Submission to the U.N. Human Rights Council Advisory Committee on the implications of plastic pollution for the full enjoyment of human rights

15 May 2026

The Global Alliance for Incinerator Alternatives (GAIA) works for a just, zero waste world where people are free from toxic pollution, and resources are sustainably stewarded, not burned or dumped. This submission complements that of Break Free From Plastic (BFFP).

I. Core questions

Questions 1, 5 & 8: Life-cycle effects of plastics on human rights, including vulnerable groups and specific groups of countries

Lifecycle impacts: Plastics affect human rights across their lifecycle in myriad ways. In addition to the comprehensive account in the BFFP submission, GAIA wishes to highlight the following effects:

- Raw material extraction & transport phase:
    - **Fossil feedstocks:** The extraction and transportation of fossil feedstocks for plastic production emits toxics to the air, land and water (violation of the right to a clean environment). These feedstocks also harm human health, and contribute to cancer, neurological, reproductive, and developmental toxicity, impairment of the immune system, and more.[1] Harm to human health is particularly high for communities living near extractions sites, as well as for workers involved in fossil fuel extraction (violation of the right to health).[2] Environmental defenders intervening against pollution from fossil fuel extraction also face a range of human rights violations, to the most extreme through extrajudicial killings.[3]

[1] Azoulay, D., Villa, P., Arellano, Y., Gordon, M., Moon, D., Miller, K., and Thompson, K. (2019) Plastic & Health: The Hidden Costs of a Plastic Planet, CIEL, Earthworks, GAIA, Healthy Babies Bright Futures (HBBF), IPEN, Texas Environmental Justice Advocacy Services (t.e.j.a.s.), University of Exeter, and UPSTREAM

[2] Landrigan*, P., Dunlop, S., Treskova, M., Raps, H., Symeonides, C., Muncke, J., Spring, M., Stegeman, J., Carney Almroth, B., Chiles, T., Cropper, M., Deeney, M., Fuller, L., Geyer, R., Karasik, R., Mafira, T., Mangwiro, A, Matias, D., Mulders, Y., Park, Y., Velis, C., Vermeulen, R., Wagner, M., Wang, Z., Whitman, E., Woodruff, T., Rocklöv, J. (2025) The Lancet Countdown on health and plastics

[3] Global Witness (2025) Roots of resistance: Documenting the global struggles of defenders protecting land and environmental rights

- Petrochemical refining, polymer production & product manufacturing phase:
    - **Fossil fuel extraction:** Fossil fuel extraction for plastic production involves road and industrial infrastructure building, oil spills, toxic wastewater dumping and gas flaring that have caused massive harm to the health and human rights of local communities.[4]
    - **Refinery and factory pollution:** Transforming fossil feedstocks into plastic chemicals and materials emits toxics into the environment. Communities living on the fenceline of fossil fuel refineries have the most acute and chronic exposures and endure most of the harm from hazardous chemicals from these facilities. These hazardous chemicals released during plastic production include benzene, a carcinogen found in crude oil,[5] 1,3, butadiene, ethane, styrene and toluene. They can cause both short term health effects - e.g. headaches, fatigue, weakness, memory loss, nausea, nose bleeds, and unconsciousness - and long term disease including asthma, anemia, central nervous system damage, childhood leukemia and other cancers, kidney and liver damage, sterility, and even death. The effect is even more severe on children, the elderly, and persons already suffering from sickness (violation of the right to health,).[6]
    - **Pellet spills:** Plastic polymer production and product manufacturing also generates microplastic pollution. Plastic pellets ("nurdles") are a common form of microplastics released in the production phase during spills from production facilities, during transport, or from plastic recycling facilities. Plastics are also highly flammable, so accidents involving plastic pellets can involve both fires and spills into the open environment due to container loss, as happened with the May 2021 plastic pellet fire and spill from a cargo ship off the coast of Sri Lanka. The fire released health-harming chemicals into the environment including soot, particulate matter, nitrogen oxides, sulphur dioxide, carbon monoxide, a range of hydrocarbons, dioxins, heavy metals, and furans. Meanwhile, plastic pellets sampled from the spill were found to contain lead, cadmium, bisphenol A, benzotriazole UV stabilizers, and polyaromatic hydrocarbons (PAHs). The chemicals represent both toxic chemicals present in the pellets prior to the spill as well as chemicals adsorbed during the fire, since plastics have particular affinities for a range of chemical pollutants. Local communities reported respiratory issues, skin irritation and headaches, with long-term consequences still unknown. The harm on marine life was much more immediate and visible, with significant turtles, fish, crabs and molluscs die-offs, and corresponding loss of income and livelihoods (violations of rights to health, to a clean environment, and of economic and social rights).[7]
- Product distribution and use phase:
    - **Microplastics:** Plastic materials in products, including packaging and synthetic textiles, emit microplastics throughout their lifecycle, including during their use phase. Humans

[4] See a recent example in the Amazon: Amazon Watch (2025) Drilling Toward Disaster: Amazon Crude And Ecuador's Oil Gamble - How Ecuador's new oil frontier threatens the forest, its peoples, and our future
[5] Peters, D. Mohr, E. Padilla, L. and Alvarez, R. (2026) Fenceline measurements reveal regional disparities in United States refinery benzene emissions and emission sources, *Environmental Research*
[6] Azoulay et al. (2019) Plastic & Health: The Hidden Costs of a Plastic Planet
[7] Rubesinghe, C., Brosché, S., Withanage, H., Pathragoda, D. and Karlsson, T. (2022) X-Press Pearl: A 'New Kind Of Oil Spill': A Toxic Mix Of Plastics And Invisible Chemicals, Center for Environmental Justice (CEJ) & IPEN.

