unless prevention of exposure is required as the norm, the most vulnerable will continue to bear the brunt of toxic exposure in the production, consumption and disposal lifecycles of our economy. Discrimination is not limited by borders. The export of banned or restricted substances for use in importing countries that cannot or do not have adequate assurances that human rights will be respected, protected and fulfilled is exploitation and may violate the principle of non-discrimination.

³³ For example, in one of the world’s wealthiest countries, 70 per cent of coal combustion waste, containing toxic substances linked to cancer, reproductive problems and developmental disorders, is reportedly dumped in low-income communities ([A/HRC/38/33/Add.1](#), para. 68).

D. Realize the right to information

41. The right to information is a gateway to all human rights that are affected by the implications of exposure to toxics. To respect, protect and fulfil human rights affected by hazardous substances, the right to information requires that States, *inter alia*, generate, collect, assess, update and effectively communicate information, particularly to those disproportionately at risk of adverse impacts (A/HRC/30/40, para. 99). In discharging their duty to conduct human rights due diligence, businesses are responsible for identifying and assessing the actual and potential impacts of hazardous substances and wastes, either through their own activities or as a result of their business relationships, and for communicating information to other businesses, Governments and the public effectively (*ibid.*, para. 100).

42. Consent is critical for human autonomy and bodily integrity, and it depends upon the quality and quantity of information given. Perversely, consent, through the provision of information on health hazards to those exposed to toxics, may be used as a defence by perpetrators, shifting the burden onto potential victims of abuse to understand the hazards and risks of exposure and to defend their own human rights from infringements by exposure to hazardous substances. Given the breadth of chemicals used in everyday products and the number of pollutants that may contaminate the air, water, soil and food, it is unreasonable to expect individuals to determine what danger they are comfortable with and to be able to regulate what enters their bodies.

43. That is why access to information alone is not a substitute for State action to prevent exposure. Even if fully informed, many people are unable to effectively use information, owing to limited resources to ensure meaningful participation and access justice, corporate capture of Governments and institutions, corruption and economic insecurity and social pressures that prevent people from raising concerns. Vulnerable groups are often particularly unable to engage in highly technical and obscure debates regarding potential impacts, “safe” levels of exposure, or their right to a “healthy” environment. Children, whose rights to life, health and maximum development are infringed upon during the most sensitive postnatal periods, are not able to effectively use information to exercise their rights. Therefore, States discharge their human rights obligations not when they provide access to information, but rather when they generate, or compel responsible third parties to generate, the information necessary to understand the hazards and risks of exposure and then use that information to execute their duty to prevent exposure.

E. Realize the right of access to justice and an effective remedy

44. WHO estimates that over 12 million people die each year from an unhealthy environment, widely acknowledged to be an underestimation, given the information gaps on hazards and exposure.³⁴ Denied a multitude of human rights, a minuscule number of those victims – arguably none, given what is lost – receive any semblance of effective remedy. The inability to secure justice, even by the victims of the most egregious and clear cases of malicious conduct adds insult to injury. The need to establish a causal linkage between exposure to toxics and health impacts fosters impunity, making it nearly impossible for many victims to obtain justice and remedy for chronic exposure to a cocktail of toxic substances, whether they are exposed while still in the womb or later in their lifetimes. Most people do not even know that they are victims.

³⁴ See www.who.int/gho/phe/en/.

45. The impacts of exposure, particularly during sensitive periods of development, are often irreversible, debilitating and deadly. No less significant than the physical impacts are the impacts on mental health, including the emotional trauma for people exposed to toxic substances and for their families. The Special Rapporteur recalls the testimonies, which he heard during one of his official country visits, of several victims' family members who blamed themselves for buying toxic consumer products that killed or injured their parents or children (see [A/HRC/33/41/Add.1](#)), and he recalls the numerous victims and their families who confided that no amount of compensation or health care would come close to replacing what they had lost.

