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Dear Delegates,

Welcome to the 2019 National Model United Nations New York Conference (NMUN•NY)! We are pleased to welcome you to the United Nations Environment Assembly (UNEA). This year's staff are: Directors Vincent Carrier (Conference A) and Lauren Kiser (Conference B), and Assistant Directors Carley Casebeer (Conference A) and Miranda Coleman (Conference B). Vincent completed his MSc in Biology at Laval University and is currently pursuing a PhD in Molecular Microbiology at the Arctic University of Norway in Tromsø and an MBA in Strategic Projects Management. Lauren has an MA in Global Finance, Trade and Economic Integration and currently works as a Project Developer for a utility-scale renewable energy company. Carley holds a BA in Political Science from MacEwan University and is currently completing her MPPA at Carleton University in Ottawa. Miranda holds a BA with an emphasis in History and a BEd, and is currently teaching in Edmonton, Alberta, Canada.

The topics under discussion for the United Nations Environment Assembly are:

1. Addressing Marine Plastic Litter and Microplastics
2. Preventing and Reducing Air Pollution to Improve Air Quality Globally
3. Promoting the Responsible Disposal of Electronic and Hazardous Waste

As the governing council of the UN Environment Programme, UNEA is the world's highest-level decision-making entity on matters concerning the environment. Membership of UNEA has been universal following a 2012 decision by the United Nations (UN) General Assembly, with Member States meeting biennially to provide leadership and establish priorities for environmental protection, foster intergovernmental collaboration, and build partnerships with civil society, the academic community, the private sector and other stakeholders. Delegates of UNEA will be tasked to develop effective solutions to realize the environmental dimension of the *2030 Agenda for Sustainable Development*.

This Background Guide serves as an introduction to the topics for this committee. However, it is not intended to replace individual research. We encourage you to explore your Member State's policies in depth and use the Annotated Bibliography and Bibliography to further your knowledge on these topics. In preparation for the Conference, each delegation will submit a [Position Paper](#) by 11:59 p.m. (Eastern) on 1 March 2019 in accordance with the guidelines in the [NMUN Position Paper Guide](#).

Two resources, available to download from the [NMUN website](#), that serve as essential instruments in preparing for the Conference and as a reference during committee sessions are the:

1. [NMUN Delegate Preparation Guide](#) - explains each step in the delegate process, from pre-Conference research to the committee debate and resolution drafting processes. Please take note of the information on plagiarism, and the prohibition on pre-written working papers and resolutions. Delegates should not start discussion on the topics with other members of their committee until the first committee session.
2. [NMUN Rules of Procedure](#) - include the long and short form of the rules, as well as an explanatory narrative and example script of the flow of procedure.

In addition, please review the mandatory [NMUN Conduct Expectations](#) on the NMUN website. They include the Conference dress code and other expectations of all attendees. We want to emphasize that any instances of sexual harassment or discrimination based on race, gender, sexual orientation, national origin, religion, age, or disability will not be tolerated. If you have any questions concerning your preparation for the committee or the Conference itself, please contact the Under-Secretaries-General for the Development Department, Aiskell Roman (Conference A) and Marleen Schreier (Conference B), at usg.dev@nmun.org.

We wish you all the best in your preparations and look forward to seeing you at the Conference!

Conference A

Vincent Carrier, Director
Carley Casebeer, Assistant Director

Conference B

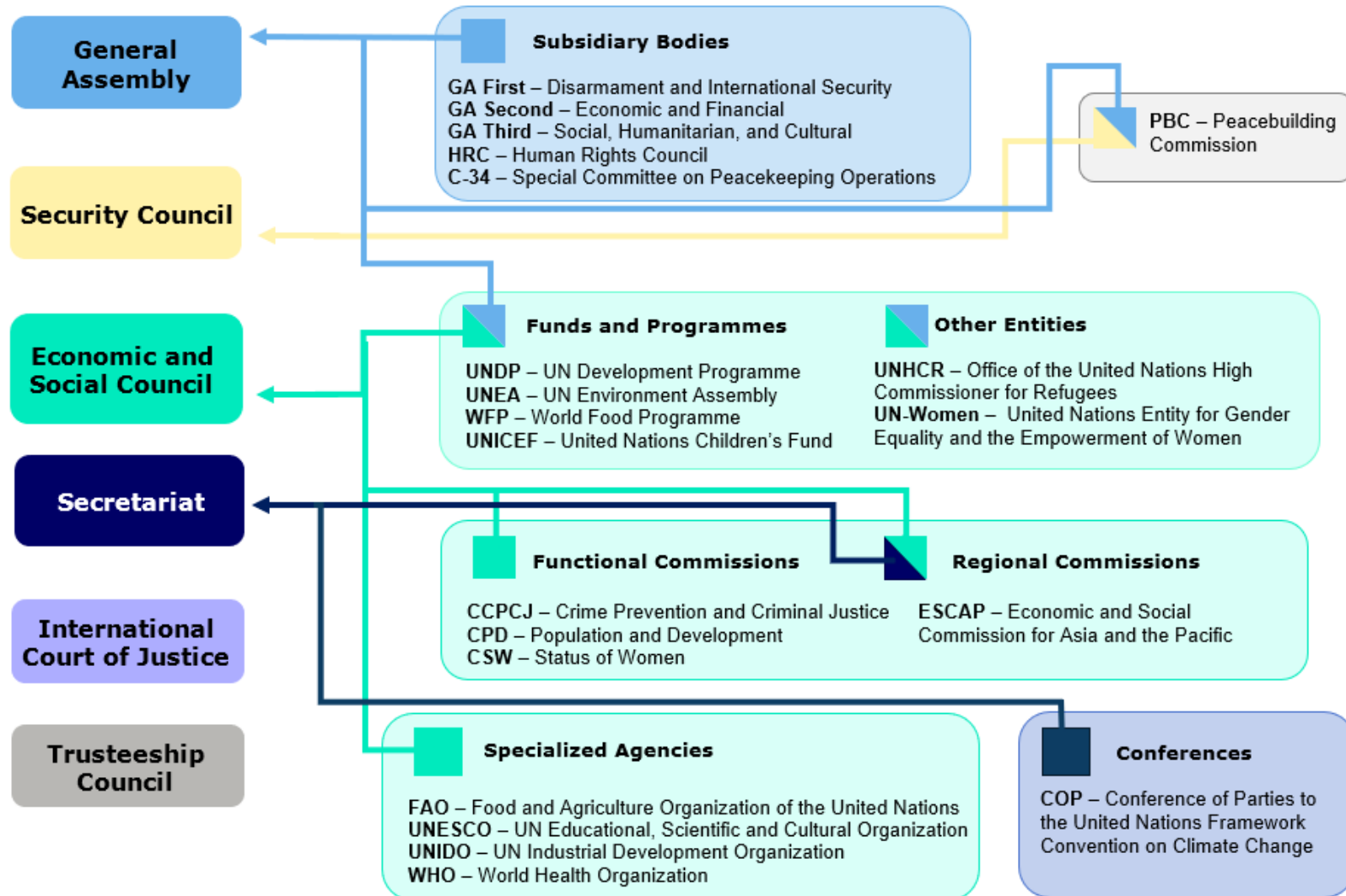
Lauren Kiser, Director
Miranda Coleman, Assistant Director

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United Nations System at NMUN•NY

This diagram illustrates the UN system simulated at NMUN•NY and demonstrates the reportage and relationships between entities. Examine the diagram alongside the Committee Overview to gain a clear picture of the committee's position, purpose, and powers within the UN system.



Committee Overview

Introduction

The mission of the United Nations Environment Programme (UN Environment) is to “provide leadership and encourage partnership in caring for the environment” toward environmentally friendly practices and policies in the United Nations (UN) system.¹ It is a programme and fund of the UN that ensures international, regional, and local coordination for environmental issues, and it also ensures that various other UN entities take environmental impacts into account when executing their missions.² UN Environment reports to the General Assembly and the Economic and Social Council (ECOSOC).³

UN Environment was created at the recommendation of the 1972 UN Conference on Human Environment in Stockholm, Sweden.⁴ Six months later, the General Assembly adopted resolution 2997 (XXVII) of 1972 on “Institutional and financial arrangements for international environmental cooperation,” which established UN Environment as the official body concerned with environmental issues within the UN.⁵ Since 1972, UN Environment has played a significant role in coordinating environmental policy across various UN agencies.⁶ UN Environment helped in the planning and execution of the UN Conference on Environment and Development (UNCED) in 1992, which led to the adoption of the *Rio Declaration on Environment and Development* (1992) as well as *Agenda 21* (1992).⁷ These landmark agreements provided further guidance and renewed support for UN Environment’s role in international cooperation on environmental protection.⁸ UNCED marked a turning point for international collaboration to preserve biodiversity and the climate, with the *Convention on Biological Diversity* and the *UN Framework Convention on Climate Change* opened for signature at the summit and the *Convention to Combat Desertification* (1994) adopted in its aftermath.⁹ While the three Rio Conventions are each administered by a secretariat of their own, UN Environment played a key role in negotiating the conventions and was tasked with promoting their implementation through *Agenda 21*.¹⁰ Twenty years after the adoption of the Rio Declaration, the UN Conference on Sustainable Development (Rio+20) called for the creation of the United Nations Environment Assembly to better execute the mandate of UN Environment and place environmental issues in the same standing as health, security, and economics.¹¹

To better promote environmentally friendly practices and the coordination of environmental affairs, the General Assembly adopted resolution 67/251 of 2013 on “Change of the designation of the Governing Council of the United Nations Environment Programme,” which formally established the Environment Assembly.¹² Through its universal membership, the Assembly aims to strengthen the role of UN Environment in international affairs and increase the responsiveness and accountability of Member States in developing environmental policy.¹³ The Assembly has held three universal sessions since its creation.¹⁴

¹ UN Environment, *About UN Environment*.

² New Zealand Ministry of Foreign Affairs and Trade, *United Nations Handbook 2017-18*, 2017, p. 256.

³ *Ibid.*, p. 257.

⁴ United Nations Conference on the Human Environment, *Report of the United Nations Conference on the Human Environment (A/CONF.48/14/Rev.1), Chapter I: Declaration of the United Nations Conference on the Human Environment*, 1972.

⁵ UN General Assembly, *Institutional and financial arrangements for international environmental co-operation (A/RES/2997(XXVII))*, 1972.

⁶ New Zealand Ministry of Foreign Affairs and Trade, *United Nations Handbook 2017-18*, 2017, pp. 256-257.

⁷ UN Environment, *Four Decades of Environmental Leadership*.

⁸ UN Environment, *The First 40 Years: A Narrative by Stanley Johnson*, 2012, pp. 137-139.

⁹ Convention on Biological Diversity, *The Rio Conventions*.

¹⁰ UN Environment, *The First 40 Years: A Narrative by Stanley Johnson*, 2012, pp. 155-156.

¹¹ UN General Assembly, *The Future We Want (A/RES/66/288)*, 2012, p. 18.

¹² UN General Assembly, *Change of the designation of the Governing Council of the United Nations Environment Programme (A/RES/67/251)*, 2013.

¹³ UN Environment, *About the UN Environmental Assembly*; UN General Assembly, *Report of the Governing Council of the United Nations Environment Programme on its twelfth special session and the implementation of*

At NMUN•NY 2019, we are simulating the Environment Assembly in terms of composition and size. In addition to making budgetary and programmatic decisions for the United Nations Environment Programme, the Assembly may propose global priorities, policies, and legal frameworks under the mandate of UN Environment.

Governance, Structure, and Membership

The UN Environment Assembly serves as the governing body for UN Environment.¹⁵ The Assembly replaced the former Governing Council of 58 members, which oversaw UN Environment from its inception until 2013.¹⁶ Comprised of all Member States, the Assembly meets biennially to set the global environmental agenda, to discuss emerging environmental challenges, and to provide guidance to UN Environment in its strategic plans of actions.¹⁷ The UN Environment Secretariat is responsible for supporting the Environment Assembly and consists of a rotating President, three Vice-Presidents, and a Rapporteur.¹⁸ The Committee of Permanent Representatives, which meets at least four times a year, is a permanent subsidiary body of the Assembly that prepares its meetings, monitors the implementation of its decisions, and provides advice to UN Environment between the sessions of the Assembly.¹⁹ It is composed of all accredited Permanent Representatives to UN Environment and thereby represents an important link between the programme and national governments.²⁰ In addition to the core funding it receives through the UN Regular Budget, UN Environment collects financial contributions from Member States to implement its global and regional work through its Environment Fund.²¹ Member States' financial contributions to the fund are based upon the Voluntary Indicative Scale of Contributions, which takes into account their respective economic and social situation.²² Additional funds for project implementation are generated through Earmarked Contributions and the Global Environment Facility (GEF), which together account for 91% of UN Environment's annual expenditures.²³

Aside from its headquarters in Nairobi, Kenya, UN Environment has six offices dispersed globally that undertake projects on regional and local levels.²⁴ Each office holds yearly Regional Consultation Meetings where representatives from various civil society organizations (CSOs) and other stakeholders are invited to engage in an environmental policy dialogue.²⁵ Those offices bring any concerns or ideas from these meetings to the next Environment Assembly meeting for wider discussion and possible implementation.²⁶

Mandate, Functions, and Powers

Upon the adoption of General Assembly resolution 2997 (XXVII) of 1972 on "Institutional and financial arrangements for international environmental cooperation," UN Environment was established with a mandate to promote international and regional environmental cooperation, develop environmental policy,

section IV.C, entitled "Environmental pillar in the context of sustainable development", of the outcome document of the United Nations Conference on Sustainable Development (A/RES/67/213), 2012, p. 3.

¹⁴ UN Environment, *About the UN Environment Assembly*.

¹⁵ UN Environment, *Organizational Structure*.

¹⁶ UN General Assembly, *Institutional and financial arrangements for international environmental co-operation (A/RES/2997(XXVII))*, 1972.