are exposed to them through inhalation, ingestion and dermal exposure,[8] and microplastics have been found in a wide array of human samples from brains to blood, embryos and breastmilk. Microplastics have intrinsic toxicity through their physical interference of cellular processes, in addition to harms stemming from their chemical makeup. Evidence suggests associations with cardiovascular disease, adverse reproductive outcomes, immune modulation. Smaller particles have been shown to cross epithelial barriers and induce inflammation, oxidative stress, and metabolic disruption (violation of the right to health).[9]

- **Toxic chemicals:** Human exposure to plastic chemicals, which number over 16,000, is extensive, with biomonitoring revealing measurable levels of several hundred synthetic chemicals in people of all ages including newborns exposed in utero, across all regions. The plastic chemicals most widely detected in human bodies include bisphenols, benzophenones, phenolic antioxidants, phthalates, brominated and organophosphate flame retardants, and PFAS. Food contact materials and microplastics are an important source of human exposure to plastic chemicals.

  Expert review of the scientific evidence to date has revealed multiple health effects at all stages of human life for many of those chemicals, with foetuses in utero and young children most at risk. Health effects include impaired reproductive function (via polycystic ovary syndrome and endometriosis), miscarriage, reduced birthweight, and genital malformations, diminished cognitive function, insulin resistance, hypertension and obesity in children, and type 2 diabetes, cardiovascular disease, stroke, obesity, and cancer in adults (violation of the right to health).[10]

  A 2024 study by BAN Toxics and ESDO reveals that plastic toys sold in public markets in the Philippines and Bangladesh contained mercury, cadmium, lead, and arsenic, in breach of national and global regulations (violation of the right to health).[11]

- Waste management and end-of-life phase:

  - **Toxic wastes = toxic emissions:** The toxic chemistry of plastics leads to predictable toxic releases during their management as waste. All plastic waste management processes - from open burning to incineration, pyrolysis or solvolysis - result in hazardous waste streams and emissions to the air, water or land containing toxics such as heavy metals (e.g. lead and mercury), persistent organic pollutants (e.g. dioxins and furans), and acid gases. Workers at waste management facilities and nearby communities typically have the highest exposures (violation of the right to health).[12]

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[8] Stirbescu, R. M., Radulescu, C., Bucur, R. M., Banica, A. L., Bucurica, I. A., & Dulama, I. D. (2026). Identification, Quantification, and Characterization of Microplastics in Skincare and Treatment Creams: A Potential Health Concern Related to the Exposure Pathway. *Journal of Xenobiotics*

[9] Rocklöv J., Dunlop S., Chiles T. et al. (2026) Plastics, plastic chemicals, and microplastics: multiple harms to health, *The Lancet*

[10] Landrigan et al. (2025) The Lancet Countdown on health and plastics

[11] Lorenzo, J., Mabilin, M., Garcia, W., Hossain, S., Sultana, S., Alam, S.I. (2024). Not suitable for children: Toxic Chemicals in Plastic Toys Sold in Bangladesh and the Philippines. Published by BAN Toxics and Environment and Social Development Organization.

[12] Azoulay et al. (2019) Plastic & Health: The Hidden Costs of a Plastic Planet

While some communities have taken science in their hands to conduct punctual or temporary monitoring of air pollutants from industrial facilities, including waste-burning facilities,[13] this does not remove governments and polluters' responsibility to provide disclosures and monitoring. On the contrary, it demonstrates the affordability and feasibility of continuous pollution monitoring, and the urgency of mandating it through legal means, to protect community right to health and to a clean environment.

No silver-bullet technology: Thermal treatment - whether controlled or uncontrolled - typically reduces waste volume while increasing toxicity (e.g. de novo synthesis of dioxins, furans during incineration, gasification and pyrolysis), while chemical treatment (e.g. solvolysis) can have significant toxic and greenhouse gas footprints when considering their whole lifecycle impacts (e.g. manufacturing of solvents and disposal of spent solvent waste).[14]

Specific impacts: groups in vulnerable situations

- **Waste pickers** are *"workers in informal, semi-formal, or cooperative settings involved in the collection, sorting, transporting, and commercialization of discarded materials for recycling or reuse."*[15] Their importance in the transition away from plastic pollution is highlighted in UNEA Resolution 5/14, contribute approximately 60%[16] of all plastics collected for recycling. They play a crucial role in mitigating the environmental, economic, and health harms from the final disposal of plastic waste, and its pollution of the open environment. Their work helps reduce greenhouse gas emissions by preventing the controlled (e.g. incineration) or uncontrolled (e.g. landfill fires) burning of plastics. Despite these valuable contributions, waste pickers are the most vulnerable group in the plastic value chain. Most of them work informally, without access to social security, in precarious and hazardous conditions.

- **Indigenous Peoples** are severely affected by plastic pollution throughout its life cycle, particularly during the extraction of fossil fuels, the raw material for 98% of plastic production. Fossil fuel extraction disproportionately impacts Indigenous communities and their territories.[17] Associated road and industrial infrastructure building, oil spills, toxic wastewater dumping and gas flaring have caused massive deforestation, toxic pollution, biodiversity loss, and the erosion of Indigenous health, autonomy, territory and human rights.[18] The human rights of Indigenous Peoples are also affected as environmental defenders facing repression (violations of the rights to free assembly, free speech, free association, and fair trial).