46. The right to an effective remedy for violations requires non-repetition, or "indirect prevention" (see [A/HRC/30/20](#)). To be a truly effective remedy, non-repetition requires the prevention of exposure at both the individual and population levels. Eliminating the production, use and emission of hazardous substances, in parallel with a transition to a circular economy, is required to ensure that the abuse is not repeated. In addition, both remediation of contamination and efforts to prevent further contamination should be applied. Without the remediation of existing contamination, there is a grave risk of ongoing human rights violations. Without prevention of further contamination, the technical and financial challenge of clean-up, particularly for low-income and middle-income countries, will continue to grow. Prevention of exposure is the only truly effective remedy in the context of toxic substances.

47. Without exposure prevention, States are condoning impunity for the violent and often preventable harms wrought by toxic chemicals, pollution and other hazardous substances. Although legal liability is a strong deterrent for preventing the use and release of toxic substances, a "damage and sue" model of protection, one that favours self-regulation in combination with the threat of legal liability, is not a human rights-based approach. Mechanisms to access justice and remedy for victims exposed to hazardous substances are incomplete without strong regulatory regimes to protect life and health from exposure to toxics.

48. States must end the cycle of death, disease and disability caused by business entities that contribute to toxic exposure and must adopt and implement policies for a non-toxic environment, to ensure an effective remedy. The impunity for toxic exposure-related death and disease must end. Ending impunity with compensation and apologies will never be sufficient. As part of the right to an effective remedy, States must prioritize the establishment and maintenance of measures to prevent exposure, which include measures to eliminate and reduce the use of toxic substances and the emission of toxic pollution and to remediate contaminated sites. Measures must be taken to prevent extraterritorial exposure, including by ending the manufacture and export of toxic chemicals that are restricted from use domestically.

III. Exposure prevention in practice

49. Since Rachel Carson's warning about the risks of toxic substances in 1962, certain States have taken positive steps towards preventing individual and community exposure to hazardous substances and wastes.³⁵ States have enacted laws to reduce emissions of harmful pollutants, restricted certain toxic chemicals in consumer products, developed regulatory and enforcement agencies, generated fundamental information about pollutant releases, human exposure and the intrinsic health hazards of substances, assessed impacts and taken many other fundamental steps towards preventing exposure (see [A/HRC/36/41](#)).

³⁵ A good example is Sweden's national objective of a non-toxic environment ([A/73/567](#), para. 12).

50. While those welcome efforts have helped, they have been ultimately insufficient in preventing exposure at large in order to protect life, health and human dignity, and they have only marginally addressed the injustice and discrimination related to exposure to toxics. The health trend evidence shows that such exposure is a major contributor to a globally rising incidence of diseases, disabilities and altered development.

51. A nationwide study of the United States reported a nearly 50 per cent increase in childhood cancers since 1975.³⁶ Breast cancer rates have increased significantly since the Second World War.³⁷ Asthma has been increasing since the early 1980s across all age, sex and racial groups.³⁸ Type 2 diabetes and puberty is being observed at increasingly young ages. Lower intelligence scores have been observed in children exposed to certain toxics. Throughout this period, there has been exponential growth in chemical production and use. An international study of adverse health impacts showed that cases of environmental exposure arising from toxic substances in the environment and consumer products, rather than genetics, are the most significant factors in observed impacts.³⁹

52. Studies continue to demonstrate the potential impacts on fertility and human reproduction of an increasingly toxic planet and population, since the first studies 25 years ago showed that male sperm quality had declined appreciably during periods of increasing exposure to hazardous substances in the environment.⁴⁰ An analysis of the metadata in one of the most definitive analyses to date on declining sperm quality,⁴¹ conducted in 2017, revealed a “significant overall decline” in sperm concentrations and total sperm counts, with declines of 52 to 59 per cent between 1973 and 2011 in certain countries (see figure below). Whereas many of the men were found to have sperm counts above the level considered to be fertile, the authors noted that there was no indication that the decline was stopping or “levelling off”, strongly suggesting that an increasing number of couples will struggle with fertility. In addition to the existential threat of declining sperm quantity and quality, there are profound questions of inequality and discrimination in terms of who may be able to have children in the future.

³⁶ “Childhood cancer”, in A. M. Noone and others, eds., *SEER Cancer Statistics Review 1975–2015* (Bethesda, Maryland, National Cancer Institute, Surveillance, Epidemiology and End-Results Programme, 2018).