¹⁷ UN Environment, *About the UN Environment Assembly*.

¹⁸ UN General Assembly, *Change of the designation of the Governing Council of the United Nations Environment Programme (A/67/784)*, 2013.

¹⁹ UN Environment, *Committee of Permanent Representatives: Overview*.

²⁰ *Ibid.*

²¹ UN Environment, *Funding for UN Environment*.

²² *Ibid.*

²³ UN Environment, *Funding Facts*.

²⁴ UN Environment, *Civil society engagement*.

²⁵ *Ibid.*

²⁶ *Ibid.*

highlight global and regional problems, facilitate the transfer of scientific knowledge, assist developing Member States in environmental matters, review reports of the Executive Director, and approve the annual program on the allocation of the Environment Fund.²⁷ With the creation of the Environment Assembly as a governing body with universal membership pursuant to the Rio+20 conference, UN Environment's mandate was reaffirmed with stronger accountability toward Member States in implementing this mandate.²⁸

The first expansion of UN Environment's mandate came after the 1992 Rio summit via *Agenda 21*, which outlined a list of priority areas for its future work and called for the programme to gain "access to greater expertise and provision of adequate financial resources" as well as closer collaboration with the rest of the UN system to fulfil these new tasks.²⁹ On the occasion of its 25th anniversary, the Governing Council of UN Environment held an extensive discussion on the future role of the programme that resulted in the adoption of the *Nairobi Declaration on the Role and Mandate of the United Nations Environment Programme* (1997).³⁰ With a view to the special session of the General Assembly later that year that was scheduled to review the implementation of *Agenda 21*, the declaration represented a call to governments and the UN system to acknowledge UN Environment's leadership role.³¹ The General Assembly endorsed the Nairobi Declaration and reaffirmed that "UN Environment is to be the leading global environmental authority that sets the global environmental agenda."³²

This assessment was further corroborated in the course of the UN reform agenda of Secretary-General Kofi Annan, who advocated for strengthening UN Environment's role as "the focal point for harmonization and coordination of environment-related activities."³³ In October 1998, per the guidance of the Secretary-General's Task Force on environment and human settlements, the General Assembly put forth a set of recommendations that would further modify UN Environment's mandate.³⁴ As a result, the Executive Director of UN Environment was placed in charge of a new committee called the Environment Management Group.³⁵ The key purpose of the Environment Management Group is to coordinate and facilitate access to relevant information and findings concerning the environment and human settlements, in order to ensure the most efficient and cost-effective allocation of resources and information.³⁶

Upon the adoption of the Nairobi Declaration at the 19th session of the UN Environment Governing Council in 1997, UN Environment realigned its core mandate to ensure a more modern and technological approach to environmental issues.³⁷ The new core mandate made UN Environment responsible for using the best available scientific methods and evidence to analyze global environmental trends, utilizing early warning systems, furthering the development of international environmental law and policy, monitoring and fostering Member State compliance with existing international environmental norms, strengthening its role in coordinating UN environmental activities, serving as a link between the scientific community and the UN, and providing key policy advice for UN bodies, governments, and other institutions.³⁸ In 2002, the

²⁷ UN General Assembly, *Institutional and financial arrangements for international environmental co-operation (A/RES/2997(XXVII))*, 1972.

²⁸ UN General Assembly, *The Future We Want (A/RES/66/288)*, 2012, p. 18.

²⁹ UNCED, *Agenda 21*, 1992, par. 38.21-38.23.

³⁰ Governing Council of UN Environment, *Proceedings of the Governing Council at its Nineteenth Session (UNEP/GC.19/34)*, 1997, pp. 52-56.

³¹ UN Environment, *The First 40 Years: A Narrative by Stanley Johnson*, 2012, p. 155.

³² UN General Assembly, *Programme for the Further Implementation of Agenda 21 (A/RES/S-19/2)*, 1997, par. 123.

³³ UN General Assembly, *Renewing the United Nations: A Programme for Reform (A/51/950)*, p. 58.

³⁴ UN General Assembly, *Environment and human settlements: Report of the Secretary-General (A/53/463)*, 1998.

³⁵ *Ibid.*

³⁶ *Ibid.*

³⁷ Governing Council of UN Environment, *Proceedings of the Governing Council at its Nineteenth Session (UNEP/GC.19/34)*, 1997, pp. 52-56.

³⁸ New Zealand Ministry of Foreign Affairs and Trade, *United Nations Handbook 2017-18*, 2017.

Johannesburg Declaration on Sustainable Development called upon UN Environment and its partners to cooperate more closely across sustainable development initiatives for the implementation of *Agenda 21*.³⁹

Guided by the broader substantive priorities of UN Environment, the Environment Assembly is tasked to make major strategic decisions for UN Environment, provide political guidance for state and regional programs, and promote scientifically based environmental policies.⁴⁰ With the move toward universal membership, the vision for the Environment Assembly is to ensure better monitoring and foster of Member State compliance in environmental protection while creating an atmosphere for collaboration between Member States, UN entities, and CSOs.⁴¹

UN Environment ensures the implementation of the Environment Assembly's agenda by promoting international cooperation on existing environmental policies, guides the creation of new environmental policies, and uses environmental awareness to help Member States and CSOs respond to environmental threats.⁴² UN Environment also monitors the state of the global environment on both an international and regional scale and shares that information with interested parties.⁴³ Under the direction of the Environment Assembly, UN Environment works to develop international environmental law and ensure the proper use of environmental information and instruments.⁴⁴ To help achieve its mandate, UN Environment has the ability to create task forces and subsidiaries to implement environmental policies.⁴⁵ However, the General Assembly or ECOSOC must approve any resolutions adopted by the Environment Assembly on environmental policy or creating new bodies.⁴⁶

Recent Sessions and Current Priorities

With the adoption of the 2030 Agenda, the responsibility of UN Environment has further moved toward realizing environmental protection as part of an integrated vision of sustainable development rather than within a silo of its own.⁴⁷ UN Environment assesses that 86 of the 169 targets across the 17 Sustainable Development Goals (SDGs) are concerned with environmental sustainability.⁴⁸ The paradigm change toward an integrated approach is reflected in the *Medium Term Strategy 2018-2021* that envisions UN Environment to "provide an environmental lens through which to view, understand and advise on sustainable development."⁴⁹ UN Environment's vision for 2030 is built upon the benefits of sustainable natural resource use for sustainable development, the reduction of social and economic cost through improvements in environmental sustainability, and finally the increased well-being of marginalized populations as a consequence of integrating environmental considerations into development planning.⁵⁰ To work toward its vision, UN Environment has established in its *Medium-Term Strategy 2018-2021* five operating principles that guide the agency's actions and decisions.⁵¹ Those principles include the adoption of a globally coherent and locally responsive approach, the use of results-based management, the development of synergy from strategic partnerships between stakeholders, the strengthening of

³⁹ World Summit on Sustainable Development, *Report of the World Summit on Sustainable Development (A/CONF.199/20)*, 2002.

⁴⁰ UN Environment, *About the UN Environment Assembly*.

⁴¹ UN General Assembly, *The Future We Want (A/RES/66/288)*, 2012, pp. 17-18.

⁴² UNSCEB, *United Nations Environment Programme*.

⁴³ UN Environment, *Programme Performance Report 2016*, 2016, pp. 57.

⁴⁴ *Ibid.*, pp. 32.

⁴⁵ UNSCEB, *United Nations Environment Programme*.

⁴⁶ *Ibid.*

⁴⁷ UN General Assembly, *Transforming our world: the 2030 Agenda for Sustainable Development (A/RES/70/1)*, 2015; UN Environment Assembly, *Delivering on the environmental dimensions of the 2030 Agenda: Information note of the Executive Director (UNEP/EA.2/INF/4)*, 2016.

⁴⁸ UN Environment Assembly, *Delivering on the environmental dimensions of the 2030 Agenda: Information note of the Executive Director (UNEP/EA.2/INF/4)*, 2016, p. 1.

⁴⁹ UN Environment, *Medium-Term Strategy 2018-2021*, 2016, p. 2.

⁵⁰ *Ibid.*, p. 12.

⁵¹ *Ibid.*, p. 16.

regional presence to tailor efforts to the needs of regions, and the integration of environment-related frameworks in other UN entities' thematic or functional areas.⁵²

UN Environment currently operates under seven thematic priorities: climate change; resilience to disasters and conflicts; healthy and productive ecosystems; environmental governance; chemicals, waste and air quality; resource efficiency; and environment under review.⁵³ The *Medium-Term Strategy 2018-2021* outlines long-term goals under each of the thematic areas that are operationalized in more detail in two biennial programmes of work, following outcome maps that sketch out logical paths toward long-term goals.⁵⁴ UN Environment is now encouraged to adopt a more results-oriented planning approach that maintains focus on long-term outcomes.⁵⁵ In response to increasing resource demands and changing demographics, the *Medium-Term Strategy 2018-2021* focuses on improving utilization of natural resources and sound management of waste that influence the social and economic dimensions of sustainable development.⁵⁶

The upcoming meeting of the Environment Assembly, UNEA-4, will be held from 11-15 March 2019 under the overarching topic of "Innovative solutions for environmental challenges and sustainable consumption and production."⁵⁷ Environment Assembly members will particularly focus on enabling globally innovative solutions to environmental challenges and favoring sustainable consumption and production.⁵⁸ Stakeholders will address necessary mechanisms and supports, such as the enhancement of partnerships with the private sector and the civil society, to create favorable conditions for innovation.⁵⁹ Members will develop strategies to better implement the *10-Year Framework of Programmes on Sustainable Consumption and Production*.⁶⁰ The Framework of Programmes supports the shift toward sustainable consumption and production in various areas, such as sustainable tourism, buildings, and construction.⁶¹

Conclusion

UN Environment is the UN's official programme concerned with the environment and put into actions recommendations adopted by the Environment Assembly, its governing body.⁶² The reform process that UN Environment underwent throughout the 1990s consolidated the thematic leadership role of the programme within the UN system.⁶³ The recent creation of the Environment Assembly represents another key step in UN Environment's mission to ensure that the work of all UN entities, Member States, and CSOs are environmentally sustainable and in line with international laws and norms concerning the environment.⁶⁴ The creation of an environmental entity with universal membership that oversees the world's environmental policy agenda reflects the growing importance of environmental issues and allows for an integrated approach to environmental protection through the *2030 Agenda for Sustainable Development*.⁶⁵ By combating pollution and enhancing sustainable production and consumption, the Assembly is in a lead role to resolve these challenges threatening global sustainable development.⁶⁶

⁵² Ibid., p. 16.

⁵³ Ibid.

⁵⁴ Ibid., p. 18.

⁵⁵ Ibid., p. 18.

⁵⁶ Ibid., pp. 2-4.

⁵⁷ UN Environment, *UN Environment Assembly and Governing Council*.

⁵⁸ UN Environment Assembly, *Concept note for the theme of the 4th United Nations Environment Assembly*, 2018.

⁵⁹ Ibid.

⁶⁰ Ibid.

⁶¹ UN Environment, *The 10-YFP Framework of Programmes on Sustainable Consumption and Production*, 2017.

⁶² New Zealand Ministry of Foreign Affairs and Trade, *United Nations Handbook 2017-18*, 2017, p. 256.

⁶³ UN Environment, *The First 40 Years: A Narrative by Stanley Johnson*, 2012, p. 155.

⁶⁴ World Summit on Sustainable Development, *Report of the World Summit on Sustainable Development (A/CONF.199/20)*, 2002.

⁶⁵ UN Environment Assembly, *Delivering on the environmental dimensions of the 2030 Agenda: Information note of the Executive Director (UNEP/EA.2/INF/4)*, 2016.

⁶⁶ UN Environment, *UN Environment Assembly and Governing Council*.

Annotated Bibliography

United Nations Environment Assembly of the United Nations Environment Programme. (2016). *Delivering on the environmental dimensions of the 2030 Agenda: Information note of the Executive Director (UNEP/EA.2/INF/4)*. Retrieved 3 September 2018 from: <http://undocs.org/UNEP/EA.2/INF/4>

In this information note delivered to the High-Level Segment of UNEA-2 (2016), UNEP's Executive Director outlines the strategic vision of the programme for the implementation of the 2030 Agenda. According to UN Environment's assessment, at least 86 of the 169 SDG targets are immediately concerned with environmental sustainability. The note presents a detailed overview of the links between UN Environment's agenda and the SDGs and suggests a number of overarching principles and concrete measures to ensure that the programme contribute to the success of the 2030 Agenda. Through this resource, delegates can acquire a better understanding of UNEP's role in the 2030 Agenda, including its institutional connections within the UN system.

United Nations Environment Assembly of the United Nations Environment Programme, Third session. (2017). *Ministerial declaration of the United Nations Environment at its third session: Toward a pollution-free planet (UNEP/EA.3/HLS.1)*. Retrieved 6 July 2018 from: <http://www.undocs.org/UNEP/EA.3/HLS.1>

The document is a key declaration from the third session of the Environment Assembly, which highlights the mobilization of government leaders to make the necessary efforts toward a pollution-free planet. Delegates will benefit of an overview of the different angles that the Member States plan to address challenges of pollution, including the development and transfer of environmentally sound technologies and the promotion of adapted fiscal measures. The document is therefore of high relevance ahead of reading the topics presented in the background guide.

United Nations Environment Assembly of the United Nations Environment Programme, Third session. (2017). *Proceedings of the United Nations Environment Assembly at its third session (UNEP/EA.3/2)*. Retrieved 7 July 2018 from: <http://www.undocs.org/UNEP/EA.3/2>

The document provides the official records of the third session of the Environment Assembly. In addition of a list of the resolutions and decisions adopted by the Assembly, delegates will also gain valuable key messages recorded from the leaders and multi-stakeholder dialogues that addressed the role of science and technologies, of laws and regulations, and practical solutions toward a pollution-free planet. Similar but less exhaustive, records of the session can also be retrieved from the General Assembly report (A/73/25) with a list of priorities recommended to the General Assembly and the Economic and Social Council.

