

4. Plastics and Inclusive Wealth

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The Dangers of Plastics

Global plastic production has increased exponentially since the 1950s, reaching about 460 million tonnes in 2019.¹ The continuing growth of the global annual production of primary plastic is currently on course to possibly reaching 1.1 billion tonnes in 2050. Single-use plastics now comprise about forty percent of global plastic production.

Chemicals are an integral part of plastics.² Over sixteen thousand substances have so far been associated with plastics, either known for use in plastic production or detected in plastic materials. In addition to certain monomers, ten groups of chemicals (based on chemistry, uses, or sources) are identified as being of major concern due to their high toxicity and potential to migrate and/or be released from plastics, including specific flame retardants, certain UV stabilizers, per- and polyfluoroalkyl substances (PFASs), phthalates, bisphenols, alkylphenols and alkylphenol ethoxylates, biocides, certain metals and metalloids, polycyclic aromatic hydrocarbons, and many other non-intentionally added substances (NIAS).

Chemicals of concern have been found in plastics across a wide range of sectors and product value chains, including toys and other children's

¹ See Philip J. Landrigan, Hervé Raps, Maureen Cropper, Caroline Bald, Manuel Brunner, Elvia Maya Canonizado, et al., "The Minderoo-Monaco Commission on Plastics and Human Health," *Annals of Global Health* 89, no. 1 (2023), doi.org/10.5334/aogh.4056.

² See Martin Wagner, Laura Monclús, Hans Peter H. Arp, Ksenia J. Groh, Mari E. Løseth, Jane Muncke, Zhanyun Wang, Raoul Wolf, and Lisa Zimmermann, *State of the Science on Plastic Chemicals: Identifying and Addressing Chemicals and Polymers of Concern* (2024), zenodo.org/records/10701706.

products, packaging (including food contact materials), electrical and electronic equipment, vehicles, synthetic textiles and related materials, furniture, building materials, medical devices, personal care and household products, and agriculture, aquaculture, and fisheries.

Chemicals of concern in plastics can impact human health and the environment. Extensive scientific data on the potential adverse impacts of about seven thousand substances associated with plastics show that more than 3,200 of them have one or more hazardous properties of concern. These include chemicals that are persistent and mobile in the environment, accumulate in the body, can mimic, block or alter the actions of hormones, reduce fertility, damage the nervous system, and/or cause cancer.³

The Global Framework on Chemicals, adopted in Bonn (Germany) in October 2023, affirms the need and vision to move towards a pollution-free world.⁴ It specifically “Invites relevant participating organizations of the Inter-Organization Programme for the Sound Management of Chemicals to update the existing costs of inaction report, taking into account quality-assured new research and the latest information relating to economic and social costs of unsound management of chemicals and waste at the national, regional and international levels.”⁵ Likewise, the Pact for the Future adopted in the seventy-ninth session of the UN General

³ See United Nations Environment Programme (UNEP), and Secretariat of the Basel, Rotterdam, and Stockholm Conventions, “Chemicals in Plastics: A Technical Report” (2023), www.unep.org/resources/report/chemicals-plastics-technical-report.

⁴ See United Nations Environment Programme, “Global Framework on Chemicals,” www.chemicalsframework.org/.

⁵ United Nations Environment Programme, “The Global Framework on Chemicals Resolutions,” (2024), <https://www.chemicalsframework.org/page/resolution-v3-financial-considerations>. The quote is from: “Resolution V/3: Financial Considerations,” no. 4. See also Mateo Cordier, Takuro Uehara, Bethany Jorgensen, and Juan Baztan, “Reducing Plastic Production: Economic Loss or Environmental Gain?,” *Cambridge Prisms: Plastics 2* (2024): e2, doi.org/10.1017/plc.2024.3; World Health Organization, Inter-Organization for the Sound Management of Chemicals (IOMC), “Working Together to End Plastic Pollution,” partnership.who.int/iomc.

Assembly in New York clearly recommends integration of planetary and human health with explicit focus on integration of nature with finance for poverty alleviation and inequality reduction.⁶

Need for Better Economic Metrics

The existing global financial architecture—based mainly on Gross Domestic Product (GDP)—is not an adequate metric of the wealth of nations. It fails to measure plastics’ harms to human and natural capital. Continued acceleration of growth and employment while not harming human health, strip-mining the planet’s resources, or widening inequities will require that we reform our accounting systems and develop new macroeconomic metric that measure human and natural capital in addition to GDP. An example is seen in the Global Biodiversity Framework of the Convention on Biological Diversity, which emphasizes mainstreaming biodiversity into finance.⁷

To overcome the problems confronting the world within the triple planetary crisis—i.e., climate change, biodiversity loss, and pollution—it is essential that the world change how it views development and how it measures the wealth of nations. By using measures of Inclusive Wealth, society will be better equipped to track whether nations are making true progress. There is a growing consensus on the need to move beyond GDP to measure progress and sustainability.⁸

⁶ See Vibhu Mishra, “Pact for the Future: World Leaders Pledge Action for Peace, Sustainable Development,” *United Nations, UN News: Global Perspective Human Stories*, September 22, 2024, news.un.org/en/story/2024/09/1154671.