- Similarly, **frontline and fenceline communities** have been severely harmed by plastic pollution. Their neighborhoods have been often turned into "sacrifice zones" where several polluting industries are co-located. These communities suffer from devastating chronic diseases[19] and high

[13] Moon, D., Emmanuel, J. and Babatunde, O. A. (2025) Clearing the Air: The Truth Behind Waste Incineration
[14] Veena Singla (2025) Major gaps in chemical recycling life cycle assessments (LCAs) UCSF
[15] IAWP (2024).
[16] PEW Charitable Trust (2020) Breaking the Plastic Wave.
[17] Anaya, J. (2013) Report of the Special Rapporteur on the rights of indigenous peoples, James Anaya: Extractive industries and indigenous peoples, A/HRC/24/41, United Nations Human Rights Council
[18] See a recent example in the Amazon: Amazon Watch (2025) Drilling Toward Disaster: Amazon Crude And Ecuador's Oil Gamble - How Ecuador's new oil frontier threatens the forest, its peoples, and our future
[19] Orellana, M. (2021).The stages of the plastics cycle and their impacts on human rights.

mortality rates.[20] The toxic burden that plastic pollution imposes on them often perpetuates and deepens older colonial patterns. Elevated rates of stillbirths, premature births, asthma, and leukaemia in have been found in fenceline communities adjacent to fracking wells and plastic production facilities. Multiple widely used plastic chemicals, including bisphenols, phthalates, brominated flame retardants, and perfluorinated and polyfluorinated substances (PFAS) have been found in the bodies of nearly all people examined for biomonitoring surveys within these communities, including newborn infants and pregnant women.[21] The human rights of front- and fenceline communities are also affected when environmental defenders from these communities face repression (violations of the rights to free assembly, free speech, free association, and fair trial). .

Specific impacts: SIDS, LDCs and LLDCs:

LDCs, SIDS, but also larger island states, bear disproportionate plastic pollution costs, including:

- additional plastic waste management and pollution remediation costs for the management of pollution from plastic products manufactured by entities outside their jurisdiction and for
- costs from transboundary coastal plastic pollution that these countries are not responsible for;
- additional costs from plastic pollution generated by tourism in coastal areas, with associated waste generation often seasonally overwhelming local waste infrastructure, as well as steep waste transportation costs when disposal facilities are not locally available (e.g. on smaller islands).[22]

Many of the violations above also constitute violations of the human rights of future generations as set in the Maastricht Principles,[23] especially where they contribute to the breaching of planetary boundaries. Nine planetary boundaries have been identified to date: climate change, stratospheric ozone depletion, atmospheric aerosol loading, ocean acidification, altered biogeochemical flows (phosphorus and nitrogen cycles), freshwater use, land-system change, loss of biosphere integrity, and novel entities. Plastics are a type of novel entities, and contribute to weakening all boundaries.[24]

[20] Orellana, M. (2024). Gender and hazardous substances
[21] Landrigan et al. (2025) The Lancet Countdown on health and plastics
[22] See case of Verde Island (Philippines) in Salazar, Marlet and Benosa, Sherma (2023) Reaching new heights through zero waste
[23] Maastricht Principles on the Human Rights of Future Generations
[24] Villarrubia-Gómez, P., Carney Almroth, B., Eriksen, M., Ryberg, M. and Cornell, S. (2024) Plastics pollution exacerbates the impacts of all planetary boundaries, *One Earth*

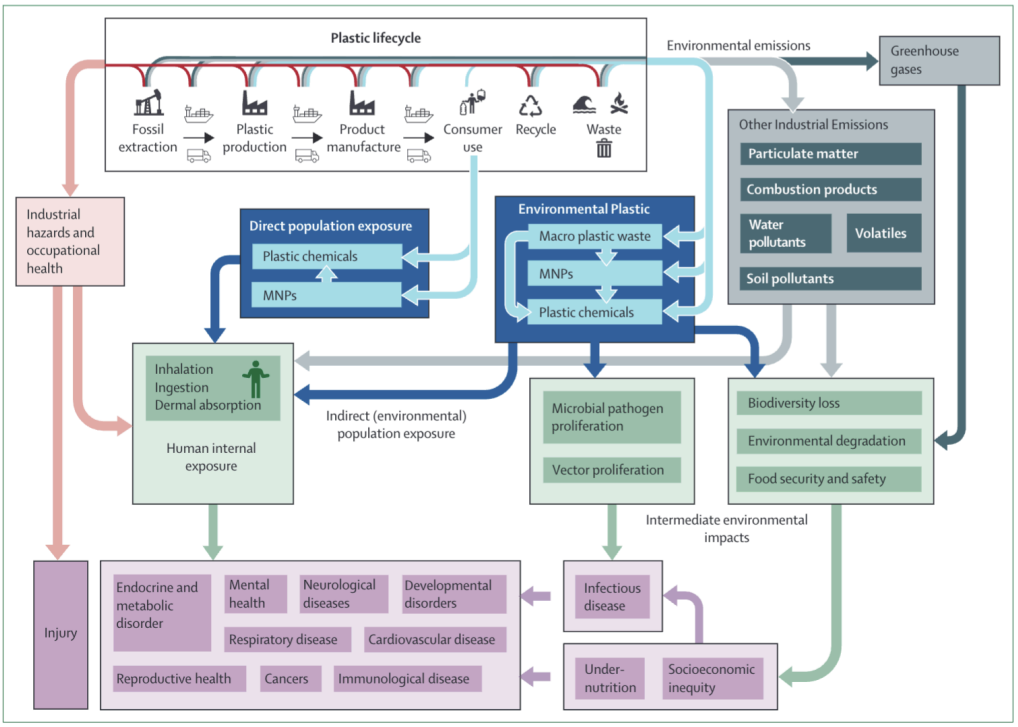

Figure 2: **The potential impacts of plastics on health across the plastic lifecycle**
MNP=microplastic and nanoplastic particle.