United Nations Environment Assembly of the United Nations Environment Programme. (2018). *Concept note on the theme of the fourth session of the United Nations Environment Assembly*. Retrieved 15 September 2018 from: https://papersmart.unon.org/resolution/uploads/2018-09-03_concept_note_-_theme_unea_4_rev2_after_informal_consultations_tracked.hon_rev_jlc_clean3.pdf

This document provides stakeholders with guidance to help them prepare for the upcoming fourth session of the Assembly. This concept note invites participants to focus on innovative solutions on selected focus areas of sustainable production and consumption. The goal of upcoming fourth session would be to incorporate innovative solutions to promote sustainable global resource efficiency while promoting economic and social development. The delegates will benefit from this document on additional support in their research and on taking position to address the different topics.

United Nations Environment Programme. (n.d.). *About the UN Environment Assembly* [Website]. Retrieved 12 August 2018 from: <http://www.unep.org/environmentassembly/about-un-environment-assembly>

This website provides a basic overview of the Assembly and its role within the UN Environment's governance structure, including its history and mandate, and why its role within the broader UN system. This resource represents an entry point for delegates to begin their research on the committee, as it provides an overview of the body's functions as well as links to the documentation of past sessions and current thematic priorities of the Assembly. It is also here that preparatory material for the upcoming session of the Assembly is collected. This website should help delegates to easily distinguish between UN Environment and the Assembly and understand how they are connected to each other.

United Nations Environment Programme. (2016). *Medium Term Strategy 2018-2021*. Retrieved 12 August 2018 from:

http://apps.unep.org/publications/index.php?option=com_pub&task=download&file=012120_en

This is the next Medium-Term Strategy for UN Environment, which will take effect in 2018 when the current Medium-Term Strategy expires. The document provides a situation analysis of the state of the environment across the seven priority areas of work, and briefly outlines what has been achieved through the previous Medium-Term Strategy (more information is provided in the 2016 Programme Performance Report). This document is of particular importance for the delegates as it outlines the connection between UN Environment's priority areas and the 2030 Agenda for Sustainable Development through the programme's "Vision 2030."

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New Zealand, Ministry of Foreign Affairs and Trade. (2017). *United Nations Handbook 2017-18*. Retrieved 12 August 2018 from: https://www.mfat.govt.nz/assets/Peace-and-Security/United_Nations_Handbook_2017_18.pdf

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United Nations Environment Assembly of the United Nations Environment Programme. (2017). *Report of the third session of the United Nations Environment Assembly of the United Nations Environment Programme*. Retrieved 12 August 2018 from:

<https://papersmart.unon.org/resolution/uploads/k1800379.english.pdf>

United Nations Environment Assembly of the United Nations Environment Programme. (2018). *Concept note on the theme of the fourth session of the United Nations Environment Assembly*. Retrieved 15 September 2018 from:

https://papersmart.unon.org/resolution/uploads/2018-09-03_concept_note_-_theme_unea_4_rev2_after_informal_consultations_tracked.hon_rev_jlc_clean3.pdf

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<http://www.unep.org/about/cpr/who-we-are/overview>

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I. Addressing Marine Plastic Litter and Microplastics

“Marine plastic litter is a rapidly increasing threat to marine life, seafood safety and negatively affects the lives of people in coastal areas all around the world.”⁶⁷

Introduction

The United Nations Environment Programme (UN Environment) defines marine litter as any “manufactured or processed solid material which is discarded... in the marine and coastal environment” in the 1995 *Global Programme of Action for the Protection of the Marine Environment From Land-Based Activities*.⁶⁸ Scientists estimate that plastics make up between 90-95% of the 6.4 million tons of litter which enter marine ecosystems every year.⁶⁹ Approximately 80% of this plastic waste begins on land, carried to the ocean by wind or drainages systems.⁷⁰ This means that approximately one garbage truck of plastic enters the ocean systems every minute worldwide.⁷¹ Microplastics are plastic particles that are 5mm or smaller, typically shed from the washing of synthetic fabrics, the breakage of larger pieces of plastic, and microbeads in hygiene products.⁷² In 2017, scientists found microplastics in the stomachs of deep-sea creatures living in remote areas, previously thought to be untouched by marine litter.⁷³ When ingested, microplastics cannot be broken down in the bodies of sea life and instead can release harmful toxins and block their digestive systems.⁷⁴ Scientists are not sure how many microplastics exist in the oceans, but a recent study on rivers in the United Kingdom showed that in 2015-2016 40 billion plastic particles were washed into the ocean in the region alone.⁷⁵ Every year, plastic pollutants cause more than \$8 billion of damage to fishing and tourism industries globally.⁷⁶

Plastic pollutants have devastating effects on the environment, biodiversity, and human health.⁷⁷ For instance, coral that comes into contact with plastic litter and microplastics are 89% more likely to develop disease.⁷⁸ Scientists estimate more than 100 million marine animals die each year after coming into contact with microplastics and marine litter.⁷⁹ Plastics can absorb hazardous contaminants like polychlorinated biphenyl (PCB) and Dichlorodiphenyltrichloroethane (DDT), which are highly toxic when ingested.⁸⁰ These chemicals can accumulate in humans and can cause endocrine damage and cancer.⁸¹ The United Nations (UN) has made the reduction and removal of plastic waste from oceans, rivers, and lakes a priority to protect marine ecosystems and human health.⁸²

International and Regional Framework

In 1982, the *United Nations Convention on the Law of the Sea* established Member State responsibilities to address increasing pollution in marine environments.⁸³ At the 1992 UN Conference on Environment

⁶⁷ UN Environment, *UN Declares War on Ocean Plastic*, 2017.

⁶⁸ UN Environment, *Global Programme of Action for the Protection of the Marine Environment From Land-Based Activities (UNEP(OCA)/LBA/IG.2/7)*, 1995.

⁶⁹ UN Environment, *Marine Litter*.

⁷⁰ Greenpeace, *Plastic Debris in the World's Oceans*, 2006.

⁷¹ Pennington, Every Minute, One Garbage Truck of Plastic is Dumped Into our Oceans. This Has to Stop, *World Economic Forum*, 2016.

⁷² Marine Litter Solutions, *What are Microplastics?*, 2016.

⁷³ Taylor, Plastics Found in Stomachs of Deepest Sea Creatures, *The Guardian*, 2017.

⁷⁴ World Atlas, *What Are Microplastics And Why Are They Bad?*, 2018.

⁷⁵ Carrington, Microplastic Pollution in Oceans Is Far Worse than Feared, Say Scientists, *The Guardian*, 2018.

⁷⁶ UN Environment, *UN Declares War on Ocean Plastic*, 2018.

⁷⁷ Hurley et al., *Microplastic Contamination of River Beds Significantly Reduced by Catchment-Wide Flooding*, 2018, pp. 251–257.

⁷⁸ Lamb et al., *Plastic Waste Associated with Disease on Coral Reefs*, 2018.

⁷⁹ Sea Turtle Conservancy, *Information About Sea Turtles: Threats from Marine Debris*, 2017.

⁸⁰ Center for Biological Diversity, *Ocean Plastics Pollution: A Global Tragedy for Our Oceans and Sea Life*.

⁸¹ Ibid.

⁸² UN Environment, *UN Declares War on Ocean Plastic*, 2018.

⁸³ Ibid.

and Development (UNCED), Member States adopted *Agenda 21*, a resolution that calls for the strengthening of international efforts to reduce and address damage to oceans.⁸⁴ Following this, UN Environment adopted the *Washington Declaration on the Protection of Marine Environment from Land-Based Activities* in 1995, which calls for sustainable and remedial action to combat existing litter in marine ecosystems and prevent further accumulation and pollution.⁸⁵ The declaration encourages Member States to use sustainable alternatives, develop programs to address land-based litter, and increase funding for these activities.⁸⁶ This spurred UN Environment to adopt the 1995 *Global Programme of Action for the Protection of the Marine Environment from Land-Based Action* (GPA), which outlines a framework for identifying and prioritizing marine litter concerns, including providing potential strategies and evaluation criteria to determine the effectiveness of those strategies.⁸⁷ Some strategies include improving waste management systems, introducing sustainable production practices, and substituting potentially harmful products for similar environmentally-sustainable products.⁸⁸

At the 2002 World Summit on Sustainable Development, Member States adopted the *Johannesburg Declaration on Sustainable Development* and the *Plan of Implementation of the World Summit on Sustainable Development*, calling for Member States to commit to tangible environmental change with suggested deadlines.⁸⁹ The Johannesburg Declaration commitments include the establishment of Marine Protected Areas (MPA) by 2012 and the creation and implementation of national legislation protecting the marine environment from land-based activities.⁹⁰ As of 2018, MPAs make up only 3.4% of the earth's oceans and less than 1% of the high seas.⁹¹ MPAs are predominantly coastal and have the strongest legal protections in developed states.⁹² During the 2012 World Ocean Summit, Member States discussed the need for further action in combating plastic marine litter.⁹³ At the summit, Member States adopted the resolution "The Future We Want," which calls for substantial reduction in marine debris by 2025 and the completion of a globally integrated assessment on the environmental state of the oceans by 2014.⁹⁴

In 2015, the UN General Assembly adopted the *2030 Agenda for Sustainable Development* with 17 Sustainable Development Goals (SDGs) guiding the international community's action toward creating a socially, economically, and environmentally sustainable world.⁹⁵ The harmful effects of marine plastic litter and microplastics create a major challenge in achieving the SDGs, particularly SDG 13 on climate action and SDG 14 on life below water.⁹⁶ SDG 3 on human well-being is also affected by the consumption of seafood and water that contains or has come into contact with plastic pollutants.⁹⁷ SDG 12 on responsible production and consumption calls for a significant reduction in global plastic production and sustainable consumption practices as well as efficient and effective waste management systems to reduce the release of waste and pollutants into water systems.⁹⁸

During the recent UN Ocean Conference in 2017, the UN General Assembly adopted resolution 71/312 "Our Ocean, Our Future: Call for Action" which encourages Member States to decrease or eliminate the

⁸⁴ UNCED, *Agenda 21*, 1992.

⁸⁵ UN Environment, *Washington Declaration on the Protection of the Marine Environment from Land-Based Activities*, 1995.

⁸⁶ *Ibid.*

⁸⁷ UN Environment, *Global Programme of Action for the Protection of the Marine Environment From Land-Based Activities (UNEP(OCA)/LBA/IG.2/7)*, 1995.

⁸⁸ *Ibid.*

⁸⁹ UN WSSD, *Plan of Implementation of the World Summit on Sustainable Development*, 2002.

⁹⁰ *Ibid.*

⁹¹ Marine Conservation Institute, *Atlas of Marine Protection*, 2018.

⁹² *Ibid.*

⁹³ Global Ocean Forum et al., *Oceans Day at Rio+20*, 2012.

⁹⁴ UN General Assembly, *The Future We Want (A/RES/66/288)*, 2012.

⁹⁵ UN General Assembly, *Transforming our world: the 2030 Agenda for Sustainable Development (A/RES/70/1)*, 2015.

⁹⁶ *Ibid.*

⁹⁷ *Ibid.*

⁹⁸ *Ibid.*

production of single use plastics and microplastic beads to prevent further damage to marine environments.⁹⁹ With the adoption of United Nations Environment Assembly (UNEA) resolutions 1/6 (2014), 2/11 (2016) and 3/7 (2018) on marine plastic pollution and microplastics, UN Environment created an international foundation to call further attention to this topic and encourage action by Member States.¹⁰⁰ For example, in UNEA resolution 2/11 “Marine Plastic Litter and Micro-Plastics” the body encourages legislation that will reduce the production of goods that directly contribute to the accumulation of microplastics in water systems, such as microbeads in personal care products.¹⁰¹ In 2017, UN Environment published *Towards a Pollution Free Planet*, a report that outlines transformative economic actions, such as incentivizing sustainable consumption and production practices, and calls for efficient targeted pollutant intervention, particularly of plastics.¹⁰²

Role of the International System

UN Environment recognizes the need to minimize the effects of marine plastic litter and microplastics on marine biodiversity, human health, and sustainable development.¹⁰³ UN Environment also serves as the Secretariat for the GPA.¹⁰⁴ The GPA has been adopted by 108 Member States who meet to evaluate the effective implementation of strategies related to the program every five years; the first meeting was in Canada in 2001 and the most recent meeting was held in Indonesia in 2017.¹⁰⁵ After the adoption of the Washington Declaration and the establishment of the GPA, the UN declared 1998 the International Year of the Ocean to encourage further action and to garner greater awareness on the degradation of the marine environment.¹⁰⁶ In 2012 at Rio+20, UN Environment established the Global Partnership on Marine Litter (GPML), which is made up of Member State representatives, non-governmental organizations, private businesses, and specialists, to combine resources in order to better protect marine environments.¹⁰⁷ The GPML aims to reduce the economic and health effects of marine litter, promote the *Honolulu Strategy* (2011), and monitors progress.¹⁰⁸

The *Honolulu Strategy* is a voluntary commitment to manage and prevent further damage to marine environments.¹⁰⁹ In partnership with GPML, UN Environment launched the Plastic Disclosure Project that surveys the amount of plastic waste businesses and organizations generate and the amount that is recycled, and compiles a report with strategies to reduce waste.¹¹⁰ In 2015, UN Environment and GPML published *Biodegradable Plastics & Marine Litter* to provide some scientific evidence on the advantages as well as disadvantages of biodegradable plastics in context of the marine environment.¹¹¹ It states that “the adoption of plastic products labelled as ‘biodegradable’ will not bring about a significant decrease either in the quantity of plastic entering the ocean or the risk of physical and chemical impacts on the marine environment.”¹¹² In 2016, UNEA met for its second session, where the body discussed the progress and remaining gaps in addressing marine plastic litter and microplastics.¹¹³

⁹⁹ UN General Assembly, *Our Ocean, Our Future: Call for Action (A/RES/71/312)*, 2017.