³⁷ Janet M. Gray and others, “State of evidence 2017: an update on the connection between breast cancer and the environment”, *Environmental Health*, vol. 16, No. 94 (2017).

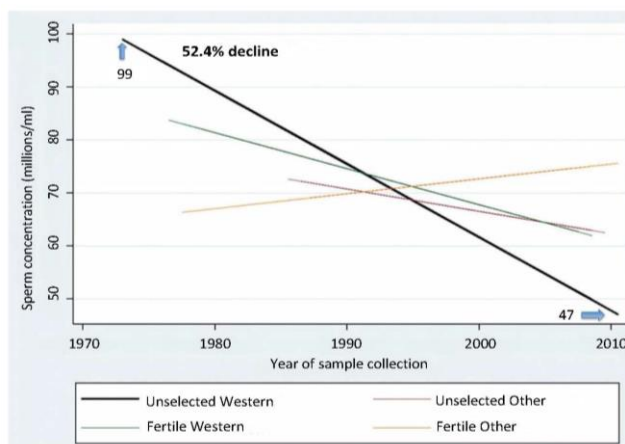
³⁸ See www.aafa.org/asthma-facts/.

³⁹ Niels E. Skakkebaek and others, “Male reproductive disorders and fertility trends: influences of environment and genetic susceptibility”, *Physiological Reviews*, vol. 96, No. 1 (January 2016).

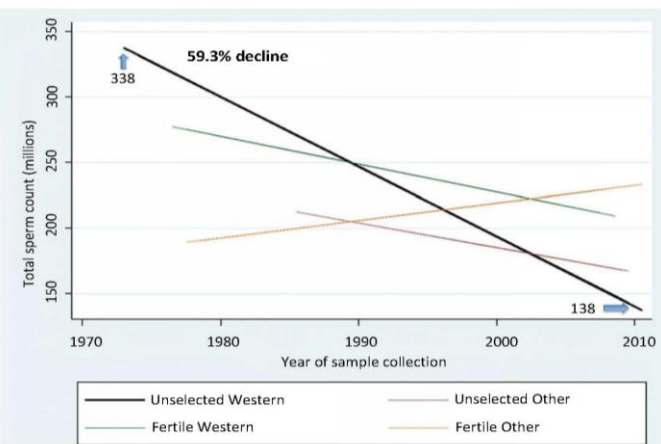
⁴⁰ Elisabeth Carlsen and others, “Evidence for decreasing quality of semen during past 50 years”, *British Medical Journal*, vol. 305, No. 6854 (September 1992).

⁴¹ Hagai Levine and others, “Temporal trends in sperm count: a systematic review and meta-regression analysis”, *Human Reproductive Update*, vol. 23, No. 6 (November–December 2017).

(a) Decline in sperm concentration



(b) Total sperm count



Source: Hagai Levine and others, "Temporal trends in sperm count".

53. The 2017 study was not designed to identify the causes of the decline in sperm count. However, the authors expressed a clear concern that exposure to a multitude of hazardous substances was contributing to the decline and stressed that research on the causes of this continuing decline was urgently needed. Accordingly, they called for prevention. However, thus far, prevention of exposure has been the exception, not the norm.

54. The toxification of the planet is rising to what should be considered another existential crisis, one that, like climate change, warrants urgent global attention. Despite the intensity of the threat, however, political will to effectively prevent and reduce overall exposure to hazardous substances has dramatically declined from already insufficient levels.

55. In recent years, environmental and occupational health protections have been deregulated, undermined or stalled in many jurisdictions, often for reasons of corruption, corporate capture and disingenuous arguments of economic growth or scientific uncertainty. Risk-based procedures have been turned into mechanisms for delaying action. Cost-benefit analyses are used to justify preventable deaths and diseases. Governments have reduced funding for national, regional and global institutions that monitor and advise on the health impacts of toxic exposure, and regulators promoting stronger protections have been replaced with individuals with close corporate ties. The critical role of science has been compromised, inherent uncertainties abused, international trade and investment agreements used to prevent protections and the public misinformed with deliberate and uncontested disinformation campaigns. Climate change "efforts" are unabashedly used to excuse the underresourcing of efforts to prevent exposure. Where some States have taken measures to prevent exposure, they have continued to manufacture and export the very same banned substances to countries where the likelihood of exposure is far greater.