The figure above from the Lancet Countdown on Plastics and Health summarizes violations of the right to health across the plastics lifecycle.[25]

Questions 2 & 4: Obstacles to progress in combating plastic pollution, policy gaps

Basel Convention gaps: The Basel Convention plastic amendments were historic, and were followed by a reduction in global plastic waste traded under the HS 3915 code.[26] Still, the plastic pollution and related health crisis continues unabated, harming human health, the climate, planetary boundaries and human rights. Microplastics are everywhere, including in our own bodies.

In national & regional policy, emphasis on recycling without addressing overproduction obstructs progress: The global plastic waste trade continues to contribute to plastic pollution, especially in the Global South. In fact, harm to health and the environment from plastic waste trade is poised to increase dramatically, as the growing adoption of Extended Producer Responsibility at the national and regional levels and other recycling-focused policies fuels greater plastic waste exports for recycling, while more recycling capacity is relocated from Global North to Global South countries, in what some refer to as "waste colonialism".[27]

In the absence of caps on plastic production, recycling only adds industrial processes and recycled materials to our economies on top of primary plastic production, and does not replace it[28] - breaking the

[25] Landrigan et al. (2025) The Lancet Countdown on health and plastics
[26] Basel Action Network (2025) Plastic Waste Transparency Project, Global Export Data
[27] For trends in Latin America, see GAIA (2025) Regional Outlook on imports of plastic waste into Latin America Executive Report submitted to the United Nations Special Rapporteur on Toxics and Human Rights
[28] Zink, T. & Geyer, R. (2018) Material Recycling and the Myth of Landfill Diversion, *Journal of Industrial Ecology*

myth of plastic circularity.[29] Furthermore, chemicals of concern in plastics create toxic recycling, and remain effectively unregulated at the global level, even with the Basel Convention plastic waste amendments.

The obstinate policy focus on recycling, with the adoption of unrealistically high plastic recycling and recycled content targets, shows industries and governments committed to recycle plastics at any cost - including at the cost of poisoning Global South ecosystems and communities.

Basel Convention recommendations: As plastic treaty negotiations stall and harm from plastic pollution continues, it is all the more critical for the Basel Convention to remedy the gaps in its plastic waste trade controls and show continued leadership. To this end, GAIA has made the following recommendations to the Basel Convention ahead of its upcoming Open-Ended Working Group meeting:

- **On plastic wastes:** Control all plastic waste through prior informed consent or as hazardous waste, through the Ban Amendment where applicable;
- **On textile wastes, dominated by synthetics (plastics):** Update annex entries for textile wastes traded without controls with a new narrow entry for pre-consumer, unblended, single-type natural fibres that have not been chemically treated; control all other textile waste through prior informed consent or as hazardous waste;
- **On paper wastes:** Ensure that paper waste shipments with more than 2% plastic contamination are controlled under prior informed consent or as hazardous wastes when the plastic contaminants are hazardous.
- **Cross-cutting:** Mandate public disclosure of transboundary plastic waste and textile shipments subject to prior informed consent, as well as of facilities accepting imported waste, to ensure transparency and accountability of both exporting and importing countries and territories.[30]

Gaps requiring a new plastics treaty: Plastics are part of a global economy, and the global plastic pollution crisis knows no borders. Consequently, a global policy instrument is needed. Basel provisions on waste prevention are all voluntary guidance that has failed to curb the plastic pollution crisis, and the emphasis remains on recycling rather than upstream prevention. Prevention must be obligatory and binding for plastics, and must be the primary task for a future plastics treaty.

One of the treaty's biggest challenges is how to tackle the ongoing, rapid expansion of plastic production. Previous studies have made clear that deep cuts in plastic production are required to reduce plastic leakage into the marine environment.[31] Recently, a major study from Lawrence Berkeley National Laboratory (LBNL)[32] revealed that deep production cuts are also required to align with climate targets.[33]

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[29] GAIA (2024) INC-5 Booklet, Chapter 13.
[30] For more detail, see GAIA (2026) Comments on the Basel Convention plastic waste amendments: implementation, challenges, impacts, and possible further activities
[31] Bergmann, Carney Almroth, Brander, Dey, Green, Gundogdu, Krieger, Wagner, and Walker (2022) A Global Plastic Treaty Must Cap Production, *Science*; Borrelle, Ringma, Law, Monnahan, Lebreton, McGivern, and Murphy (2020) Predicted Growth in Plastic Waste Exceeds Efforts to Mitigate Plastic Pollution, *Science*
[32] Karali, Khanna, and Shah (2024) Climate Impacts of Primary Plastic Production, Lawrence Berkeley National Laboratory
[33] See Tangri, N., Chapter 4. "Plastic production reduction: the climate imperative" in INC-5 Booklet, Global Alliance for Incinerator Alternatives (GAIA)

A future plastics treaty must also establish transparency and accurate labeling of chemical constituents, as well as prohibitions on chemicals and polymers of concern, to end the international circulation of toxic plastic waste, and the amplification of toxics through recycling.[34]

International diplomacy challenges: The plastic treaty negotiations have reached an impasse, paralyzed by the use of consensus as a veto mechanism, allowing single governments to veto majority or near-unanimous decisions in favour of effective environmental plastic pollution safeguards. Consensus must not be confused with unanimity, and voting can allow genuine convergence between States to emerge. The same focus on exclusive consensus has obstructed successful environmental decision-making under the UNFCCC, and in other international policy spheres.