¹⁰⁰ UNEA, *Marine Litter Debris and Microplastics (UNEP/EA.1/RES.6)*, 2014; UNEA, *Marine plastic litter and microplastics (UNEP/EA.2/RES.11)*, 2016; UNEA, *Marine litter and microplastics (UNEP/EA.3/RES.7)*, 2018.

¹⁰¹ UNEA, *Marine plastic litter and microplastics (UNEP/EA.2/RES.11)*, 2016.

¹⁰² UN Environment, *Towards a Pollution-Free Planet*, 2017.

¹⁰³ UN General Assembly, *Our Ocean, Our Future: Call for Action (A/RES/71/312)*, 2017.

¹⁰⁴ National Oceanic and Atmospheric Administration, *Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities*.

¹⁰⁵ UN Environment, *Governing the Global Programme of Action*.

¹⁰⁶ UNESCO, *International Year of the Ocean*, 1998.

¹⁰⁷ UN Environment, *Global Partnership on Marine Litter*.

¹⁰⁸ *Ibid.*

¹⁰⁹ *Ibid.*

¹¹⁰ Plastic Disclosure Project, *Undertake the PDP*, 2018.

¹¹¹ UN Environment, *Biodegradable Plastics & Marine Litter*, 2015.

¹¹² *Ibid.*

¹¹³ UNEA, *Marine plastic litter and microplastics (UNEP/EA.2/RES.11)*, 2016.

At the 2017 G20 summit in Germany, the Group of 20 (G20) met to adopt the *G20 Action Plan on Marine Litter*.¹¹⁴ This Action Plan builds upon the related *G7 Action Plan to Combat Marine Litter* (2015) and G7 Workshop on Marine Litter: Mainstreaming the work of the Regional Sea Programmes toward the better implementation of the G7 Action Plan and the achievement of the global commitments on marine litter.¹¹⁵ In 2017, UN Environment initiated the Clean Seas Campaign, encouraging Member States to pass national legislation to ban or minimize single use plastics and microplastics in order to reach the goal of plastic free seas by 2050, as well as to conduct further research into mitigating their effects.¹¹⁶ In 2018, several Member States pledged to reduce their single use plastic consumption by 70% by 2025.¹¹⁷ As production and consumption of plastics increases, the international community has expressed a need to prioritize and reduce the millions of tons of marine plastic litter and microplastics already in our seas, while simultaneously working to mitigate their effects on the environment and global economies.¹¹⁸

In 2016, UNEA published *Marine Plastic Debris and Microplastics: Global Lessons and Research to Inspire Action and Guide Policy Change*; the report provides specific and actionable legislative examples to reduce plastic pollutants, like the Northwest Pacific Action Plan (NOWPAP).¹¹⁹ NOWPAP is a regional collective that hosts a database providing information on the quantity and effects of marine plastic litter for the region, as well as providing a system by which to monitor progress.¹²⁰ Published in 2014, the *Regional Action Plan on Marine Litter Management for the Wider Caribbean Region* (RAPMaLi), provides Small Island Developing States (SIDS) in the region with more sustainable waste management policies and practices.¹²¹ RAPMaLi is informed by policies suggested during The Third Global Conference on Land-Ocean Connections, an event that focused on bridging the gap between scientific research, private business, and governmental policies to ensure sustainable action.¹²² The Oslo/Paris Convention (OSPAR) is another regional entity working on this topic.¹²³ Established by 15 European states, OSPAR published the *Regional Action Plan for Prevention and Management of Marine Litter in the North-East Atlantic* (2014), providing a policy framework for OSPAR's commitment to reduce marine litter, as well as outlining future OSPAR initiatives and providing clear success indicators to monitor progress.¹²⁴

Effects of Marine Plastics on the Environment and Human Health

Experts estimate that since the mass production of plastic began in the 1950s, the earth has accumulated 8,300 million metric tons (MT) of plastic.¹²⁵ 79% of plastics produced each year end up in our environment, which take between 450-1,000 years to biodegrade.¹²⁶ In 2015, scientists conservatively estimated that there are 34 million MT of plastic in the open ocean, 29 million MT on the coastline and sea floor, and 23 million MT on coastal shores.¹²⁷ Of all marine plastic litter, only 0.5% of it is visible on the water's surface.¹²⁸ Plastic is particularly harmful to marine life when ingested as it absorbs and concentrates harmful chemicals from the surrounding environment, such as pesticides and pollutants,

¹¹⁴ Group of Twenty, *G20 Action Plan on Marine Litter*, 2017.

¹¹⁵ Ibid.

¹¹⁶ UN Environment, *UN Declares War on Ocean Plastic*, 2018.

¹¹⁷ Ibid

¹¹⁸ Carrington, Microplastic Pollution in Oceans Is Far Worse than Feared, Say Scientists, *The Guardian*, 2018.

¹¹⁹ UN Environment, *Marine Plastic Debris & Microplastics: Global Lessons and Research to Inspire Action and Guide Policy Change*, 2016.

¹²⁰ UN Environment, *Action Plan for the Protection, Management, and Development of the Marine and Coastal Environment of the North Pacific Region*, 1994.

¹²¹ UN Environment, *Regional Action Plan on Marine Litter Management for the Wider Caribbean Region*, 2014.

¹²² UN Environment, *Third Global Conference on Land-Ocean Connections*.

¹²³ OSPAR, *Regional Action Plan for Prevention and Management of Marine Litter in the North East Atlantic*, 2014.

¹²⁴ Ibid.

¹²⁵ Geyer et al., *Production, Use, and Fate of All Plastics Ever Made*, 2017.

¹²⁶ Ibid.

¹²⁷ Grid Arendal, *Marine Litter Vital Graphics*, 2016.

¹²⁸ Ibid.

and can transfer the contaminants to animal tissue.¹²⁹ Pollutants and chemicals accumulate in marine life as they make their way up the food chain, meaning humans may be exposed to high concentrations of persistent pollutants by eating seafood.¹³⁰ Hazardous pollutants, such as DDT, are absorbed by plastic litter and are known to cause mutations that lead to cancer and can damage organs and mammalian endocrine systems.¹³¹

Macroplastic litter effects marine biodiversity as animals are easily entangled, increasing the likelihood of strangulation.¹³² Soft plastics, such as single use plastic grocery bags, are often ingested by animals such as turtles, given their resemblance to jellyfish on the surface of the ocean.¹³³ Plastic buildup in turtle's stomachs increases their buoyancy causing them to float on the surface, leaving them vulnerable to predators, intestinal blockage, and starvation.¹³⁴ Microplastics are commonly eaten by a variety of aquatic animals including crustaceans, fish, and mammals.¹³⁵ Nano-sized microplastics can cross animal cell membranes and spread contaminants throughout the body, causing direct cell damage.¹³⁶

25% of fish sold in seafood markets on the Western coast of the United States of America and in Indonesia had plastic debris found inside of them.¹³⁷ Diethylhexyl phthalate, a chemical present in many plastics, is a known carcinogen and can cause tumors, developmental disorders, and birth defects.¹³⁸ Plastic litter contains traces of lead and mercury, toxins that are linked with endocrine and organ failure, and have been detected in fish caught for human consumption.¹³⁹ Health complications from human consumption of plastic could lead to a health crisis and cost states millions of dollars.¹⁴⁰

Addressing Existing Marine Plastic Litter: Cleaning the Oceans

Ocean currents are determined by large circulation systems, called gyres, which pull coastal plastic debris from coastlines into open water.¹⁴¹ These ocean current patterns have collected millions of tons of plastic litter into whirlpool like "garbage patches."¹⁴² These concentrated areas of marine litter often move with currents into areas densely populated by vulnerable microscopic marine life that are killed easily when removing plastics.¹⁴³ Microplastics are often too small to be filtered out of water in cleanup efforts and water treatment systems.¹⁴⁴ Removal is also extremely costly; scientists estimate that removing plastic debris from less than 1% of the northern Pacific Ocean could cost upwards of \$489 million per year.¹⁴⁵ Despite these large patches where plastic often accumulates, plastic litter is still widespread, restricting the efficiency and effectiveness of already limited resources to effectively remove it.¹⁴⁶ UN Environment's GPA notes that there is a need for further research, technical expertise, funding, and infrastructure to

¹²⁹ Joint Group of Experts on the Scientific Aspects of Marine Environment Protection, *Microplastics in the Ocean: A Global Assessment*, 2015.

¹³⁰ UN Environment, *Microplastics: Trouble in the Food Chain*, 2018.

¹³¹ Center for Biological Diversity, *Ocean Plastics Pollution: A Global Tragedy for Our Oceans and Sea Life*.

¹³² Greenpeace, *Plastic Debris in the World's Oceans*, 2006.

¹³³ Harrabin, Ocean Plastic a Planetary Crisis, *BBC*, 2017.

¹³⁴ *Ibid.*

¹³⁵ Joint Group of Experts on the Scientific Aspects of Marine Environment Protection, *Microplastics in the Ocean: A Global Assessment*, 2015.

¹³⁶ *Ibid.*

¹³⁷ UN Environment, *Microplastics: Trouble in the Food Chain*, 2018.

¹³⁸ Andrews, Plastics in the Ocean Affecting Human Health, *Teach the Earth*, 2018.

¹³⁹ *Ibid.*

¹⁴⁰ *Ibid.*

¹⁴¹ Pierre-Lois, Guess How Many Giant Patches of Garbage There Are in the Ocean Now?, *Popular Science*, 2017.

¹⁴² *Ibid.*

¹⁴³ National Oceanic and Atmospheric Administration, *How Much Would it Cost to Clean Up the Pacific Garbage Patches*, 2018.

¹⁴⁴ *Ibid.*

¹⁴⁵ *Ibid.*

¹⁴⁶ *Ibid.*

drastically reduce the quantity of marine plastic litter.¹⁴⁷ Despite these challenges, removing plastic from the oceans is critical to achieving SDG 14 on life below water, and specifically target 14.1, which calls for a significant reduction in marine pollution, including plastic debris, by 2025.¹⁴⁸ In addition, target 14.2 calls on Member States to take substantial action in the restoration of the oceans by 2020, a target that directly reflects the necessity and urgency in removing plastics from water systems.¹⁴⁹

The Ocean Cleanup project, launched on 8 September 2018, aims to gather up to 50% of the plastic debris in the Great Pacific Garbage Patch by 2023.¹⁵⁰ The project intends to gather larger marine plastic litter in very fine netting, but the mesh is unable to trap most microplastics.¹⁵¹ The project operates under the assumption that marine life can and will easily swim under this mesh but microscopic marine life is still considered to be vulnerable to entanglement.¹⁵² The Ocean Cleanup has been criticized for being costly by scientists who argue that the most cost effective and efficient way to remove plastic litter and microplastics from the oceans is to focus efforts on clearing beaches and coastal waters.¹⁵³ One such initiative is the International Coastal Cleanup, founded in 1987 by Ocean Conservancy, a nonprofit organization, which encourages individuals and organizations to gather and recycle coastal litter.¹⁵⁴ In 2017, the International Coastal Cleanup and its volunteers collected over 8 million kilograms of litter from coastal waters to be recycled.¹⁵⁵ The project spanned more than 24 thousand kilometers of beach and coast across the globe.¹⁵⁶ The gathering of plastic litter on beaches is effective in preventing some debris from entering the ocean, but does little to address microplastics already in coastal areas, or in deeper waters, as well as plastics in the open ocean and in gyres.¹⁵⁷

Preventing Further Accumulation of Plastics: Sustainable Production and Consumption

When plastics were initially manufactured, they quickly replaced glass, metals, and paper due to its durability, versatility, and how inexpensively it can be produced in mass quantities.¹⁵⁸ The rate at which plastic is produced is five times greater than the rate at which it is recycled.¹⁵⁹ There are thousands of different chemical combinations to create plastics that must be separated before recycling, or the mixing polymers will render the recycled products unusable.¹⁶⁰ Most waste management facilities only have the resources to recycle 2-3 kinds of plastic.¹⁶¹ Any plastic litter that is dropped or blown into low lying watersheds will drain into water systems, creating “trash streams.”¹⁶² The United States Environmental Protection Agency partnered with UN Environment and the GPA to launch the Trash Free Waters Program in 2017 to prevent further accumulation of litter entering water systems, by strengthening waste management, particularly in the Caribbean.¹⁶³

¹⁴⁷ UN Environment, *Global Programme of Action for the Protection of the Marine Environment From Land-Based Activities (UNEP(OCA)/LBA/IG.2/7)*, 1995.

¹⁴⁸ UN General Assembly, *Transforming our world: the 2030 Agenda for Sustainable Development (A/RES/70/1)*, 2015.

¹⁴⁹ Ibid.

¹⁵⁰ The Ocean Cleanup, *About the Ocean Cleanup*, 2018.

¹⁵¹ Dalton, World's First Ocean Plastic Clean-up Machine Set to Launch, *The Independent*, 2018.

¹⁵² Ibid.

¹⁵³ Ocean Conservancy, *Together for our Ocean*, 2017.

¹⁵⁴ Ibid.

¹⁵⁵ Ibid.

¹⁵⁶ Ibid.

¹⁵⁷ Dalton, World's First Ocean Plastic Clean-up Machine Set to Launch, *The Independent*, 2018.

¹⁵⁸ Khan, Plastic Fantastic, *Mother Jones*, 2009.

¹⁵⁹ Eureka Recycling, *Recycling Plastic: Complications and Limitations*.

¹⁶⁰ Ibid.

¹⁶¹ Ibid.

¹⁶² United States of America, *International Initiatives to Address Marine Debris*, 2018.

¹⁶³ Ibid.