56. In the view of the Special Rapporteur, the vast majority of world leaders are failing on an unprecedented scale in their duty to protect human rights by failing to prevent exposure to toxics. World leaders pledged in 2002, 2006, 2012 and 2015 to achieve the "sound management of chemicals" by 2020, without defining of what that means, without a serious plan and without any meaningful progress to date. There is no indication that what comes after 2020 will have the necessary ambition. Those world leaders, despite knowing full well that preventing exposure is fundamental to the enjoyment of human rights, continue to permit businesses to poison the public and

exploit the most vulnerable, and they fail to hold corporate actors to account for their crimes. Below are some recent examples of deficiencies by States regarding their respective duties and responsibilities to prevent exposure to hazardous substances, as well as efforts by other actors to fill the protection gap.

A. Consumer products

57. Certain sectors have demonstrated welcome ambition and leadership in preventing exposure to hazardous substances in their products and production processes, including in the activities of their suppliers. For example, the Clean Electronics Production Network⁴² has a working goal of moving towards zero exposure of workers to toxic chemicals in the electronics manufacturing process.⁴³ Retailers have also been moving beyond regulatory compliance by actively phasing out a number of unquestionably hazardous substances from consumer products, such as in cosmetics, household cleaners, furniture and clothing, to prevent exposure.⁴⁴

58. Everyday consumer products continue to be a major source of toxic exposure. For example, the mandate holder has followed the case of a large number of people in the Republic of Korea who were exposed to toxic chemicals through the sale of humidifier sterilizers that had been promoted for consumer “health” and “safety”. The products contained several hazardous substances that were not assessed for health hazards by the chemical or consumer product companies, including a pharmaceutical company. The chemical products are now acknowledged to have killed and injured numerous young children, including newborns, pregnant women, new mothers and older persons who inhaled the toxic product released from the humidifiers.

59. As many as 4 million people were exposed to the toxic humidifier disinfectants at home until the product was withdrawn in 2011.⁴⁵ According to the Government of the Republic of Korea, 490,000 to 560,000 persons suffered damage to their health.⁴⁶ According to available information, only 6,277 people applied to be recognized as victims of a toxic consumer product, and therefore only those 6,277 people are eligible for remedy. At least 1,357 cases concern individuals who died allegedly as a result of exposure to the humidifier sterilizer’s toxic chemical constituents.⁴⁷

60. The companies involved clearly failed to exercise their responsibility to undertake human rights due diligence concerning the toxic chemical ingredients of

⁴² The members of the Clean Electronics Production Network are Apple, CEREAL, Cisco Systems, Clean Production Action, Dell, the Environmental Protection Agency of the United States, Fairphone, Flex, Hewlett-Packard, the International Campaign for Responsible Technology, Intel Corporation, Inventec Performance Chemicals, the Responsible Business Alliance, Scivera, Seagate Technology, Social Accountability International, the Sustainable Purchasing Leadership Council, TCO Development, The Sustainability Consortium, University of California, Berkeley, University of California, Irvine, and the University of Massachusetts, Lowell. See www.centerforsustainabilitysolutions.org/clean-electronics#cepn-about.

⁴³ See <https://static1.squarespace.com/static/558b1fe4e4b00725460da07a/t/5d388ff55d66900001048d8f/1563987957855/CEPN+Poster+for+Print.pdf>.

⁴⁴ See <https://retailerreportcard.com/2018/10/key-findings-2018/#finding1>.

⁴⁵ Republic of Korea, Ministry of the Environment, Report on the subject of establishing disease identification and standards criteria to expand the range of health hazards caused by the humidifier sterilizer, 2017. Available at <http://library.me.go.kr/search/DetailView.ax?cid=5638910>.

⁴⁶ Ibid.

