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Title of document: Integrating Sound Chemicals and Waste Management into Biodiversity Decision-making *(draft)*

About this document:

This draft primer provides GFC stakeholders, in particular Global Framework on Chemicals (GFC) national focal points, with an action-oriented overview of why ensuring the sound management of chemicals and waste is key in addressing biodiversity loss. Its key message is that pollution from chemicals and waste is a major yet often overlooked driver of biodiversity loss. The GFC offers an opportunity to coordinate with the Global Biodiversity Framework (GBF) for more effective and solution-oriented implementation. Through cross-sectoral collaboration and aligned planning, the GFC can support the translation of biodiversity commitments into practical outcomes.

This draft document has been developed by the IOMC to support the implementation of ICCM-5 Resolution V/8, which encouraged "Integrating sound chemicals and waste management in sustainable development decision-making processes, as appropriate" as an area of work for possible implementation programmes. While the IOMC does not intend to propose a specific Implementation Programme on this topic, the draft primer may serve as a starting point for stakeholders interested in advancing the topic further. GFC stakeholders interested in taking this work forward are encouraged to contact: Oliver Wootton (Oliver.WOOTTON@unitar.org)

Integrating Sound Chemicals and Waste Management into Biodiversity Decision-making

A primer to support sustainable development

DRAFT

November 2026

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1 About this Primer

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2 Why Integrate Chemicals and Waste Management into Biodiversity Decision-Making?

2.1 The sustainable development context

The sound management of chemicals and waste is central to sustainable development. Of 169 targets and 231 unique indicators under the SDGs, around 69 targets and 91 related indicators have been cited to be relevant to chemicals and waste.[1] It contributes to, among others, safeguarding human health and the environment, including e.g. ecosystem functions, and the natural capital that underpins livelihoods. The Kunming-Montreal Global Biodiversity Framework (GBF) sets a global pathway to a 2050 vision of **"living in harmony with nature"** and includes 23 targets for 2030; **Target 7 focuses explicitly on reducing pollution risks and impacts to levels that are not harmful to biodiversity.** [2]



2.2 The current global situation

Pollution, especially from chemicals and wastes, has been identified as a main driver of biodiversity loss. [3] At the same time, global chemical sales (excluding pharmaceuticals) are projected to increase from 3.57 trillion euro in 2017 to 6.6 trillion in 2030. [4]

- Pollution threatens more than 11,000 species: According to the latest compilation of IUCN Red List, 10% of assessed animal species are impacted by pollution. [5]
- Pollution is a major driver of insect decline: Pesticide use has driven dramatic declines - 76% in flying insects and 78% inground-foraging arthropods - disrupting ecosystems, pollination, nutrient cycling, and resilience. [6]
- Pollution drives the water crisis: Projections suggest that by the year 2100, as many as 5.5 billion people could face exposure to contaminated water sources due to increasing pollution levels. [7]

2.3 The Global Framework on Chemicals and biodiversity

- **Target A1** is fundamental because integrating chemicals and waste into sustainable development requires solid legal and institutional frameworks to act on pollution risks [10].
- **Target B3** provides the data foundation necessary for informed decision-making, monitoring, and aligning chemicals and biodiversity policies [10].
- **Target E6** strengthens the policy linkages required to address chemicals and waste across biodiversity, climate, health, and labor agendas [10].

2.4 Consequence of policy separation

Ignoring chemical and waste risks in biodiversity decision-making leads to persistent, cumulative, and often irreversible damage to health, the environment, notably ecosystems, species, and ecosystem functions. Pollutants can, in particular, cause acute and chronic toxicity, endocrine and reproductive disruption, immune impairment, reduced genetic diversity, and altered species interactions, undermining population viability and ecosystem resilience ([8]; [9]).

Key sector impacts:

- **Mining (large-scale, ASGM, primary, nonferrous metals):** Habitat loss, toxic contamination, food-web bioaccumulation, long-term biodiversity decline, reduced ecosystem services, and heightened environmental and climate risks [9].
- **Agriculture (incl. fisheries)**: Soil degradation; loss of pollinators and beneficial organisms; water and air pollution; aquatic ecosystem disruption and oxygen depletion; human health impacts including neurological, respiratory, and reproductive disorders, and cancer [9].
- **Healthcare:** Release of persistent organic pollutants and heavy metals from pharmaceuticals, equipment, and dental amalgam; contamination from hazardous chemicals (e.g. mercury, UV filters, flame retardants); aquatic ecosystem disruption; loss of ecosystem services; contribution to antimicrobial resistance [9].