Commitments made at Rio+20 for a significant reduction of marine plastic litter and microplastics by 2025 set a precedent for plastic-conscious production and consumption.¹⁶⁴ This calls for reducing Member State reliance on plastic materials.¹⁶⁵ Bans on the use of microbeads in cosmetics have been successful in cutting down on plastic waste, but bans of single-use plastics can slow development and increase poverty levels when alternatives are inaccessible.¹⁶⁶ Some Member States have passed legislation taxing single-use plastic bags, resulting in a reduction of disposable bag consumption.¹⁶⁷ Other Member States have initiated a complete ban on plastic bags but in cases where alternatives were inaccessible to all socioeconomic classes, this created a larger demand and plastic bag black markets.¹⁶⁸ Despite these challenges, some Member States have committed to becoming entirely plastic free by 2020.¹⁶⁹ Although bans reduce plastic production and consumption, accessible eco-friendly alternatives are needed.¹⁷⁰ UN Environment encourages Member States to make improvements in waste management systems by recycling more types of plastics, a commitment important for achieving many of the SDGs of the 2030 Agenda.¹⁷¹ More research and investment into plastic alternatives are needed to reduce current global plastic consumption, as well as more effective recycling and collecting of used plastics.¹⁷² SDG 12 on responsible production and consumption can guide Member States into frameworks that reduce the production of plastics, directly affecting the quantity of plastic litter entering water systems.¹⁷³

Conclusion

Marine plastic litter and microplastics damage marine ecosystems, impact seafood supply and quality, and harm human health and economic stability, affecting the achievement of many of the SDGs.¹⁷⁴ Oceans, rivers, and coastal waters must be cleared of plastic litter and microplastics to protect marine biodiversity and achieve SDG 14 on life below water.¹⁷⁵ Without drastic action, ineffective plastic waste management and the continued production of microplastics will result in the seas becoming home to more plastic waste than fish by 2050.¹⁷⁶ Member States hold a shared responsibility for the planet's oceans and the life that inhabits it, so swift and meaningful intervention on marine plastic litter and microplastics is of the utmost importance to UN Environment.¹⁷⁷

Further Research

Delegates should consider these questions to further their research: What are the major obstacles for Member States to implementing strategies to protect oceans from plastic litter? What steps can Member States take to phase out single-use plastics? How can Member States minimize microplastics entering oceans? How can the international community protect marine biodiversity from the effects of marine plastic litter and microplastics? How can Member States contribute to the efforts to remove macroplastic litter from seas? How can states minimize the negative effects on human health from plastic ingestion? How can they develop a green culture among citizens? What can the international community do in support Member States' efforts?

¹⁶⁴ UN General Assembly, *The Future We Want (A/RES/66/288)*, 2012.

¹⁶⁵ Grid Arendal, *Marine Litter Vital Graphics*, 2016.

¹⁶⁶ UN Environment, *Single Use Plastics: A Roadmap for Sustainability*, 2018, p. 49.

¹⁶⁷ Carrington, *Plastic microbeads ban enters force in UK*, 2018.

¹⁶⁸ UN Environment, *Single Use Plastics: A Roadmap for Sustainability*, 2018, p. 49.

¹⁶⁹ Hardin, *Rwanda Plastic Bag Ban*, *Plastic Oceans*, 2018.

¹⁷⁰ UN Environment, *Single Use Plastics: A Roadmap for Sustainability*, 2018, p. 18.

¹⁷¹ Ibid.

¹⁷² Wright, *The Known Unknowns of Plastic Pollution*, *The Economist*, 2018.

¹⁷³ UN General Assembly, *Transforming our world: the 2030 Agenda for Sustainable Development (A/RES/70/1)*, 2015.

¹⁷⁴ Center for Biological Diversity, *Ocean Plastics Pollution: A Global Tragedy for Our Oceans and Sea*.

¹⁷⁵ UN General Assembly, *Transforming our world: the 2030 Agenda for Sustainable Development (A/RES/70/1)*, 2015.

¹⁷⁶ Cronin, *There Will Be More Plastic in the Oceans Than Fish by 2050*, *One Green Planet*, 2018.

¹⁷⁷ UN Environment, *Global Partnership on Marine Litter*.

Annotated Bibliography

Beat The MicroBead. (2018). *Results so Far* [Website]. Retrieved 5 August 2018 from: <http://www.beatthemicrobead.org/results-so-far/>

Beat the MicroBead is a campaign to hold industry and production accountable while lobbying with state and local governments to ban microbeads from personal care products. The website lists all the related legislation and policies passed by various local and national governments around the world. The campaign also has a strong focus on spreading awareness through their app which scans product codes to inform consumers if their products and favorite brands contain microplastics. Delegates will find this source accessible and easy to read, as well as informative on all aspects of microbeads.

Geyer, R., et al. (2017). Production, Use, and Fate of All Plastics Ever Made. *Science Advances*, 3 (7). Retrieved 8 August 2018 from: <http://advances.sciencemag.org/content/3/7/e1700782.full>

This article, published by Science Advances, gives a detailed account of the large volume of plastics produced and how many of which have ended up in our lakes, rivers, and oceans. It explains why polymers cannot be broken down by the natural environment but how macroplastic litter can be broken up into microplastics. Delegates will find this source useful as it provides a technical explanations, as well as scientific background information, on the plastics in our oceans and how they got there.

Grid Arendal. (2016). *Marine Litter Vital Graphics* [Website]. Retrieved 5 August 2018 from: <http://www.grida.no/resources/6933>

This website has a variety of descriptive infographics on marine litter and microplastics. Delegates will find this source helpful as it visualizes vital information needed to understand what has been done and what needs to be done to mitigate plastic pollution. The Marine Plastics Global Policy Timeline is particularly useful as it outlines all the major documents and policies that have contributed to reducing the production and consumption of plastics.

Group of Twenty. (2017). *G20 Action Plan on Marine Litter*. Retrieved 4 July 2018 from: <https://www.mofa.go.jp/mofaj/files/000272290.pdf>

The G20 Action Plan on Marine Litter identifies areas of need and gaps in evidence-based knowledge on this topic while promoting actionable policies. Delegates will find this source useful as it identifies areas of need, such as data collection and plastic litter prevention, in a concise manner. The document also describes the economic benefits of policies that reduce plastic consumption as well as suggests way to improve waste management. Delegates will find this source to be informative and succinct, as well as a launching point for research as it lists relevant resolutions in its annex.

United Nations Environment Assembly of the United Nations Environment Programme. (2016). *UN Environment Assembly-2 outcome Marine Plastic Litter and Microplastics* [Presentation]. Retrieved 4 July 2018 from: http://www.un.org/depts/los/consultative_process/ICP17_Presentations/Savelli.pdf

Created by UN Environment, this presentation illustrates key aspects of several related UN documents. It emphasizes the need for further discussion, awareness, and action while prioritizing gaps to be addressed, such as a need for further research and innovation on the effects of plastic litter and how to remove it from marine environments. This document lists recent global campaigns, such as the Global Campaign on Marine Litter, as well as effective regional initiatives. This source is useful to delegates in finding key documents, as well as listing important notes regarding those documents.

United Nations Environment Assembly of the United Nations Environment Programme. (2017). *Combating marine plastic litter and microplastics: An assessment of the effectiveness of relevant international, regional and subregional governance strategies and approaches (UNEP/EA.3/INF/5)* [Resolution]. Retrieved 4 July 2018 from: <http://undocs.org/unep/ea.3/inf/5>

UN Environment conducted this assessment to acknowledge the existing efforts in combating marine plastic litter and microplastics. The resolution suggests effective regional and international strategies, such as improvements to waste management systems. Delegates will see that this assessment analyzes current frameworks to address marine plastic litter and microplastics and suggests ways that Member States can incorporate policies and legislation relating to industry. This source is particularly helpful as it is an assessment of the effectiveness of past UNEA recommendations and provides potential solutions to move forward. Delegates will gain an understanding of legislation and policies related to the topic.

United Nations Environment Assembly of the United Nations Environment Programme. (2018). *Marine Litter and Microplastics (UNEP/EA.3/Res.7)* [Resolution]. Retrieved 4 July 2018 from: <http://undocs.org/unes/ea.3/res.7>

Adopted in Nairobi, Kenya in December 2017, this is the most recent resolution adopted by UNEA on "Marine Plastics and Microplastics." This document prioritizes the "cleaning up" of plastic and microplastics in the world's oceans through gathering and extracting macroplastic waste. In this document, Member States commit to implementing policies that would halt the increase of plastic litter and microplastics in marine systems by 2025. This document gives a very recent outline of the direction that UNEA is heading in, in the fight against marine plastic litter and microplastics.

United Nations Environment Programme. (1995). *Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities (UNEP(OCA)/LBA/IG.2/7)* [Resolution]. Retrieved 5 August 2018 from: <https://papersmart.unon.org/resolution/uploads/1995-gpa.pdf>

This source is an essential document for understanding the very foundations of work that the UN Environment has taken to combat marine plastic litter. The document outlines evaluation criteria to assess the effectiveness of policies and strategies to reduce marine litter, as well as a legal and institutional framework for current and future bodies under UN Environment addressing this topic. Delegates will find this document indispensable to understanding the roles, responsibilities, and mandates of programs and projects that aim to protect the oceans from plastics.

United Nations Environment Programme. (2018). *Microplastics: Trouble in the Food Chain* [Report]. Retrieved 5 August 2018 from: https://uneplive.unep.org/media/docs/early_warning/microplastics.pdf

This source details how plastic enters the food chain and threatens human health. Delegates will gain an understanding of the urgent and serious threat plastics pose to biodiversity and humans. For example, the report explains how contaminants are absorbed by microplastics before being ingested and how those harmful chemicals can accumulate as it rises in the food chain.

United Nations Environment Programme. (2018). *Single Use Plastics: A Roadmap for Sustainability* [Report]. Retrieved 4 July 2018 from: https://wedocs.UNEnvironment.org/bitstream/handle/20.500.11822/25496/singleUsePlastic_sustainability.pdf?sequence=1&isAllowed=y

This document goes into great detail about why single-use plastics, such as plastic grocery bags, are particularly damaging to the environment and gives suggestions for Member States to mitigate the plastic crisis. In this document, UN Environment discusses plastics entering marine ecosystems and how plastic damages the oceanic environment. The document emphasizes the need for waste management systems, reduction agreements, and legislative policies. The document also provides delegates with case studies from around the world that list the challenges and shortfalls from specific policies and highlights key successes.

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II. Preventing and Reducing Air Pollution to Improve Air Quality Globally

Introduction

The United Nations (UN) Statistics Division defines air pollution as “the presence of contaminant or pollutant substance in the air that do not disperse properly and that interfere with human health, welfare, or produce other harmful environmental effects.”¹⁷⁸ Air quality is determined by the levels of pollution in the air and the amount of time people are exposed to the pollution, which results in adverse health outcomes.¹⁷⁹ The primary contaminants that harm human health and the environment are particulate matter such as dust and soot, liquids, and gases such as nitrogen oxides, ozone, and sulfur dioxide.¹⁸⁰ Inhaling these substances can cause detrimental health effects such as heart attacks, lung disease, and cancer.¹⁸¹ Air pollution is one of the world’s leading causes of premature deaths, accounting for one in nine deaths per year.¹⁸² Additionally, air pollution has negative consequences for the global economy, reducing gross domestic product by 5-10% annually due to loss of life, people’s reduced ability to work, negative effects on agriculture, damages to cultural and natural heritage, and damages to ecosystems.¹⁸³ These impacts are not only costly because of decreasing productivity but also require Member States to perform costly remediation and restoration activities of impacted areas.¹⁸⁴

Air pollution impacts quality of life, health outcomes, and economic development, which reflect many of the pillars of sustainable development.¹⁸⁵ Reducing air pollution is critical to meeting the Sustainable Development Goals (SDGs) set out in the *2030 Agenda for Sustainable Development* (2030 Agenda), including SDG 3 on health and well-being, SDG 12 on responsible consumption and production, and SDG 11 on sustainable cities and communities.¹⁸⁶ At the same time meeting SDG 7 on affordable and clean energy and SDG 13 on climate action will contribute to reducing air pollution globally.¹⁸⁷ The United Nations Environment Programme (UN Environment) contributes to achieving the SDGs by leading the environmental response of the UN system in a coherent and cohesive manner.¹⁸⁸ Air pollution was an important topic of discussion on the agenda of the third session of the United Nations Environment Assembly (UNEA).¹⁸⁹ Reducing air pollution globally will require investments in nearly every sector of the economy, from manufacturing, transportation, and energy generation, to transforming urban and rural communities to become more sustainable and energy efficient.¹⁹⁰ Collaboration across the UN system, Member States, civil society, the private sector, and non-governmental organizations (NGOs) will be critical to reducing global air pollution.¹⁹¹

International and Regional Framework

At the first intergovernmental conference on the environment held in Stockholm in 1972, the United Nations Conference on the Human Environment adopted the *Declaration of the United Nations Conference on the Human Environment*.¹⁹² The declaration notes the increasing threat of pollution and

¹⁷⁸ UN Data, *Glossary*; EDF, *Health impacts of air pollution*, 2018.

¹⁷⁹ UN Data, *Glossary*.

¹⁸⁰ OECD, *The Economic Consequences of Outdoor Air Pollution*, 2016.

¹⁸¹ EDF, *Health impacts of air pollution*, 2018.

¹⁸² *Ibid.*

¹⁸³ UN Environment, *Air*; UNECE, *Air pollution and economic development*.

¹⁸⁴ UNECE, *Air pollution and economic development*.

¹⁸⁵ UNECE, *Air pollution and economic development*; UN ECOSOC, *Sustainable Development*.

¹⁸⁶ UN DESA, *Sustainable Development Goal 3*; UN DESA, *Sustainable Development Goal 12*; UN DESA, *Sustainable Development Goal 11*.

¹⁸⁷ UN DESA, *Sustainable Development Goal 7*; UN DESA, *Sustainable Development Goal 13*.

¹⁸⁸ UN Environment, *Medium Term Strategy 2018-2021*.

¹⁸⁹ UN Environment Assembly, *Preventing and reducing air pollution to improve air quality globally (UNEP/EA.3/RES.8)*, 2017.