⁴⁷ The Government completed the investigations of 5,572 out of 6,277 applications by March 2019 and has been providing medical, nursing and living expenses for 798 victims with severe lung injuries, foetal damage or asthma. The Government has also been providing medical expenses for 2,010 victims who suffer from interstitial lung disease, pneumonia or bronchiectasis. See <https://spcommreports.ohchr.org/TMResultsBase/DownloadFile?gId=34617>.

the humidifier sterilizers. Instead, they violated child rights in the production, marketing, sale and usage of their highly toxic products. Prosecutors have charged 21 persons with negligent homicide. According to information received in April 2019, 18 of those charged have been found guilty, 2 not guilty, and one case was pending decision by the Supreme Court.

61. Of particular concern is the limited accountability of the chemical companies involved. In 2018, three companies, SK Chemicals, Aekyung Industrial and Emart, were fined a total of \$125,000 for the failure to label the hazardous chemical ingredients correctly. Considering that a total of 1,357 deaths have been registered in the course of four rounds of investigation, the fine amounts to approximately \$92 for each death potentially caused by the chemicals in question.

B. “Forever” chemicals

62. Nicknamed “forever” chemicals, the class of over 3,000 highly fluorinated chemicals (referred to as PFCs or PFASs) do not decompose in the environment and instead persist there, where they can remain forever. Humans are exposed to highly fluorinated chemicals through contaminated food, drinking water and air. Ninety-eight per cent of people in one country were found to have these chemicals in their bodies.⁴⁸ The most studied of these substances (PFOA) has been linked to decreased fertility, kidney and testicular cancer and thyroid problems, among other impacts. Such exposure derives from a wide range of uses, including in carpets, clothing, non-stick cookware, cosmetics, cleaners, food packaging, protective coatings and sealants, furnishings, firefighting foams, paints and papers, as well as in industrial applications. Some of these uses may be considered essential and justified for legitimate public interest benefits, but most are not.

63. Highly fluorinated substances are transported around the globe through the environment and global supply chains, resulting in global exposure. While most of the data on exposure comes from North America and Europe, it is likely that there are elevated levels of exposure in Asia and elsewhere related to manufacturing and military facilities that are undisclosed and underreported.

64. The ongoing production and use of the forever chemicals illustrates several problems with States’ current approaches to preventing exposure. The time required to assess, and then impose restrictions on, each individual substance in this class of concern would take regulators several decades, at least. While the use of some substances in the class was recently reduced in many countries, they have been replaced by alternatives that are suspected of presenting similar health risks. These points make it highly unlikely that States will be able to prevent exposure to this class of chemicals of unquestionable concern without employing a class-based approach to prevention, which is generally not the case. The companies and regulators most responsible for the manufacture and use of this class of chemicals knew about the health concerns for decades and continued to manufacture and use the toxic chemicals. In addition, the decision on what is a “safe” level of exposure is often political. For example, the Environmental Protection Agency of the United States indicates that approximately 6 million people are exposed to “unsafe” levels of the forever substances.⁴⁹ However, if safety levels were established at a level that would

⁴⁸ See <https://pfascentral.org/pfas-basics/>.

⁴⁹ Erik D. Olson, “The broken Safe Drinking Water Act won’t fix the PFAS crisis”, Natural Resources Defense Council, 12 September 2019.

protect the most vulnerable populations, the affected population would number approximately 100 million.⁵⁰

65. While the entire class of substances is of global concern due to either their persistence or their use in global supply chains, or both, only a few of the substances are covered by the narrow criteria of existing treaties. A mechanism similar to the Montreal Protocol on Substances that Deplete the Ozone Layer could help to phase out and eliminate the forever chemicals from non-essential uses globally and thereby prevent exposure.

C. Pesticides

66. Herbicides, fungicides, rodenticides and other chemicals used in food and agricultural production to kill living organisms (collectively referred to herein as “pesticides”), are generally subject to greater evidence requirements regarding health and environmental hazards compared with “industrial” chemicals. However, the heightened requirements have not dispelled concerns over the ongoing use of pesticides and the related toxic exposure.