⁷ See UN Convention on Biological Diversity, “Kunming-Montreal Global Biodiversity Framework,” January 10, 2024, www.cbd.int/gbf.

⁸ See United Nations Systems, Chief Executives Board for Coordination (CEB), “Valuing What Counts: United Nations System-wide Contribution on Progress Beyond Gross Domestic Product (GDP),” August 17, 2022, unsceb.org/valuing-what-counts-united-nations-system-wide-contribution-beyond-gross-domestic-product-gdp.

While GDP provides important information on the flow aspects of the national accounts, the stock part (i.e., the world's stocks of natural assets, which include geology, soil, air, water and all living things), especially natural capital, remains outside the domain of transaction and accounting and is not measured by GDP. Defining stocks, quantifying them, and internalizing them into the National Accounts System would keep track of sustainability. In this context assessing both the human wealth produced and the natural wealth in inclusive ways, and avoiding over-reliance on market price or GDP, would provide a more realistic picture of how we are addressing the environment and impact of economic activities.

The Inclusive Wealth Index

The Inclusive Wealth Index (IWI) is a metric developed by the United Nations Environment Programme (UNEP) in response to the Beyond GDP movement. The Inclusive Wealth Index measures the assets that underpin a nation's income flows and human well-being: natural, human, and produced capital. Measuring inclusive wealth is key to driving sustainable investments across all policy areas. The sum of natural assets plus human and produced assets determine an economy's Inclusive Wealth and are the building blocks for achieving the Sustainable Development Goals (SDGs).⁹

The Inclusive Wealth Index measures the wealth of nations by conducting a comprehensive analysis of a country's productive base, including the assets from which human well-being is derived, as well as those manufactured, and human and natural capital. Thus, IWI measures a nation's capacity to create and maintain human well-being over time.¹⁰

The UNEP Inclusive Wealth Report 2023 undertook a comprehensive global assessment of the inclusive wealth of 163 countries between 1992

⁹ See United Nations, Department of Economic and Social Affairs, "The 17 Goals," sdgs.un.org/goals.

¹⁰ See United Nations Environment Programme, *Inclusive Wealth 2023: Measuring Sustainability and Equity* (2023), doi.org/10.59117/20.500.11822/43131.

and 2019.¹¹ The Inclusive Wealth Index can supplement GDP to capture a comprehensive assessment of economy-environment interactions. Individual countries like USA, Canada, Australia, UK, Kenya, Ethiopia, Indonesia, and others have already started working on it. The Inclusive Wealth Report highlights how inclusive wealth—incorporating natural, human, and produced capital—is a sophisticated yet streamlined measure for assessing national and global development and economic progress.

As noted by the Dasgupta Report, *The Economics of Biodiversity*, judging “whether the path of economic development . . . is sustainable” requires nations to adopt “inclusive measure[s] of their wealth.”¹² Likewise, the United States White House Office of Science and Technology Policy has clearly articulated needs for natural capital assets accounts.¹³ The World Bank,¹⁴ the Organisation for Economic Co-operation and Development (OECD),¹⁵ and the World Economic Forum¹⁶ agree that decision-makers must focus on increasing wealth and reducing economic inequity if they want to ensure well-being in the twenty-first century.

Rising GDP per capita is linked to higher rates of poverty and inequality within nations. Relying solely on GDP growth for policy formulation does not effectively address poverty and inequality.¹⁷ The IWI

¹¹ See United Nations Environment Programme, *Inclusive Wealth 2023*.

¹² Partha Dasgupta, *The Economics of Biodiversity: The Dasgupta Review* (HM Treasury, 2021), 5.

¹³ See White House, “Office of Science and Technology Policy,” [bidenwhitehouse.archives.gov/ostp/](https://www.bidenwhitehouse.archives.gov/ostp/).

¹⁴ See World Bank, *The Changing Wealth of Nations 2021: Managing Assets for the Future* (World Bank, 2021), hdl.handle.net/10986/36400.

¹⁵ See Organisation for Economic Cooperation and Development (OECD), *Inequalities in Household Wealth and Financial Insecurity of Households* (2021), www.oecd.org/content/dam/oecd/en/publications/reports/2021/07/inequalities-in-household-wealth-and-financial-insecurity-of-households_f2d465bb/b60226a0-en.pdf

¹⁶ See World Economic Forum, *The Inclusive Development Index 2018* (2018), [weforum.org/publications/the-inclusive-development-index-2018/](https://www.weforum.org/publications/the-inclusive-development-index-2018/).

¹⁷ See Organisation for Economic Cooperation and Development (OECD), *Inequalities in Household Wealth and Financial Insecurity of Households*.

provides a more holistic economic assessment, particularly important for low-income countries which are often most vulnerable to the impacts of natural capital depletion.¹⁸ IWI would also capture how plastics and chemicals are affecting human capital in the economy through causing increased mortality and morbidity and thus impeding the formation of human capital. Use of the IWI will help the economy and society to track progress toward meeting the Sustainable Development Goals, reduce inequity, and safeguard human health.



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¹⁸ See UN Environment Programme, *Inclusive Wealth for Africa 2024: Moving Beyond GDP* (2024), wedocs.unep.org/xmlui/handle/20.500.11822/43651.

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