¹⁹⁰ UN Environment, *Towards a Pollution-Free Planet*, 2017.

¹⁹¹ *Ibid.*, p. 8.

¹⁹² Weiss, *The Evolution of International Environmental Law*, 2011, p. 4.

links the protection of the environment to human rights, including the right to live with dignity and well-being.¹⁹³ The declaration calls upon Member States to protect the environment in numerous ways, particularly through principle 21, which states that Member States can use their own resources at their own discretion but also bear the responsibility to ensure that those activities do not cause harm to other Member States.¹⁹⁴ Building upon principle 21, the United Nations Economic Commission of Europe (UNECE) adopted the 1979 *Convention on Long-Range Transboundary Air Pollution*, the first international treaty to tackle air pollution on a regional level.¹⁹⁵ Whereas the 1972 Declaration calls upon Member States to uphold certain principles related to the human environment, the 1979 Convention obligates the contracting parties to share information on and review air pollution reduction policies and monitor their progress.¹⁹⁶ Eight Protocols to the Convention identify additional pollutants to under the 1979 Convention and expand Member States' commitments to reduce air pollution.¹⁹⁷

The cross-sectorial link between air pollution and climate change was only recently incorporated into policy discussions, while earlier international agreements tended to address air pollution and climate change independently.¹⁹⁸ However, addressing climate change and greenhouse gas (GHG) emissions contributes to reducing air pollution and improving air quality globally, as many activities that emit air pollutants also emit GHG emissions.¹⁹⁹ Short-lived climate pollutants, such as ground-level ozone, also contribute to overall atmospheric GHG levels and climate change.²⁰⁰ As a result, international agreements such as the 1992 *United Nations Framework Convention on Climate Change* (UNFCCC), which aims to reduce GHG emissions, indirectly support efforts to reduce air pollution.²⁰¹ The UNFCCC commits States parties to reduce their GHG emissions caused by human activity, also known as anthropogenic GHG emissions, to pre-1990 levels.²⁰² Under the *Kyoto Protocol to the UNFCCC*, adopted in 1997 Member States committed to reduce their annual emissions by 2012 to 5% below their 1990 levels.²⁰³

UN General Assembly resolution 70/1 of 2015, "Transforming our world: the 2030 Agenda for Sustainable Development" (2030 Agenda) and the 2015 *Paris Agreement* reflect UN Environment's recommendations on reducing air pollution in its Ministerial Outcome Document of 2014.²⁰⁴ Under the *Paris Agreement*, Member States commit to reduce anthropogenic GHG emissions in order to hold global temperature increase to below two degrees Celsius, which will also improve global air quality and reduce overall pollution.²⁰⁵ The issue of air quality is addressed across the 2030 Agenda and many of the SDGs are directly related to reduction in air pollutants, such as SDG target 3.9 indicator 1 on "reducing premature mortality due to indoor and outdoor pollution," SDG target 11.6 indicator 2 on "reducing annual average levels of particulate matter in cities," or indirectly such as SDG target 7.2 on "increasing the mix of renewable energy" in the global energy mix.²⁰⁶ Reducing air pollution is also linked to achieving SDG 12 because chemicals during production of many different goods can be released into the air and to SDG

¹⁹³ UN Conference on the Human Environment, *Declaration of the United Nations Conference on the Human Environment*, 1979.

¹⁹⁴ Weiss, *The Evolution of International Environmental Law*, 2011, p. 5.

¹⁹⁵ UNECE, *The Convention and its achievements*.

¹⁹⁶ UNECE, *1979 Convention on Long-Range Transboundary Air Pollution*, 1979.

¹⁹⁷ UNECE, *The Convention and its achievements*.

¹⁹⁸ UNECE, *Air pollution and climate change*.

¹⁹⁹ Ibid

²⁰⁰ UNECE, *Improving air quality while fighting climate change*.

²⁰¹ UNECE, *Air pollution and climate change*; UNCED, *United Nations Framework Convention on Climate Change*, 1992.

²⁰² UNCED, *United Nations Framework Convention on Climate Change*, 1992.

²⁰³ COP 3, *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, 1998.

²⁰⁴ UN General Assembly, *Transforming our world: the 2030 Agenda for Sustainable Development (A/RES/70/1)*, 2015; COP 21, *Paris Agreement*, 2015; UN Environment Assembly, *Resolutions and decisions adopted by the United Nations Environment Assembly of the United Nations Environment Programme at its first session on 27 June 2014*, 2014, pp. 2-4.

²⁰⁵ COP 21, *Paris Agreement*, 2015; UNECE, *Improving air quality while fighting climate change*.

²⁰⁶ UN DESA, *Sustainable Development Goal 3*; UN DESA, *Sustainable Development Goal 11*; UN DESA, *Sustainable Development Goal 7*.

target 9.4 on “updating industry infrastructure to reduce emissions and improve energy efficiency.”²⁰⁷ Similarly, meeting SDG target 13.2 on “integrating climate change measures in national policy,” is important to reduce GHG emissions, many of which are also air pollutants.²⁰⁸ While many of the targets relate directly to reducing air pollution, failure to reduce air pollution can impede the success of meeting other SDGs such as SDG 15 on terrestrial life as air pollution can mix with precipitation and cause acid rain that threatens ecosystems.²⁰⁹

These goals and targets are further exemplified in the *New Urban Agenda* (2016) adopted during the Third United Nations Conference on Housing and Sustainable Urban Development (Habitat III).²¹⁰ The *New Urban Agenda* calls upon Member States to meet several goals to achieve sustainable urban development.²¹¹ According to the World Health Organization (WHO), many cities with a population of 100,000 or more do not meet WHO air quality guidelines; according to WHO’s most recent measurements, these deficiencies affect 97% of cities in low- and middle-income countries and 49% of cities in high-income countries.²¹²

Role of the International System

UN Environment leads the environmental response of the UN system through policy setting, the monitoring of progress toward meeting international environmental obligations, and coordinating with other UN agencies, civil society, NGOs, Member States, and the private sector to encourage collaboration in addressing environmental issues.²¹³

Air pollution and air quality were important topics of discussion at UNEA-1 in June 2014.²¹⁴ With the adoption of the Ministerial Outcome Document in 2014, the Assembly reaffirmed the importance of integrating environmental issues into the post-2015 development agenda.²¹⁵ Member States adopted resolution 1/7 of 2014 on “Strengthening the role of the United Nations Environment Programme in promoting air quality” which encourages Member States to take action to improve air quality, formulate action plans to address ambient air quality standards, share air quality data with the public, and report their results and experiences to UN Environment.²¹⁶ The Assembly committed to strengthen UN Environment’s ability to support Member States, to raise public awareness on the risks of air pollution to human health and the environment, and to deepen UN Environment’s cooperation across the international system to address air pollution and air quality.²¹⁷ Furthermore, at the 68th session of the World Health Assembly, delegates adopted resolution 68/8 on “Health and the environment: addressing the health impact of air pollution,” urging Member States to prevent pollution exposure and mitigate impacts on health.²¹⁸ The resolution encourages Member States to advise their populations on how to reduce their exposure to air pollution, to develop air quality standards, and to incorporate WHO guidelines on outdoor and indoor air quality into their national standards.²¹⁹ At UNEA-3 in 2017, Member States adopted resolution 8 on “Preventing and reducing air pollution to improve air quality globally,” which encourages Member States to monitor air pollution levels, set indoor and outdoor air pollution standards

²⁰⁷ UN DESA, *Sustainable Development Goal 12*; UN DESA, *Sustainable Development Goal 9*.

²⁰⁸ UN DESA, *Sustainable Development Goal 12*; UN DESA, *Sustainable Development Goal 13*.

²⁰⁹ UNICEF, *Clear the air for the children*, 2016.

²¹⁰ UN General Assembly, *New Urban Agenda (A/RES/71/256)*, 2016.

²¹¹ *Ibid.*

²¹² WHO, *WHO Global Ambient Air Quality Database*, 2018.

²¹³ UN Environment, *Why does UN Environment Matter?*

²¹⁴ UN Environment, *UN Environment Assembly and Governing Council*.

²¹⁵ UN Environment Assembly, *Resolutions and decisions adopted by the United Nations Environment Assembly of the United Nations Environment Programme at its first session on 27 June 2014*, 2014, pp. 2-4.

²¹⁶ UN Environment Assembly, *Resolutions and decisions adopted by the United Nations Environment Assembly of the United Nations Environment Programme at its first session on 27 June 2014*, 2014, pp. 23-24.

²¹⁷ *Ibid.*, pp. 23-24.

²¹⁸ WHA, *Health and the environment: addressing the health impact of air pollution (WHA/68/8)*, 2015.

²¹⁹ *Ibid.*

in line with WHO guidelines, and include short-lived climate pollutants in national programs to reduce pollution.²²⁰

Furthermore, UN Environment leads and participates in the BreatheLife campaign launched in 2016 with WHO, and the Climate and Clean Air Coalition (CCAC).²²¹ The CCAC is a partnership of the private sector, civil society, and governments to reduce short-lived climate pollutants.²²² Through the platform of BreatheLife, cities can share best practices for meeting WHO air quality targets with other cities.²²³ The campaign works with municipalities to expand monitoring of air pollution and air quality and supports municipalities in implementing solutions to reduce air pollution.²²⁴ For example, BreatheLife promotes the use of cleaner burning stoves to reduce indoor air pollution, rooftop photovoltaic solar panels to reduce the need for fossil fuel burning energy, energy conservation, and the use of public transportation.²²⁵

WHO leads the Global Platform on Air Quality and Health, along with UN Environment, the World Bank, the United Nations Human Settlements Programme (UN-Habitat), and other international organizations and Member States, convening expert consultations to develop and monitor air pollution reduction programs.²²⁶ The meetings of the Global Platform are intended to guide WHO and other organizations on how to reduce air pollution and improve air quality.²²⁷ The third meeting of the Global Platform in 2017 reviewed progress, identified gaps in reducing pollution, proposed next steps for the Global Platform, and made recommendations on how to meet these proposals.²²⁸ The Global Platform noted the progress achieved in expanding data collection in order to assess and monitor SDG indicator 3.9.1 on “mortality due to household and outdoor air pollution,” SDG indicator 7.1.2 on “use of clean fuels and technologies for cooking,” and SDG indicator 11.6.1 on “levels of particulate matter in cities.”²²⁹

As part of this framework, UN Environment developed a low-cost air quality-monitoring network using UN Environment Air Quality Units for Member States to measure key pollutants such as sulfur dioxide, nitrous oxide, and ozone.²³⁰ The cost of the network is between \$100,000 and \$200,000 whereas single monitoring devices can cost as much as \$250,000.²³¹ In addition, the data collected from these units is available online and is supplemented by data collected by satellites and reports by the Global Platform on Air Quality and Health.²³² Furthermore, the UN Environment Air Quality Monitoring Unit blueprints are published online which increases access and allows Member States and other organizations to purchase the materials to assemble the units themselves and innovate on improving the units’ data collection quality.²³³

At the Eighth Environment for Europe Ministerial Conference, the Bureau of the Executive Body for the *1979 Convention on Long-Range Transboundary Air Pollution* approved the *Batumi Action for Cleaner Air (2016-2021)*.²³⁴ The Batumi Action is a regional effort to improve air quality through policy guidance and assistance, knowledge sharing and awareness campaigns, and Member State accountability.²³⁵ Noting

²²⁰ UN Environment Assembly, *Preventing and reducing air pollution to improve air quality globally (UNEP/EA.3/RES.8)*, 2017.

²²¹ UN Environment, *Air*.

²²² UN Environment, *Towards a Pollution-Free Planet*, 2017, p. 40.

²²³ BreatheLife, *About the campaign*, 2016.

²²⁴ *Ibid.*

²²⁵ BreatheLife, *Solutions*, 2016; BreatheLife, *Citywide solutions*, 2016; BreatheLife, *Actions for individuals*, 2016.

²²⁶ WHO, *Public health, environmental and social determinants of health (PHE)*, 2018.

²²⁷ *Ibid.*

²²⁸ Global Platform on Air Quality and Health, *3rd Meeting of the Global Platform on Air Quality and Health, Madrid, 7-9 March 2017 – Meeting Report*, 2017.

²²⁹ *Ibid.*, pp. 4-5.

²³⁰ UN Environment, *UNEP Air Quality Monitoring System*.

²³¹ *Ibid.*

²³² *Ibid.*

²³³ *Ibid.*

²³⁴ CCAC, *Batumi Action for Cleaner Air (2016-2021)*.