67. There are legitimate questions and concerns surrounding the decision-making processes for risk assessment and management. A clear example of this is glyphosate, the world’s most widely used pesticide and active ingredient of Roundup, a product sold to consumers as a general use herbicide and to farmers for producing genetically modified organisms. Juries in the United States have repeatedly and consistently found companies liable for damages to victims of glyphosate exposure, including having found that the companies acted with “malice”. Recent reporting has uncovered unethical efforts by companies to ensure that the pesticide remains on the market, including by sponsoring academic research to unjustly tilt the weight of evidence, lobbying to eliminate the WHO independent risk assessment body that labelled the pesticide a possible carcinogen in 2015 and ghost-writing sections of risk assessments by regulators. There have also been concerns regarding conflicts of interest in regulatory decision-making processes.

68. Whether or not glyphosate causes cancer, what the legal trials and public debate illustrate is the public’s vast and quickly eroding confidence in the risk assessments made by decision-makers. Studies have found evidence in children of exposure to glyphosate during critical periods of their development. Doctors and other health experts have called for a precautionary ban on its further use.⁵¹

69. In the case of chlorpyrifos, the evidence of its harm to human health, particularly that of developing children, has been clear for some time, yet regulators have generally been slow to react to the clear evidence of neurological impacts and unable to set a “safe” level of exposure in air, food or water. The risks are particularly grave for children in critical periods of development, farm workers and agricultural communities. The Special Rapporteur is of the view that the ongoing use of chlorpyrifos, and the failure to act on years of evidence, is a violation of numerous internationally recognized human rights, including those enshrined in the Convention on the Rights of the Child, the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights. The European Food Safety Authority recently concluded that “there is no safe exposure level” and recommended that the European Union not reauthorize chlorpyrifos for use

⁵⁰ David Andrews, “Report: up to 110 million Americans could have PFAS-contaminated drinking water”, Environmental Working Group, 22 May 2018.

⁵¹ International Federation of Gynaecology and Obstetrics, “Removal of glyphosate from global usage”, 31 July 2019.

in 2020.⁵² The Special Rapporteur welcomes the positive preventive steps taken by various jurisdictions such as the state of California, United States, and some European countries.

70. The Special Rapporteur on the right to food has further debunked the myths that pesticides are necessary to feed the world and that their adverse impacts on health and biodiversity are somehow a cost that must be borne by modern society. She states: “Reliance on hazardous pesticides is a short-term solution that undermines the rights to adequate food and health for present and future generations” (A/HRC/34/48, para. 2).

71. Despite the current and possible future bans on the use of chlorpyrifos to protect health, it is of grave concern that some of those same jurisdictions permit the manufacture of chlorpyrifos for use outside their borders, including in countries with weaker, less transparent or essentially non-existent regulatory systems to protect human rights and the people there from toxic pesticides. States continue to export banned pesticides, industrial chemicals and chemical mixtures to countries known to have poor records of human rights and environmental protections. This contrasts with European efforts to ban the export of chemicals and devices used in human rights violations, such as the export of chemicals used in carrying out the death penalty and in torture devices.

D. Plastics

72. The entire lifecycle of plastic production, use and disposal results in adverse impacts on multiple human rights, which can constitute violations and abuses by involved States and businesses. Solving the disastrous situation of toxic plastic waste alone will not solve the problem; plastic pollutes from extraction through disposal. The extraction of natural gas and other feedstocks, the toxic emissions from plastic production facilities, the leachates of toxic chemical additives in plastics, the exposure of microplastics in water and other media and the “disposal” of waste through incineration, unsound recycling and other means all result in exposure to a myriad of substances because of plastic.⁵³ Some of the substances have clearly hazardous properties, particularly for young and unborn children, while for many others, there is inadequate information upon which to determine hazard and risk.

73. Of particular concern are microplastics. As noted by the Director of the Department of Public Health, Environment and Social Determinants of Health of WHO: “We urgently need to know more about the health impact of microplastics, because they are everywhere – including in our drinking water.”⁵⁴ Recent studies have unsurprisingly found microplastics in every person tested. Emerging proposals to restrict microplastic pollution through prevention are positive steps in respecting and protecting human rights.⁵⁵

⁵² European Food Safety Authority, “Chlorpyrifos: assessment identifies human health effects”, 2 August 2019.