2.5 Benefits of taking action

Reducing the bioaccumulation of hazardous chemicals and waste, restoring polluted ecosystems, and enhancing carbon sequestration together protect wildlife, improving ecosystem integrity, and strengthen climate – biodiversity synergies. At the same time, these actions reduce human exposure to toxic substances and waste, improve food safety and security, and safeguard the health of vulnerable populations. Economically, these actions help avoid long-term remediation costs, protect nature-dependent livelihoods, promote more sustainable trade internationally and sustain the ecosystem services that underpin a significant share of global economic activity. (See Appendix 1 for detailed environmental, social and economic benefits).

3 Topics, policy areas, and financing options

3.1 Key topics and policy responses

Sector	Pollution Drivers and Challenges	Policy Responses and Other Measures - Options
Agriculture and Food Systems	Pesticide/HHP overuse Nutrient runoff & eutrophication *([2]; [10])*	→ Halve risks via GBF Target 7 in NBSAPs → Integrated Pest Management (IPM) → HHP phase-out strategies
Mining (e.g. Artisanal and Small-Scale Gold Mining)	Mercury/cyanide use Deforestation, habitat loss *([11] ; [10])*	→ Implement Minamata Convention NAPs for ASGM → Support mercury-free technologies → Support financial mechanism for the land restoration
Industrial Chemicals and Persistent Organic Pollutants (POPs)	POPs & heavy metals across life cycles Manufacturing contamination *([12]; [10])*	→ Apply Best Available Techniques/Best Environment Practices (BAT/BEP) for POPs/mercury → Phase out high-risk substances → Introduce green chemistry standards
Plastic & Product Lifecycle	Microplastic accumulation Low recycling, circularity gaps (*[2]; [10]*)	→ Ban single-use harmful plastics → Incentivize reuse/recycling → Align with GBF Target 7 in national waste/plastic plans
Hazardous Wastes and Residues	Mismanagement, e-waste Informal sector risks *([13] ; [4])*	→ Implement the Basel Convention → Develop legal frameworks (GFC Target A.1) → Promote safe collection, transport, disposal
Pharmaceuticals and Health Sector	Mercury in products AMR via waste discharges *([11] ; [10])*	→ Regulate AMR discharges → Mainstream prevention in health policy & NBSAPs → Ban mercury in cosmetics/medical uses
Marine and Coastal Ecosystems	Land-based pollution (nutrients, plastics) Chemical runoff *([2]; [8])*	→ Integrated coastal zone & marine spatial planning → Reduce land-based inputs through upstream policy action

3.2 Potential financing options

Financing should follow an integrated approach that combines mainstreaming into national budgets and sectoral programmes, private-sector and other relevant stakeholders' engagement across value chains, and dedicated external finance. Practical options include:

- **National:** Allocate resources in NBSAP and sectoral budgets (e.g. agriculture, mining) for pollution targeted action [9]

- **International:** Access programmatic support under Multilateral Environmental Agreements (MEAs) (e.g. Stockholm Convention, Minamata Convention, Convention on biological biodiversity) including technical assistance through Basel and Stockholm Convention regional centers and other dedicated funds, e.g. Special Programme, GFC Fund, GBF Fund, Kunming Biodiversity Fund.
- **Blended:** Leverage development finance for infrastructure (e.g. wastewater) and engage private sector in co-investing in safer alternatives and just transition support. [14]

4 From analysis to action: stakeholders and institutional engagement

4.1 National and international level

A "whole-of-government" and "whole of society" approach involving all relevant stakeholders is essential because pollution drivers sit across mandates and sectors.

Institutional Level	***Key Actors***	***Main Role in GBF/GFC Coordination***
National	Environment ministries, chemicals/waste regulators, health ministries, agriculture ministries, trade ministries, CSO, private sector, civil society, academia.	Integrate chemicals and waste into NBSAPs and biodiversity into pollution strategies implement sectoral actions
International	MEAs Secretariats, IOMC organizations, including UNEP, FAO, and WHO, CSO, private sector, civil society, etc.	Provide guidance, technical support, and alignment across MEAs, international organisations, mechanisms and frameworks, processes, and all relevant stakeholders.

Text Box: Practical action checklist and entry points for GFC National Focal Points

- **Map national priorities**: Systematically identify where GBF Targets overlap with your country's existing chemicals and waste challenges.
- **Align plans**: Check whether biodiversity plans and chemicals/waste plans are consistent with each other and identify missing links.
- **Select indicators and custodians**: Choose a limited, realistic set of indicators to track progress, and clearly assign who is responsible for the data.
- **Convene coordination**: Create a coordination mechanism between biodiversity and chemicals/waste institutions.
- **Build a sector roadmap**: Translate targets into sector-specific action plans.
- **Mobilize resources**: Ensure actions are financially viable, not just technically sound.
- **Report:** Use aligned reporting to serve conventions and frameworks.