These procedural challenges do not only block the possibility of having a global plastics treaty; they also weaken the effectiveness of its contents. Indeed, the absence of voting during negotiations, and not only on a potential final text, undermines the possibility of essential control measures including a declining cap on plastic production, and a prohibition on toxic chemicals in plastics.[35]

Question 6: Role of fossil fuel, petrochemical expansion

Single-use plastics drive expansion of fossil fuel extraction and petrochemical production: The fossil fuels industry is investing heavily in plastics to grow and compensate projected reduced demand for fossil energy. Petrochemicals dominate current growth in oil demand, for manufacturing of plastics including synthetic fiber.[36] Packaging is currently the largest share of plastic production (40%), dominated by single-use plastic packaging. Other single-use plastic items (e.g. bags, cutlery, foodware and other) also form a significant share of plastic production.[37]

Plastics consume substantial public subsidies - an estimated $80 billion globally in 2024, including tax incentives and other indirect public subsidies.[38] These subsidies render plastics artificially cheap and harder to substitute with fossil-free alternative systems (e.g. reuse) and materials that are safer for human and planetary health. Therefore, subsidies for plastics, as well as the fossil fuels and petrochemicals used to make plastics, directly interfere with States' safeguarding of the human rights to health and to a clean environment.

Questions 3 & 7: Delivering a just transition with human rights and a system shift, rather than a merely material one

Just transition

Communities and workers most affected by the plastic pollution crisis must be centered in the solutions that ensure their livelihoods, fulfill their rights, and integrate them into new non-polluting systems such as reuse and repair. Human and workers' rights central to just transition measures, including rights to equity, non-discrimination, health, a clean and healthy environment, decent work, social security, access to

[34] See Chapter 6. "The plastics treaty and the Basel Convention" in INC-5 Booklet
[35] Rached, S. (2025) Pathways to an effective plastics treaty Global Alliance for Incinerator Alternatives (GAIA)
[36] International Energy Agency 2025, Oil 2025: Analysis and forecast to 2030
[37] Break Free From Plastic & Global Plastics Policy Centre (2024) Making reuse a reality
[38] QUNO & Eunomia (2025) Plastic Money: Turning Off the Subsidies Tap Phase 1; Phase 2; Phase 3

information, public participation, and the right to remedy. Just transition measures must not only remedy past damages but also prevent future harm, preserving the rights of future generations.

A just transition is particularly essential for the most vulnerable groups affected by plastic pollution, including waste pickers, Indigenous Peoples, and communities living on the frontline of plastic feedstock extraction, petrochemical industries, and plastic waste management facilities, in addition to coastal and fishing communities.

Measures to protect human rights in the transition to sustainable economies and societies could include safeguards identified in the ILO Guidelines for a just transition towards environmentally sustainable economies and societies. Measures specific to a just transition away from plastic overproduction could include:

- National legislation for just transition for waste workers, following the example of the Magna Carta of Waste Workers in the Philippines.[39]
- National coordinating bodies for engagement, collaboration with relevant stakeholders, with the aim of social dialogue, as well as monitoring and evaluation on the progress of just transition;
- Enabling policies ensuring adequate income, opportunities and livelihoods, such as workforce integration and training in the scaling of reuse and repair, as well as in waste collection, sorting and safe recycling; development and social programs, and the enhancement of occupational health and safety measures are also key;
- Legal recognition and facilitation of formalization for informal sector workers in the plastics value chain who wish such change of status.

Examples of just transition in practice: Waste pickers have called for access to better and more secure working conditions as they collect and sort plastic waste, including better compensation and support to establish worker cooperatives. Their integration into the formal economy, through government recognition and contracts with waste picker cooperatives, or the hiring of former waste pickers for their plastic waste management expertise, will bring them higher wages, access to safer equipment, and social security benefits.

In Buenos Aires (Argentina), Santiago (Chile), Bengaluru (India) and Dois Irmãos (Brazil), waste pickers contracting with local governments or hired by local waste companies are paid up to 2.5 times the local minimum wage, often in addition to being able to sell the recyclables they collect. Former waste pickers employed at facilities in Baku (Azerbaijan) and Rabat (Morocco) receive guaranteed salaries and health insurance. Workers in Rabat additionally receive access to a bank account and a special low mortgage rate. These improvements not only alleviate poverty but also improve the economic and educational prospects of waste pickers' children by reducing the pressure on them to contribute to family income.[40]

Dedicated finance can also secure livelihoods through better provision of public services and benefits.[41] Retraining of affected workers as well as unemployment and pension benefits that guarantee dignified livelihoods are key. Public provision of access to safe piped drinking water and other necessities increase

[39] See Philippines House Bills 11474 and 2478; Senate Bill 2636.
[40] GAIA (2021). ZeroWaste and Economic Recovery: The Job Creation Potential of Zero Waste Solutions and references therein.
[41] See Chapter 7: A just and effective financial mechanism in INC-5 Booklet,

community health, resilience and disposable income.[42] Indeed, those services and benefits are not at risk when markets are disrupted. Likewise, new reuse and other jobs created in the context of the plastics treaty will be less vulnerable to economic disruptions as they will not be structurally dependent on the overproduction of plastics (or other materials).[43]

Alternatives to plastics

System shift over material shift: Many proposed substitutes for plastic products are single-use products made from non-plastic materials. Is merely switching materials within a production and consumption paradigm dominated by single-use and its take-make-waste linearity enough to protect human health and the environment? Evidence detailed below shows that it is not. Fortunately, a better solution already exists: unlike single-use products, reuse systems are compatible with sustainable material production levels that respect our planet's boundaries.