²³⁵ UNECE, *Batumi Action for Cleaner Air (2016-2021) (ECE/BATUMI.CONF/2016/7)*, 2016.

that circumstances are unique to each Member State's situation, the Batumi Action does not prescribe the types of actions or policies that would be the most effective or appropriate.²³⁶ However, it suggests that Member States could, where appropriate, establish transparent monitoring systems of air pollution, control and reduce emissions of common air pollutants such as particulate matter and sulfur, and improve the general public's knowledge of the dangers of air pollution and means individuals can take to reduce their emissions.²³⁷

Air Pollution Impacts on Human Health

Yearly, approximately 7 million people die prematurely due to the effects of poor air quality.²³⁸ Air pollution takes place both indoors and outdoors.²³⁹ Cooking, heating, and lighting are major contributors of indoor air pollution.²⁴⁰ It accounts for roughly 3.8 million of air pollution-related premature deaths; 800,000 of these deaths are children under the age of five.²⁴¹ Outdoor air pollution is caused both by human sources such as power generation, transportation, and other industrial processes, and by natural causes such as sand or dust storms.²⁴²

Approximately half of the world's population continues to rely on traditional biomass sources of fuel such as wood, crop waste and dung, or coal; combined with the use of poorly ventilated stoves for cooking and heating, these are major contributors to indoor air pollution.²⁴³ Women and children who often bear the responsibility of cooking and cleaning within the home are disproportionately affected by indoor air pollution.²⁴⁴ It causes non-communicable diseases such as stroke, ischemic heart disease, chronic pulmonary lung disease, and lung cancer.²⁴⁵ Children can contract pneumonia due to the inhalation of particulate matter caused by indoor air pollution, which causes nearly half of all childhood pneumonia deaths.²⁴⁶ Studies have also linked air pollution to impacts on children's lung development, asthma, and respiratory infections.²⁴⁷ Additionally, air pollution exposure during pregnancy can result in low birth weight and preterm births.²⁴⁸

Public-private partnerships such as the Global Alliance for Clean Cookstoves contribute to reducing indoor air pollution by raising awareness of the importance of clean cookstoves and fuels and strengthening the supply of clean cookstoves.²⁴⁹ The Global Alliance furthers innovation and secures financing for suppliers to produce at scale and more cost effectively.²⁵⁰ Affordability of clean cookstoves can be an issue for consumers.²⁵¹ This means that innovative solutions need to be developed to ensure that consumers can purchase the stoves.²⁵² Some producers have offered in-house financing to consumers and fuel companies have been offering pay-as-you-go service for fuel in more affordable quantities.²⁵³ Since 2010, almost 90 million clean or energy efficient cookstoves have been distributed.²⁵⁴

²³⁶ UNECE, *Batumi Action for Cleaner Air (2016-2021) (ECE/BATUMI.CONF/2016/7)*, 2016.

²³⁷ *Ibid.*

²³⁸ WHO, *Air pollution*, 2018.

²³⁹ UN Environment, *Air*.

²⁴⁰ *Ibid.*

²⁴¹ *Ibid.*

²⁴² *Ibid.*

²⁴³ WHO, *Household air pollution and health*, 2018; Business Action for Energy, *Air Pollution*.

²⁴⁴ WHO, *Household air pollution and health*, 2018.

²⁴⁵ *Ibid.*

²⁴⁶ *Ibid.*

²⁴⁷ WHO, *Health and the environment: addressing the health impact of air pollution (A68/18)*, 2015.

²⁴⁸ *Ibid.*

²⁴⁹ GACC, *Demand creation*, 2018; GACC, *Supply strengthening*, 2018.

²⁵⁰ GACC, *Supply strengthening*, 2018.

²⁵¹ GACC, *2017 Progress Report: Driving Demand, Delivering Impact*, 2018.

²⁵² *Ibid.*

²⁵³ *Ibid.*

²⁵⁴ *Ibid.*

Outdoor air pollution contributes to 4.2 million premature deaths due to inhalation of particulate matter.²⁵⁵ 91% of deaths due to outdoor air pollution occur in low- and middle-income countries.²⁵⁶ Although an estimated nine out of ten people worldwide breathe polluted air, the highest outdoor air pollution levels are in low and middle-income countries, with levels exceeding five times WHO standards.²⁵⁷ Vehicle emissions, inefficient use of energy in the home, industry, agriculture, and in the transportation sectors are contributors to declining air quality in urban and rural areas.²⁵⁸ Even residents of high-income countries, which typically have the lowest levels of outdoor air pollution, experience health consequences and lowered life-expectancy from outdoor air pollution.²⁵⁹ Outdoor air pollution can cause the same non-communicable diseases as indoor air pollution, and particulate matter is strongly linked to rising cancer risks.²⁶⁰

Reducing Urban Air Pollution

Over half of the world's population lives in urban areas, but only 12% of those cities have air quality standards that meet WHO guidelines.²⁶¹ Housing energy consumption for heating, cooking, and other uses contributes to approximately 17.8% of carbon dioxide emissions.²⁶² Sustainable urbanization and urban development plans, such as promoting higher density dwellings and compact urban areas, as well as improved ventilation and insulation can improve household energy efficiency and reduce energy demands and emissions.²⁶³ UN Environment coordinates the District Energy in Cities Initiative to meet targets in the *New Urban Agenda* and the 2030 Agenda by improving the sustainability of energy plans in urban areas.²⁶⁴ This initiative helps Member States through knowledge sharing of the best practices and implementation strategies and through ensuring that policies increase and do not discourage investment in low-carbon energy generation sources.²⁶⁵

Transportation is a major contributor to urban air pollution.²⁶⁶ However, 90 out of 193 countries do not have vehicle emissions standards.²⁶⁷ UN Environment collaborates with the International Energy Agency and others on the Global Fuel Economy Initiative to help reduce GHG emissions and pollution from transportation through a 50% improvement in fuel economy by 2050, meaning doubling the distance a vehicle can travel on that fuel.²⁶⁸ Such improvements conserve resources and reduce the amount of fossil fuels burned.²⁶⁹ However, gaps still persist in engine technology between Organisation for Economic Co-operation and Development (OECD) countries and non-OECD countries.²⁷⁰ The UN Environment Partnership for Clean Fuels and Vehicle is the leading public-private partnership, coordinating Member States, NGOs, industry groups, and companies, to promote cleaner fuels, vehicles, and vehicle fuel standards in developing economies and economies in transition.²⁷¹ Policies that improve the safety of non-motorized transport like walking and cycling can also improve air quality by reducing the reliance on

²⁵⁵ WHO, *Ambient (outdoor) air quality and health*, 2018.

²⁵⁶ WHO, *Air pollution*, 2018.

²⁵⁷ WHO, *9 out of 10 people worldwide breathe polluted air, but more countries are taking action*.

²⁵⁸ Ibid.

²⁵⁹ Ibid.

²⁶⁰ WHO, *Ambient (outdoor) air quality and health*, 2018.

²⁶¹ UN Environment, *Air*.

²⁶² WHO, *Health co-benefits of climate change mitigation: Housing sector*, 2011.

²⁶³ WHO, *Health and sustainable development*, 2018.

²⁶⁴ UN General Assembly, *Progress on the implementation of the New Urban Agenda: Report of the Secretary-General (A/RES/73/83-E/2018/62)*, 2018.

²⁶⁵ UN Environment, *Indicators of Success*.

²⁶⁶ UN Environment, *Towards a Pollution-Free Planet*, 2017, p. 16.

²⁶⁷ UN Environment, *Air*.

²⁶⁸ UN Environment, *Global fuel economy initiative*.

²⁶⁹ Ibid.

²⁷⁰ OECD & IEA, *International comparison of light-duty vehicle fuel economy 2005-2015: Ten years of fuel economy benchmarking*, 2017.

²⁷¹ UN Environment, *Partnership for clean fuels and vehicles*.

fuel-intensive modes of transportation for mobility.²⁷² Investment in infrastructure to support safe methods of non-motorized transport is a challenge that will need to be overcome for cities to transform to low or even zero-carbon emitters.²⁷³

Preventing Air Pollution: Transforming Energy Systems

Currently, the burning of fossil fuels generates 66% of the world's electricity and contributes to approximately 60% of GHG emissions.²⁷⁴ Renewable energies such as wind, solar, and hydropower produce little to no air pollution and provide economic benefits such as employing over 9.8 million people worldwide.²⁷⁵ 113 countries have adopted national targets for generating renewable energy.²⁷⁶ Energy efficiency policies have also been adopted in 137 countries.²⁷⁷ Both renewable energy and energy efficiency are critical components of transforming energy systems across the world and reduce GHG emissions from traditional sources of energy generation.²⁷⁸

However, renewable energy and energy efficiency technologies still compete with highly subsidized carbon-intensive energy generation.²⁷⁹ In order to overcome these barriers, UN Environment encourages Member States to adopt policies that promote renewable energy and energy efficiency technologies, raises awareness about successful energy policies, dispels myths about renewable technologies, and encourages investment.²⁸⁰ Corporate sourcing of renewable energy through power-purchase agreements, utility green procurement programs, or unbundled energy attribute certificates has the potential to increase private-sector investment in renewable electricity generation.²⁸¹ In 2017, only 3.5% of electricity demand in the commercial and industrial sector was generated by renewable energies globally.²⁸² One of the challenges is that renewable energy has high starting capital costs; therefore access to financing can be a major barrier to private developers of renewable energy projects, especially in developing economies.²⁸³ Policies aimed at reducing financial risk, which could open up private investment, and incentivizing investment can improve developers' access to capital and potentially increase private investment in new projects.²⁸⁴

Conclusion

UN Environment partners with many different organizations in order to reduce air pollution.²⁸⁵ Reducing air pollution is important to meet SDGs for improving global health and mitigating climate change.²⁸⁶ Indoor and outdoor air pollution contribute to millions of premature deaths and reducing and preventing air pollution will require access to sustainable fuels, clean energy, and sustainable urban development plans.²⁸⁷ Increasing the mix of renewable sources of energy in the generation of electricity can reduce emissions of pollutants from the energy sector.²⁸⁸ Furthermore, transforming the transportation sector through incentivizing non-motorized transportation can have positive impacts on urban air quality.²⁸⁹ In

²⁷² UN Environment, *Investing in People Who Walk and Cycle: Share the Road Programme Annual Report*, 2017.

²⁷³ Ibid

²⁷⁴ UN Environment, *Renewable energy*.

²⁷⁵ IRENA, *Benefits*, 2018.

²⁷⁶ UN Environment, *Renewable Energy and Energy Efficiency in Developing Countries: Contributions to Reducing Global Emissions*, 2017.

²⁷⁷ Ibid.

²⁷⁸ Ibid.

²⁷⁹ UN Environment, *Renewable energy*.

²⁸⁰ Ibid.

²⁸¹ IRENA, *Corporate Sourcing of Renewable Energy: Market and Industry Trends*, 2018.

²⁸² Ibid.

²⁸³ UNDP, *Derisking Renewable Energy Investment*, 2013.

²⁸⁴ Ibid., pp. 35-36.

²⁸⁵ UN Environment, *Why does UN Environment Matter?*.

²⁸⁶ UN Environment, *Why does UN Environment Matter?*; UN Environment, *Towards a Pollution-Free Planet*, 2017.

²⁸⁷ Ibid.

²⁸⁸ UN Environment, *Renewable energy*.

²⁸⁹ UN Environment, *Investing in People Who Walk and Cycle: Share the Road Programme Annual Report*, 2017.

addition, introducing vehicle emission standards and housing standards, such as insulation of buildings, can improve air quality and general well-being.²⁹⁰

Further Research

As delegates research the topic, they should consider: What other impacts does air pollution pose to the international community? What other innovative air pollution prevention strategies can Member States propose as actionable policy options? What barriers exist to implementing air pollution reduction strategies? How can air pollution and air quality solutions be integrated into the broader sustainable development discussion? How can UN Environment empower and incentivize Member States to meet SDGs relating to air quality?

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Conference of the Parties to the United Nations Framework Convention on Climate Change, Twenty-first session. (2015). *Paris Agreement*. Retrieved 10 August 2018 from:

https://unfccc.int/sites/default/files/english_paris_agreement.pdf

Meeting climate change mitigation targets and reducing air pollution are linked goals, as many greenhouse gas emissions are also air pollutants that harm human health and the environment. Delegates should understand the linkages between these two goals in order to find the intersections where work can be done to accomplish both tasks. Collaborating with international organizations is important to finding solutions that can achieve multiple environmental objectives, such as reducing air pollutants and climate action.

International Renewable Energy Agency. (2018). *Corporate Sourcing of Renewable Energy: Market and Industry Trends*. Retrieved 10 August 2018 from: <http://www.irena.org/publications/2018/May/Corporate-Sourcing-of-Renewable-Energy>

Reducing the amount of pollutants that the energy sector emits is an important step in improving air quality globally, and renewable energy can be part of that solution. This report highlights current and emerging trends in the renewable energy sector and understanding these trends will be important for Member States to propose policy that incentivizes investment in new and emerging technologies. Delegates should have a keen knowledge of market trends in order to identify ways to improve the mix of renewables and other non-carbon emitting sources of energy generation.

United Nations Development Programme. (2013). *Derisking Renewable Energy Investment* [Report]. [http://www.undp.org/content/dam/undp/library/Environment and Energy/Climate Strategies/Derisking Renewable Energy Investment - Full Report \(May 2013\) ENGLISH \(1\).pdf](http://www.undp.org/content/dam/undp/library/Environment%20and%20Energy/Climate%20Strategies/Derisking%20Renewable%20Energy%20Investment%20-%20Full%20Report%20(May%202013)%20ENGLISH%20(1).pdf)

This report identifies one of the major barriers to renewable energy investment, such as financial risk, and discusses policies and solutions that Member States are implementing in order to overcome this barrier. Delegates should understand the successful policies that are currently used in Member State in order to build upon these successes in other regions. Furthermore, these policies on mitigating risk are not just applicable to renewable energy technologies but can be applied to any new market or technology to overcome barriers to entry to develop new technologies. As delegates identify new and emerging technologies to transform the energy sector and reduce its pollution emissions, they can examine current successful policies that could be adapted to newer technologies as well.

United Nations, Economic Commission for Europe. (1979). *1979 Convention on Long-Range Transboundary Air Pollution*. Retrieved 5 August 2018 from:

<https://www.unece.org/fileadmin/DAM/env/lrtap/full%20text/1979.CLRTAP.e.pdf>

²⁹⁰ WHO, *Health co-benefits of climate change mitigation: Housing sector*, 2011; UN Environment, *Transport*.

The Convention was one of the first large-scale regional agreements on pollution and is an important multilateral agreement in reducing air pollution. Understanding international agreements that have achieved international consensus to reducing pollution is important in order to propose new policy options that build upon these existing legal frameworks. This will ensure that work of the international community is not duplicated and proposes new actionable policy options for the committee.

United Nations Environment Assembly of the United Nations Environment Programme. (2014). *Resolutions and decisions adopted by the United Nations Environment Assembly of the United Nations Environment Programme at its first session on 27 June 2014* [Outcome Document]. Retrieved 10 August 2018 from:

<http://wedocs.unep.org/bitstream/handle/20.500.11822/17285/K1402364.pdf?sequence=3&isAllowed=y>

The outcome documents of the first session of the United Nations Environment Assembly set ambitious environmental targets that were important in the consultations and drafting of the post-2015 sustainable development agenda. Many of these goals are now integrated in the 2030 Agenda for Sustainable Development. Delegates should understand the commitments that UN Environment has made in the past to ensure their fulfilment.