4.2 Considerations for a potential GFC Implementation Programme

A GFC Implementation Programme might serve as a platform - or community of practice - for countries and stakeholders to exchange experiences and solutions on pollution/biodiversity linkages. Building on processes such as the Bern Process, this platform could support peer-to-peer learning, capacity building, and the implementation of technical guidance tailored to GBF targets and related GFC targets. By fostering coordination across chemicals, waste, and biodiversity focal points, the GFC could leverage Bern Process and other initiatives, help align planning and implementation of national strategies and drive result-oriented cross-sectorial joint solutions across both clusters.

Appendix: Environmental, social and economic benefits

This appendix supports environmental, social and economic benefits referenced above.

Environmental benefits	Social and health benefits	Economic benefits
Reduced bioaccumulation and biomagnification of hazardous chemicals protects thousands of species, including fish, birds, and mammals. **UNEP. (2022). Mercury and biodiversity.**	Reduced exposure to hazardous chemicals lowers the global burden of disease linked to pollution. World Health Organization. (2021). *The public health impact of chemicals: knowns and unknowns — data addendum for 2019*.	Ecosystem services underpin ~50% of global GDP (≈ USD 44 trillion). World Economic Forum. (2020). Nature risk rising: Why the crisis engulfing nature matters for business and the economy.
Restoration of polluted soils, freshwater, wetlands, and coastal ecosystems improves habitat quality and ecosystem connectivity. **IPBES. (2019).**	Improved food safety and food security through reduced contamination of soils, water, fisheries, and agricultural systems. IPBES. (2019). Global assessment report on biodiversity and ecosystem services.	Innovative chemical management approaches, such as Chemical Leasing, can deliver economic benefits by reducing often overlooked chemical management costs, which can reach up to three times the purchase price of chemicals, through more efficient use, lower waste generation, and reduced safety and liability risks UNEP. (2019). Global Chemicals Outlook II.
Ecosystem restoration contributes to climate mitigation through enhanced carbon sequestration. **CBD. (2022). Kunming–Montreal Global Biodiversity Framework (Targets 7, 8, and 11)**	Protection of vulnerable populations (children, women, workers, Indigenous Peoples) from chemical exposure. UNEP. (2019). Global Chemicals Outlook II.	Avoided costs from contaminated site cleanup and long-term environmental remediation. OECD. (2021). Global material resources outlook to 2060.
	Supports realization of the human right to a clean, healthy and sustainable environment. United Nations General Assembly. (2022). Resolution 76/300.	Protection of livelihoods in agriculture, fisheries, tourism, and natural-resource-dependent sectors. IPBES. (2019). Global assessment report on biodiversity and ecosystem services.

Appendix: Case Studies:

1. Nature based solutions towards more responsible mining in Brazil | Global Mercury Partnership In Brazil, a mining cooperative partnered with researchers and authorities to eliminate mercury in small-scale gold mining using an extract from a native tree, cutting toxic runoff and restoring land while aligning with Minamata commitments and GBF targets.

2. Sixty years after the 'Silent Spring', the time has come to heed its call to curb harmful chemicals The phase-out of DDT and other pesticides under the Stockholm Convention has led to the rebound of once endangered wildlife; such as the bald eagle, which recovered from near-extinction after DDT bans. This demonstrates that sound chemical regulation can reverse biodiversity loss.

3. Lake Saint-Pierre Collaborative Restoration Initiative In Canada's Lake Saint-Pierre UNESCO reserve, government, farmers, and scientists formed a hub to adopt sustainable farming practices, curbing agricultural runoff and rehabilitating wetlands to protect freshwater biodiversity.

4. Bern Process The Bern Process (led by UNEP) aims to address technical and governance gaps as a mechanism to drive GBF implementation across all MEAs, including those on pollution. It fosters dialogue, coordination and collaboration between MEAs in support of the effective and synergetic development and implementation of the KM-GBF.

References

[1] Secretariats of the Basel, Rotterdam and Stockholm Conventions, & Minamata Convention on Mercury. (2021). Interlinkages between chemicals and waste multilateral environmental agreements and biodiversity: Key insights. United Nations Environment Programme.