Biodegradable, compostable and biobased plastics are harmful: Biobased, biodegradable, compostable plastics (e.g. PLA, PHA, PHB) are plastics, and and not always better for the environment than conventional plastics. In fact, there is mounting evidence that these plastics may cause multiple harms, from deforestation, increased use of agrochemicals, and food insecurity (biobased plastics)[44] to disruption of soil health (biodegradable and compostable plastics)[45] to microplastic emissions.[46]

Bio-based and other bioplastics contain the the same chemical additives used in conventional plastics, and peer-reviewed evidence points to similar levels of toxicity as can be found in conventional plastics. Bioplastics are often specifically developed to be chemically identical or similar enough to petroleum-based counterparts to allow their use as drop-in substitutes for plastic production.[47]

The challenge with all single-use products, including non-plastic substitutes: The arguments advanced in favor of single-use substitutes to plastics usually focus on their end-of-life behavior, with a preference for materials that are more effectively recycled (e.g. aluminum, glass or paper) or that biodegrade under certain conditions (e.g. bagasse). However, circularity is not always good for the environment - it considers material intensity but neglects many environmental impacts from energy, water and land use, to toxics and biodiversity. Circularity, as well as composting and biodegradation, do not prevent overproduction and its harms, while all forms of waste processing imply some level of harm to the environment and health.[48]

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[42] Vogel et al. (2024). Safeguarding livelihoods against reductions in economic output. *Ecological Economics*, 215, 107977.
[43] Ibid.
[44] Gerassimidou, S., Martin, O. V., Chapman, S. P., Hahladakis, J. N., & Iacovidou, E. (2021). Development of an integrated sustainability matrix to depict challenges and trade-offs of introducing bio-based plastics in the food packaging value chain. *Journal of Cleaner Production*, 286, 125378.
[45] Accinelli, C., Abbas, H. K., Bruno, V., Nissen, L., Vicari, A., Bellaloui, N., Little, N. S., & Thomas Shier, W. (2020). Persistence in soil of microplastic films from ultra-thin compostable plastic bags and implications on soil Aspergillus flavus population. *Waste Management*, 113, 312–318.
[46] Stapleton, M. J., Ansari, A. J., Ahmed, A., & Hai, F. I. (2023). Evaluating the generation of microplastics from an unlikely source: The unintentional consequence of the current plastic recycling process. *Science of The Total Environment*, 902, 166090.
[47] Zhang, Y., Zhang, L., Li, X., Wang, W., Wang, P., Cheng, R., Liu, X, Yu, C., Wang, Y. (2025) Environmental risks and regulatory gaps in bioplastics: A critical review of degradation pathways and ecosystem impacts, *Journal of Hazardous Materials: Plastics*
[48] Rached, S. (2024) Chapter 13. "Why circularity won't do the job" in INC-5 Booklet

Single-use glass requires the mining of silica, harming rivers and coasts as well as biodiversity that depends on those habitats. The production process also produces silica dust that pollutes water sources and triggers lung disease. Glass recycling can happen in closed loop, significantly reducing the harms from the sourcing of primary silica from the environment. However, it is still very energy-intensive, requiring 75% of the energy needed to make primary glass. Even with plans to decarbonize glass production and recycling processes, the energy inputs required would still take the current single-use glass economy 170% over its carbon budget to remain at 1.5 degrees of global warming by 2050 in the EU alone. However, glass is highly suitable for reuse, which would also avoid issues related to overproduction and reduce the volume of recycling.[49]

Single-use aluminum production needs the mining and refining of bauxite that harm vast areas of land within or near tropical rainforests, causing deforestation, toxic pollution and biodiversity loss, as well as expropriation of Indigenous lands and violations of the rights of Indigenous peoples. Primary aluminum is also one of the most carbon-intensive metals to produce.[50] Although recycled aluminum performs much better, aluminum recycling has its limits: it still requires primary material inputs at every cycle in key applications such as beverage cans. This is because cans are currently designed with two different types of alloys in the ends (stronger) and in the body (weaker) of the can. These get mixed during recycling, producing a material that is not strong enough, and requires the addition of primary aluminum to manufacture cans.[51]

Single-use paper-based and cardboard require the production and extraction of wood pulp, causing deforestation, harm to forest biodiversity, increased susceptibility to fires, increased use of agrotoxics, dispossession of land belonging to Indigenous and traditional communities, among other harms from plantation forestry.[52] The pulp and paper industry is also the world's third largest consumer of water.[53]

Plastic or other chemical coatings are widely used to waterproof paper and cardboard for their use as food packaging or other food-contact applications. Many food-contact single-use paper-based and cardboard products have up to 20% of plastics, and therefore are actually plastic products. The definition of plastic products under the treaty should include products made partly from plastic materials, which is the case for the many plastic-coated paper and cardboard products that are often wrongly presented as alternatives to single-use plastics.

In addition, paper-based and cardboard substitutes have a low recycling potential. As multi-material products, they are inherently challenging to recycle because separating the materials is difficult and expensive. They are therefore more likely to end up burned in incinerators or landfilled. Their recycling also requires virgin material input at every cycle. Even when the paper or cardboard fraction is separated - through a process and equipment that are usually too costly to make economic sense - virgin wood pulp must always be added at a 50% ratio, to compensate for the weakness of recycled paper and cardboard fibers. The other material fractions (e.g. plastic or aluminum) are not recyclable and usually end up burnt or landfilled.