⁵³ David Azoulay and others, *Plastic and Health: the Hidden Costs of a Plastic Planet* (2019).

⁵⁴ WHO, “WHO calls for more research into microplastics and a crackdown on plastic pollution”, 22 August 2019.

⁵⁵ Arthur Neslen, “European Union proposes ban on 90 per cent of microplastic pollutants”, *The Guardian*, 30 January 2019.

E. Air pollution

74. A multitude of human rights depend on clean air. As noted by the Parliamentary Assembly of the Council of Europe, clean air is a human right.⁵⁶ Air pollution is not simply a problem of particulate matter. It is also a major source of exposure to multiple types of hazardous substances, including heavy metals, pesticides and industrial chemicals. Recent research has demonstrated that air pollution affects every organ of the body, with impacts on childhood development and human reproduction, including fertility.⁵⁷

75. As with the right to safe water, the question of an acceptable level of cleanliness is of the utmost importance for realizing the human right to clean air. In the case of occupational exposure, so-called “permissible exposure levels” continue to be above standards deemed to be health protective (see [A/HRC/39/48](#)). WHO has established guidelines for various air pollutants but most States have not adopted those health protective standards. For example, applying the European Union target values, 6 per cent of the urban population in the European Union were exposed at levels of concern in 2016. However, applying stricter WHO guidelines reveals that 74 per cent of the same population is exposed to concentrations exceeding what WHO considers to be “clean”.⁵⁸

F. Heavy metals

76. While many new needs for prevention are emerging, or re-emerging, one that continues to gravely impact people and violate human rights is one of the most unquestionably toxic substances: lead. Hundreds of thousands of people suffer diseases or experience disabilities from lead poisoning everywhere, demonstrating the abysmal level of commitment and determination to preventing exposure by some politicians.

77. In the United States, lead has repeatedly poisoned low-income communities of colour. For example, water contamination crises have moved from city to city, from Washington D.C., to Flint, Michigan, to Baltimore, Maryland, to Chicago, Illinois, to Newark, New Jersey, among others. From Zambia to Peru, the recalcitrance of States to ensure that businesses remediate some of the worst lead contamination on Earth has caused generation after generation to face life with additional hurdles for learning, education and development. Those are only a few of the many cases of lead and other heavy metal contamination that are poisoning communities globally with cases of exposure that could have been and still remain to be prevented.

78. As is often the case, with time and more information, exposure levels that are considered to be safe are being adjusted lower and lower. What is considered to be a “safe” level of lead exposure has been lowered significantly over the past decades. Research suggests that exposure levels that are considered to be of concern today are in fact still too high and insufficient for preventing impacts on child development. Currently it is not possible to determine a “safe” level of exposure to lead. As more information and evidence come to light, this will probably be the case for more substances, which is why the prevention of exposure must be the priority.

⁵⁶ Council of Europe, Parliamentary Assembly resolution [2286 \(2019\)](#) on air pollution: a challenge for public health in Europe. See also [A/HRC/40/55](#).

⁵⁷ Dean E. Schraufnagel and others, “Air pollution on noncommunicable diseases”, *Chest*, vol. 155, No. 2 (February 2019).

⁵⁸ European Environment Agency, “Air pollution still too high across Europe”, 29 October 2018.

IV. Conclusions

79. Under the shadow of the existential threats of climate change and biodiversity collapse lies another, insidious extinction crisis: the toxification of our planet and our bodies. The proliferation of toxic substances poses a global threat to individuals, communities and human rights.

80. States – not businesses – have the primary duty to protect the people and peoples within their territory or jurisdiction from exposure to pollution and other hazardous substances. The only way to effectively protect against exposure is to prevent exposure. However, most States are not only failing to prevent exposure, they are also failing to acknowledge and understand the catastrophic impacts of their inaction on people both within and outside their jurisdictions. Instead, States are taking regressive steps, going in precisely the wrong direction at a moment when increased, not diminished, ambition is critically needed. Personal autonomy has steadily eroded over decades of industrialization and chemical intensification, to such an extent that even the few people who have information about their exposure do not have the ability to act on that information. Few States have had the courage to acknowledge, accept or act on their duty to prevent exposure at the level required to respect, protect and fulfil human rights in the context of toxic exposure.