[2] Convention on Biological Diversity. (2022). Decision 15/4: Kunming–Montreal Global Biodiversity Framework. https://www.cbd.int/gbf

[3] United Nations Environment Programme. (2025). Contributions of the chemicals and waste international agreements and frameworks to the Kunming–Montreal Global Biodiversity Framework (UNEP/GFC/OEWG.1/INF.9). Open-ended Working Group of the Global Framework on Chemicals, First meeting, Punta del Este, Uruguay, 24–27 June 2025.

[4] United Nations Environment Programme. (2019). Global chemicals outlook II: From legacies to innovative solutions. https://www.unep.org

[5] International Union for Conservation of Nature. (2022). The IUCN Red List of Threatened Species. https://www.iucnredlist.org

[6] Quandahor, P., Kim, L., Kim, M., Lee, K., Kusi, F., & Jeong, I.-H. (2024). Effects of agricultural pesticides on decline in insect species and individual numbers. Environments, 11(8), 182. https://doi.org/10.3390/environments11080182

[7] Jones, E. R., Bierkens, M. F. P., van Puijenbroek, P. J. T. M., van Beek, L. P. H., Wanders, N., Sutanudjaja, E. H., & van Vliet, M. T. H. (2023). Sub-Saharan Africa will increasingly become the dominant hotspot of surface water pollution. Nature Water, 1, 602–613. https://doi.org/10.1038/s44221-023-00105-5

[8] Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. (2019). Global assessment report on biodiversity and ecosystem services. IPBES Secretariat. https://ipbes.net/global-assessment

[9] United Nations Environment Programme. (2026). Integrating chemical pollution into National Biodiversity Strategies and Action Plans (NBSAPs): Guidance for revision and implementation (Internal draft, January 2026).

[10] United Nations Environment Programme. (2023). Global Framework on Chemicals – For a planet free of harm from chemicals and waste. https://www.unep.org/resources/global-framework-chemicals-planet-free-harm-chemicals-and-waste

[11] Minamata Convention on Mercury. (2023). Key facts on the interlinkages between biodiversity and mercury pollution. https://minamataconvention.org/en/key-facts-interlinkages-between-biodiversity-and-mercury-pollution

[12] United Nations Environment Programme. (2025). Stockholm Convention on Persistent Organic Pollutants (POPs): Text and annexes (Revised 2025). Secretariat of the Stockholm Convention.

[13] United Nations Environment Programme. (2019). Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal: Texts and annexes (Revised 2019). Secretariat of the Basel Convention.

[14] Organisation for Economic Co-operation and Development. (2019). Global material resources outlook to 2060: Economic drivers and environmental consequences. OECD Publishing. https://doi.org/10.1787/9789264307452-en

Inter-Organization Programme for the Sound Management of Chemicals. (2024). Inter-Organization Programme for the Sound Management of Chemicals (IOMC): Overview. World Health Organization. https://partnership.who.int/iomc

Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade. (1998). Rotterdam Convention. United Nations Environment Programme. https://www.pic.int

United Nations. (2015). Transforming our world: The 2030 Agenda for Sustainable Development. https://sdgs.un.org/2030agenda

United Nations Environment Assembly. (2024). Resolution UNEP/EA.6/Res.4: Promoting synergies, cooperation or collaboration for national implementation of multilateral environmental agreements and other relevant environmental instruments. United Nations Environment Programme.

United Nations Environment Programme. (2024). Capacity-building workshop on the implementation of biodiversity, chemicals and waste multilateral environmental agreements and the Montevideo Programme V: Background document. https://www.unep.org/events/workshop/implementation-biodiversity-chemicals-and-waste-meas-and-montevideo-programme-v

United Nations Environment Programme Global Mercury Partnership. (n.d.). Artisanal and small-scale gold mining and biodiversity. https://www.unep.org/globalmercurypartnership/what-we-do/artisanal-and-small-scale-gold-mining-asgm/ASGM-and-biodiversity

United Nations Environment Programme Global Mercury Partnership. (n.d.). Our work. https://www.unep.org/globalmercurypartnership/our-work

United Nations. (n.d.). Sustainable Development Goals. United Nations. https://sdgs.un.org/goals

World Health Organization. (2022). Chemicals and health. https://www.who.int

Secretariats of the Basel, Rotterdam and Stockholm Conventions, & Global Chemicals Framework. (2025). Report on the contributions of the chemicals and waste international agreements and frameworks to the Kunming-Montreal Global Biodiversity Framework. https://www.brsmeas.org/2025COPs/Meetingsdocuments/tabid/10057/language/en-US/Default.aspx