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[49] Eunomia (2023). Decarbonisation of Single Use Beverage Packaging: Investigating 1.5oC aligned carbon budgets for aluminum, PET and glass beverage containers in the EU, report commissioned by Zero Waste Europe, p. 18 & 20.
[50] Georgitzikis, K., Mancini, L., d'Elia, E., Vidal-Legaz, B. (2021). Sustainability aspects of Bauxite and Aluminium — Climate change, Environmental, Socio-Economic and Circular Economy considerations, EUR 30760 EN, Publications Office of the European Union.
[51] Karpe E., Thellenberg P., Fernström F. (2022) Circularity of aluminium: Mapping difficulties in scrap circulation.
[52] Stravens, M. (2023). Disposable Paper-based Packaging for Food. The false solution to the packaging waste crisis.
[53] International Energy Agency (2022). Pulp and Paper. Tracking Report.

Finally, paper-based and cardboard substitutes in food-contact applications are not compostable. Inks, adhesives and barrier chemicals (e.g. toxic PFAS waxes) prevent the safe composting of food-contact paper and cardboard-based materials, as well as their use in anaerobic digesters.[54]

LCA limitations: Life cycle analyses (LCAs) do not adequately capture upstream or pollution impacts, and are therefore insufficient to assess the environmental and health implications of switching from one product material to another. They also neglect any consideration of human rights. The weakness of LCAs in capturing plastic pollution across its life cycle has already been established.[55] This also applies to paper-based and cardboard substitutes, where forestry as well as littering impacts from single-use paper and cardboard-based food packaging are often absent from life cycle analyses due to their incomplete scope.[56] Assessments of impacts on all planetary boundaries as well as human health and human rights are needed to adequately capture tradeoffs.

Best overall: eliminate, reuse & refill: The optimal scenario from an environmental standpoint is when a plastic product can be eliminated without need for substitution, such as plastic straws in most contexts, and plastic packaging for individual fruits or vegetables, particularly in shorter supply chains.

When a product (including a form of packaging) is needed, reuse is better than single-use across all materials, as long as the number of cycles surpasses the sustainability break-even point (number of cycles where reuse becomes environmentally beneficial). This can be done through reuse systems (where the customer rents a reusable item) or refill systems (where the customer brings their own reusable container for refilling). Choice of material for reuse must be guided by what is best for health and environmental for a given application.[57]

For some applications in some contexts, reuse or refill may be challenging to deploy (e.g. water scarcity making washing challenging, or transportation infrastructure weaknesses interfering with reuse logistics), and for these, single-use substitutes could become necessary. However, these cases should be the exception, and not the rule.

Zero waste cuts material overproduction while preserving wellbeing: Today, Global North regions continue to overconsume material resources and to burn or dump them as waste, while Global South regions are increasing their historically low material consumption, feeding material overproduction and underlying overextraction of material resources. A zero waste approach, founded in the avoidance of unnecessary material use, followed by an emphasis on responsible material use through product and packaging reuse instead of single-use or disposable products and packaging, alongside an emphasis on repair and refurbishment instead of planned obsolescence and fast fashion, with safe recycling as a last resort, is a responsible approach that holds the promise to keep our societies' material footprint within planetary boundaries, without compromising on quality of life and equity.[58]

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[54] Zero Waste Europe (2024). Factsheet: What's inside food-contact paper packaging? Plastic and M. & Mme Recyclage (2024) Functionalisation Of Paper And Cardboard Report.
[55] Eunomia (2020) Plastics: Can Life Cycle Assessment Rise to the Challenge?
[56] Zero Waste Europe (2024). Factsheet: What's inside food-contact paper packaging? Plastic and M. & Mme Recyclage (2024) Functionalisation Of Paper And Cardboard Report.
[57] Global Plastics Policy Centre (2023). Making Reuse a Reality: A systems approach to tackling single-use plastic pollution.
[58] Tat, E. (2025) Rethinking resources: the next frontier for a zero waste future, Zero Waste Europe (ZWE)

Question 11: Regulating chemicals

Scope: States must regulate chemicals present in plastic materials (e.g. pellets, film, fluff, synthetic fiber) and products, including polymers themselves, as well as additives, processing chemicals, oligomers, monomers, and non-intentional additive substances.[59]

Quantitative regulations: To avoid breaching the 1.5°C limit set by the Paris Agreement, primary plastic production must decrease by at least 12% to 17% per year, starting in 2024. To give the world a 50% chance of staying below 1.5°C of temperature rise, production must be cut by 11.8 - 12.5% every year beginning in 2024. If we want a 67% chance to stay below 1.5°C, 16.3% to 17.3% of primary plastic production must be cut annually.[60]

Qualitative regulations: States' regulation of chemicals in plastics must consider the whole lifecycle of plastics, since the inclusion of toxic chemicals at the production stage determines harm to health and the environment during the use phase, and impacts the very possibility of safe recycling or other environmentally-sound end-of-life management.

Prohibitions of chemicals of concern in plastics should:

- be based on hazard criteria starting with persistence, bioaccumulation, mobility and toxicity;
- include a red list identifying chemicals matching one or more hazard criteria, for clarity of implementation;
- follow a group-based approach for efficiency and to avoid regrettable substitution, with an explicit list of groups defined in regulations;
- include continuous monitoring of plastic chemicals for which there is insufficient evidence to conclude that they are not hazardous, through a scientific body free from conflicts of interest;
- provide for regular updating of the hazard criteria and prohibited groups of chemicals, based on the latest science and independent evidence, through the work of the dedicated scientific body, and using an streamlined legal process;
- require disclosure of chemical composition of plastic materials and participation in a mandatory globally harmonized transparency system;
- adopting a no data no market approach;[61]
- provide for reasonable, time-bound and specific exemptions based on the essential use approach.