81. Despite an overwhelming recognition by States under national and regional laws that a healthy environment is a right, today it is treated as a privilege. Individuals and communities are exposed to a multitude of hazardous substances, the potential adverse effects of which remain unassessed, especially with regard to the effects of combined exposure, when the substances are combined with others, and with regard to exposure during critical periods of childhood development. This incessant exposure has left most victims suffering from diseases or disabilities caused by or related to toxic exposure. They are unable to prove what should be an unquestionable infringement of any number of human rights, while the perpetrators allow further exposure with impunity.

82. Simply affixing the prefixes “safe” or “healthy” or “clean” or “adequate” will not realize the human rights to water, food, housing or a safe environment and workplace more generally, unless the prevention of exposure to hazardous substances is the norm, rather than the exception. There is a danger that the human rights to safe water, clean air, a healthy environment and safe and healthy workplace, among others, will be a false promise and never truly realized without concerted efforts to make exposure prevention an urgent priority. This requires ending the delaying game of risk assessments and cost-benefit analyses that justify exposure. States have a duty to prevent exposure to hazardous substances. This is a fundamental obligation of Governments and required of all States.

V. Recommendations

83. **States must:**

(a) **Elevate considerably the priority given to efforts to prevent exposure at the national, regional and international levels;**

(b) **Adopt laws and policies consistent with their duty under international human rights law to prevent exposure to hazardous substances, protect the most vulnerable and susceptible and prevent discrimination;**

(c) **Prohibit the export of chemicals and production processes that are prohibited from use domestically;**

(d) Prevent the import of chemicals and production processes that are prohibited in the country from which they are exported;

(e) Ensure that a strong public interest justification exists for any exposure that can only be reduced, and not prevented, and provide incentives for the development of safer alternatives that further reduce exposure;

(f) Ensure that health and safety information is never confidential. For cases of exposure that are inevitable, the maximum information must be provided to exposed populations, irrespective of cost or benefit;

(g) Establish and reinforce mechanisms to ensure that the private sector alerts them of and reports on actual or potential exposure, whether pollutant releases or chemicals in products;

(h) Include the duty to prevent exposure to hazardous substances in international instruments on environmental and occupational rights, and other subjects as relevant;

(i) Ensure that liability schemes are sufficient to compel business entities to employ considerable precaution to prevent exposure to hazardous substances as a result of their activities and the activities of those to which they are linked.

84. States should:

(a) Compel businesses, in particular chemical manufacturers, to conduct human rights due diligence for exposure to toxic substances in their activities and the activities of those to which they are linked;

(b) Evaluate risk assessment procedures and cost-benefit analyses in full cooperation with national human rights institutions, independent scientists, medical experts and civil society;

(c) Recognize that the human right to a healthy environment is the human right to a non-toxic environment;

(d) Actively protect the integrity of science and governance from corruption and conflicts of interest;

(e) Cooperate in the generation of, and with regard to access to, information about the intrinsic hazards of and exposure to substances;

(f) Invest in the capacity and technology to better prevent, detect and address toxic exposure-related issues, in particular the impacts on children's health and reproductive health in low-income and middle-income countries, as well as the development of safer alternatives;

(g) Accelerate the transition to a circular economy that effectively and equitably designs out negative externalities, including toxic exposure.

85. International and regional human rights bodies should:

(a) Re-evaluate interpretations of article 7 of the International Covenant on Civil and Political Rights to discuss the links between exposure to toxics, the health impacts and the torturous conditions that persons suffering from related illnesses endure, resulting in an undignified life, coupled with the cruelty of implicit encouragement of the continuation of such exposure, and the degrading situation of having no control over what hazardous substances enter the body;

(b) Enhance or expand efforts on human rights and the environment on the subject of human exposure to hazardous substances;

- (c) **Recognize the duty of States to prevent exposure to toxic substances in future resolutions in related areas, for example those pertaining to the sound management of chemicals and the right to a healthy environment;**
 - (d) **Accelerate action by focusing more strategically on protecting the human right to bodily integrity in the context of environmental exposure.**
-