Question 12: National access to information on risks & harms

National laws requiring transparency and disclosure of chemicals in plastic products, including packaging, are needed for communities to access information about their likely exposures from facilities manufacturing these products or managing them as waste. Without this information, it is much more

[59] Wagner et al. (2024) State of the science on plastic chemicals - Identifying and addressing chemicals and polymers of concern.
[60] See Tangri, N., Chapter 4. "Plastic production reduction: the climate imperative" in INC-5 Booklet, Global Alliance for Incinerator Alternatives (GAIA)
[61] See Wagner et al. (2024) State of the science on plastic chemicals - Identifying and addressing chemicals and polymers of concern. On transparency, see HEJSupport, Swedish Society for Nature Conservation and groundWork, 2024, Transparency and traceability systems for plastics: Design and practicability considerations.

difficult for communities to formulate convincing, fact-based demands against industrial siting or in favor of specific safeguards, or to take any other action to protect their health or the environment.

Question 14: Reprisals

Plastics is no exception to the broader trend of reprisals against environmental defenders. GAIA's partner organizations have been targeted. On 8 May 2026, the Philippine government arrested four individuals peacefully protesting against the plastic pollution crisis, including recent devastating landfill incidents in the region, outside the 2026 ASEAN summit on the island of Cebu in the Philippines. The four activists were released on bail the following day and informed that they would be prosecuted for their peaceful demonstration.[62]

In November 2024, the Republic of Korea authorities prosecuted five Greenpeace activists who boarding a petrochemicals vessel off the coast of Seosan for a peaceful protest against plastic pollution, coinciding with the conclusion of a plastic treaty negotiating session in Busan. Authorities prohibited the five activists, who were foreign nationals not residing in South Korea, from leaving the country for over six months, until their court case concluded with convictions and fines in June 2025.[63]

II. Questions for specific stakeholders and rights-holders: civil society

Question 1: GAIA's work on plastics

For years, GAIA has been at the forefront of the movement to end the plastics crisis, through local-to-global policy changes, movement building, and on-the-ground solutions. Supporting the powerful grassroots movements that fight plastic pollution at its source and build new systems in their cities is central to GAIA's work. GAIA also sheds light on plastic's harmful value chain, securing policies that reduce single-use disposable plastics, and debunking the plastic industry's polluting "plastic to fuel" and "chemical recycling" false solutions.

Question 3: Access to information and participation

Participation in environmental policymaking: Representatives from civil society and Indigenous Peoples must be given direct access to environmental decision-making. This includes access to international negotiations on environmental agreements, regional and national discussions that shape environmental policies, in the form of:

- direct access to negotiation premises;
- access to live broadcasts of discussions;
- access to meeting minutes;

[62] Greenpeace (2026) Greenpeace: ASEAN leaders cannot claim climate leadership while silencing peaceful protest, 9 May 2026;
[63] Civicus (Undated) South Korea: Activists Criminalised, Satire Censored Amidst Political Transition

- availability of interpretation (including sign language) and translation of documents;
- availability of information in multiple formats (written, audio) to account for varying literacy levels and disabilities;
- multiple avenues for public comment, oral or written, in person or remote;
- sufficient advance notice; legal requirement of notification;
- travel support and compensation, especially for most marginalized groups who could not otherwise afford to lose daily income or cover transport costs.[64]

Co-benefits of civil society participation: The active inclusion and participation of civil society is not only important to uphold the human right to development, but also has co-benefits in securing successful treaty negotiations and effective policy, as experience from the Ramsar Convention and Mine Ban Treaty reveals. Indeed, environmental and human rights defenders, representatives of Indigenous Peoples and of affected communities, as well as scientists often have unique expertise both in understanding the problems in need of regulation and the realities of different solutions. Moreover, unlike government negotiators and international organizations, they have the independence needed to call spoilers to account when they undermine negotiations, and energy to provide continued momentum.[65]

Permitting and siting of industrial facilities: In parallel, transparency on emissions from industrial facilities allows individuals and communities to participate in permitting and other facility-related environmental decisions in an informed manner. Access to detailed information on emissions is particularly relevant for environmental justice (EJ) communities, who typically suffer from cumulative environmental and toxic burdens from different industrial and polluting facilities located in their vicinity. This transparency complements legal and procedural guarantees for community participation in decisions on the permitting and siting of industrial facilities to ensure the upholding of the rights to health, to a clean environment, and to development.

For more detail, see GAIA's recent submission to the U.N. Special Rapporteur on the right to development.

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GAIA is a global network of grassroots groups and national and regional alliances representing more than 1000 organizations from 92 countries. We envision a just, zero waste world built on respect for ecological limits and community rights, where people are free from the burden of toxic pollution, and resources are sustainably conserved, not burned or dumped. We work to catalyze a global shift towards environmental justice by strengthening grassroots social movements that advance solutions to waste and pollution.

[64] UNEP failed to provide adequate document access to observers during UNEA-7 - see Ocean Care (2025) UNEA-7: Alarming Signals
[65] Rached, S. (2025) Pathways to an effective plastics treaty Global Alliance for Incinerator Alternatives (GAIA)