United Nations Environment Assembly of the United Nations Environment Programme. (2017). *Preventing and reducing air pollution to improve air quality globally (UNEP/EA.3/Res.8)* [Resolution]. Retrieved 7 July 2018 from: <http://undocs.org/UNEP/EA.3/Res.8>

This resolution urges Member States to establish air quality standards, integrate and improve air pollution management systems, and put in place policies to reduce and prevent air pollution, among many other targets. For example, Member States are encouraged to adopt strategies to reduce methane and black carbon, both of which contribute to reducing greenhouse gas emissions and air pollution. Delegates should read and understand the work that UN Environment and Member States have already committed to and propose adequate policy measures to ensure that these commitments are met.

United Nations Environment Programme. (2017). *Investing in People Who Walk and Cycle: Share the Road Programme Annual Report*. Retrieved 7 July 2018 from:

<http://wedocs.unep.org/bitstream/handle/20.500.11822/22899/ShareTheRoadAnnualRepor%202017.pdf?sequence=1&isAllowed=y>

The Share the Road Report highlights the objectives of UN Environment in advocating for non-motorized transport and identifies the current activities of UN Environment. Non-motorized transport is an important facet of sustainable transportation systems. Sustainable transport is crucial to improving urban air quality as transportation is a significant contributor to urban air pollution and poor urban air quality. Delegates should know the current objectives of UN Environment in order to identify solutions and programs for sustainable transportation.

United Nations Environment Programme. (2017). *Renewable Energy and Energy Efficiency in Developing Countries: Contributions to Reducing Global Emissions* [Report]. Retrieved 7 July 2018 from:

https://wedocs.unep.org/bitstream/handle/20.500.11822/22149/1_Gigaton_Third%20Report_EN.pdf?sequence=1&isAllowed=y

Global energy consumption is predicted to rise by 48% by 2040 and the majority of this rise will likely be in developing economies. Conventional methods of energy production will contribute to rising levels of air pollutions and greenhouse gas emissions which will make meeting the targets under the Paris Agreement and 2030 Agenda difficult to achieve. Renewable energy and energy efficiency can contribute to meeting these targets and rising energy consumption. Delegates should understand the challenges that the international community faces in ensuring air quality globally and the current technologies in order propose short- to medium-term strategies that can prevent air pollution.

United Nations Environment Programme. (2017). *Towards a Pollution-Free Planet* [Report]. Retrieved 7 July 2018 from:

https://wedocs.unep.org/bitstream/handle/20.500.11822/21800/UNEA_towardspollution_long%20version_Web.pdf?sequence=1&isAllowed=y

This report discusses a wide range of the current programs and policies in place to address air pollution. It is important that delegates have a clear understanding of the current work of the body in order to improve upon existing policies and programs and identify areas for future success. The report also discusses gaps in the current work of the international community which should enable delegates to identify areas where more work needs to be done to achieve the SDGs and pollution-reducing targets.

World Health Assembly of the World Health Organization. (2015). *Health and the environment: addressing the health impact of air pollution (WHA/68/8)* [Resolution]. Retrieved 7 July 2018 from:

http://apps.who.int/gb/ebwha/pdf_files/WHA68/A68_R8-en.pdf

This resolution marked the highest-level international action on air pollution and human health and is an important foundational document to the topic. It recognizes pollution as a leading contributor to disease and cause of deaths globally. Through this document, Member States commit to reducing levels of pollution and identified pollution-control strategies for transportation, energy-efficiency, and greenspace, among other. This resolution is important for delegates to understand previous actions the international community has taken and propose new actionable policy.

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III. Promoting the Responsible Disposal of Electronic and Hazardous Waste

Introduction

As the governing body of the United Nations Environment Programme (UN Environment), the United Nations Environment Assembly (UNEA) acts as a forum to address the complex nature of hazardous and electronic waste within the United Nations (UN) system.²⁹¹ UN Environment is able to provide system-wide guidance on the potential risks and opportunities of waste disposal, and to assist in coordinating the efforts of other UN organs and agencies.²⁹² During its first session, the Assembly identified chemical management and waste as one of the primary challenges facing the global environment.²⁹³ Electronic waste (e-waste) is one form of hazardous waste.²⁹⁴ It is the world's fastest growing waste stream, with 44.7 million metric tons generated in 2016.²⁹⁵ This is the equivalent to 6.1 kilograms of e-waste generated per global citizen, a number that rose from 5.8 kilograms per person in 2014.²⁹⁶ At the current rate, by the year 2021 each global citizen is expected to generate 6.8 kilograms of e-waste annually.²⁹⁷ The rapid spread and development of electronics, like information and communication technology (ICTs), has improved the social and economic well-being of both developed and developing societies.²⁹⁸ However, technological advancement, the ready availability of new technology, and the fast-growing number of global users has led to shorter replacement cycles for ICTs devices.²⁹⁹ Consequently, this has resulted in more waste generation and raised concerns about the impact of e-waste disposal on public health and the environment.³⁰⁰

Hazardous waste is material that contains various toxic components including lead, cadmium, mercury, and copper.³⁰¹ Some hazardous wastes may also have particularly hazardous characteristics, such as being corrosive, explosive, oxidizing, or causing toxic effects.³⁰² Many of these materials are classified as ecotoxic, which means they result in "immediate or delayed adverse impacts to the environment by means of bioaccumulation and/or toxic effects upon biotic systems."³⁰³ E-waste refers to "any item with circuitry or electrical components with power or battery supply [...] that have been discarded by their owner as waste without the intention of re-use."³⁰⁴ E-waste is considered hazardous because of the presence of several persistent, bio-accumulative and toxic substances present in the items themselves.³⁰⁵ E-waste includes cooling and freezing equipment, screens and monitors, small equipment, large equipment, lamps, and small information technology and telecommunication equipment.³⁰⁶

Responsible disposal techniques ensure that hazardous materials are treated in an environmentally sound way to protect human health and the environment.³⁰⁷ Sites responsible for hazardous waste management are specifically authorized by the state or regional authority to operate for that specific

²⁹¹ UNEA, *Ministerial outcome document of the first session of the United Nations Environment Assembly of the United Nations Environment Programme (UNEP/EA.1/RES.1)*, 2014.

²⁹² *Ibid.*

²⁹³ *Ibid.*

²⁹⁴ United Nations University et al., *Global E-Waste Monitor*, 2017, p. 2.

²⁹⁵ *Ibid.*, p. 2.

²⁹⁶ *Ibid.*, p. 2.

²⁹⁷ *Ibid.*, p. 2.

²⁹⁸ *Ibid.*, p. 2.

²⁹⁹ *Ibid.*, p. 4.

³⁰⁰ ILO, *The Global Impact of E-waste: Addressing the Challenge*, 2012, p. 12.

³⁰¹ UN Environment, *The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal*, 1989, p. 47.

³⁰² *Ibid.*, p. 50.

³⁰³ *Ibid.*, p. 53.

³⁰⁴ Solving the E-Waste Problem, *One Global Definition*, 2014, p. 4.

³⁰⁵ ILO, *The Global Impact of E-waste: Addressing the Challenge*, 2012, p. 12.

³⁰⁶ United Nations University et al., *Global E-Waste Monitor*, 2017, p. 11.

³⁰⁷ UN Environment, *The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal*, 1989, p. 11.

purpose.³⁰⁸ Generally, only 20% of hazardous and electronic waste reaches these facilities and is recycled through suitable, environmentally sound methods.³⁰⁹ The remaining 80% of e-waste is disposed of through general waste streams like landfills.³¹⁰ The toxic substances in e-waste can therefore leach into the surrounding soil and water, contaminating ecosystems and harming human health and biodiversity.³¹¹

International and Regional Framework

In 1989, the United Nations Environment Programme (UN Environment) held the Conference of the Plenipotentiaries, comprised of 116 Member States, as a response to the growing concerns over rising hazardous waste disposal challenges.³¹² The Conference adopted the *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal* (1989) to regulate the increased amount of hazardous waste moving across international borders.³¹³ The Basel Convention requires that Member States adhere to the basic principles of managing waste in an environmentally sound manner and dispose of wastes in their state of origin to the greatest extent possible.³¹⁴ In 1995, an amendment was adopted by the members of the Basel Convention that aimed to extend the Basel Convention to cover the movement of hazardous waste intended for final disposal, re-use, recycling, and recovery.³¹⁵ However, a debate on the costs and benefits of implementation has left the amendment stalled.³¹⁶

The United Nations Conference on Environment and Development adopted *Agenda 21* in 1992.³¹⁷ *Agenda 21* represents an international commitment to push for sustainable development and address all areas where humans impact the environment through a dynamic set of objectives, activities, and means of implementation.³¹⁸ Chapter 20 of *Agenda 21* has multiple goals, including minimizing waste, preventing illegal hazardous waste trafficking, and establishing long-term, environmentally responsible programs for both manufacturers and recyclers.³¹⁹ Another provision focuses on the impact of industrial production and encourages producers to reduce the amount of waste generated at the beginning stages of production, as well as during end-of-life recycling.³²⁰

The Bali Declaration on Waste Management for Human Health and Livelihood was adopted at the ninth Conference of the Parties (COP 9) in 2008 and encouraged greater regional and subregional coordination, awareness-raising, and increased capacity building.³²¹ In 2017, the *Minamata Convention on Mercury* came into force to protect people and the environment from the adverse effects of mercury exposure, one of the most potent heavy metals found in toxic e-waste.³²² Mercury is one of the most dangerous elements used in electronic production and dismantling and sits on the UN's list of top ten chemicals of major concern.³²³ As there is no known safe level of exposure to lead or mercury, the lack of awareness and the use of proper handling techniques places both humans and the environment at risk.³²⁴

³⁰⁸ Ibid, p. 10.

³⁰⁹ United Nations University et al., *Global E-Waste Monitor*, 2017, p. 2.

³¹⁰ ILO, *The Global Impact of E-waste: Addressing the Challenge*, 2012, p. 9.

³¹¹ United Nations Secretariat of the Basel Convention, *Basel Convention Milestones*, 2011.

³¹² Ibid.

³¹³ UN Environment, *The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal*, 1989.

³¹⁴ Ibid.

³¹⁵ Ibid.

³¹⁶ Ibid.

³¹⁷ UNCED, *Agenda 21*, 1992.

³¹⁸ Ibid.

³¹⁹ Ibid.

³²⁰ Ibid.

³²¹ UN Environment, *The Bali Declaration on Waste Management for Human Health and Livelihood*, 2008.

³²² UN Environment, *Minamata Convention on Mercury*, 2017.

³²³ WHO, *Mercury and Health Fact Sheet*, 2018.

³²⁴ UNEA, *Eliminating exposure to lead paint and promoting environmentally sound management of waste lead-acid batteries (UNEP/EA.3/RES.9)*, 2017.

The Convention particularly insists that each Party must identify sources of mercury compounds released in the environment and adopt national plans to control releases.³²⁵ Also in 2017, UNEA adopted a resolution to eradicate exposure to lead paint and promote the sustainable management of waste lead-acid batteries.³²⁶ The resolution calls on Member States to increase coordination for hazardous waste management, address emissions and exposure, and implement responsible disposal practices.³²⁷

The European Union (EU) developed legislation on electronic waste with the *Waste Electrical and Electronic Equipment Directive* (WEEE) in 2002.³²⁸ The directive promotes the recovery, preparation for re-use and recycling mechanisms for electronic waste, and it provides treatment standards for producers, businesses, and individuals.³²⁹ The directive provides a number of technical guidelines for disposal facilities, including the requirement to remove hazardous material from the equipment to be treated separately, to have appropriate storage containers and surfaces, and to have appropriate water treatment capabilities to prevent damage to humans and the environment.³³⁰ Another recommendation is for states to delegate responsibility to the producers for the full waste chain of their products, including recycling and disposal.³³¹

Similarly, the International Telecommunications Union (ITU) recognized the need for more producer accountability in the *Connect 2020 Agenda for Global Telecommunication/ICTs Development* in 2014.³³² The signatories on this agenda aim to increase the interconnectedness of the world through ICTs while simultaneously accelerating sustainable social, economic, and environmental practices.³³³ In order to address the potentially negative impacts of expanding ICTs use and access, Goal 3 of the Connect 2020 Agenda aims to reduce the volume of redundant e-waste by 50% by the year 2020.³³⁴ The International Labour Organization (ILO) also provides expertise on labor standards and employment guidelines for transitioning economies.³³⁵ The ILO's *Convention on Chemicals* provides further safety standards for individuals working with chemicals and hazardous materials.³³⁶

In 2015, the UN adopted the *2030 Agenda for Sustainable Development* and the Sustainable Development Goals (SDGs) as new global commitments to be achieved by 2030.³³⁷ Many targets are linked to hazardous waste disposal, three of which are particularly related to the responsible disposal of hazardous and electronic waste.³³⁸ SDG 3 aims to reduce the number of deaths and illnesses caused by hazardous waste contamination of the air, water, and soil by 2030.³³⁹ SDG 8 addresses labor rights, safety, and development of working environments, including formalizing dangerous sectors and increasing access to financial resources.³⁴⁰ Finally, SDG 12 aims to encourage prevention and repurposing techniques to tackle excess waste creation, and to adopt a life-cycle view of hazardous waste to minimize their overall effect on humans and the environment by 2020.³⁴¹ Overall, sound

³²⁵ UN Environment, *Minamata Convention on Mercury*, 2017.

³²⁶ UNEA, *Eliminating exposure to lead paint and promoting environmentally sound management of waste lead-acid batteries* (UNEP/EA.3/RES.9), 2017.

³²⁷ *Ibid.*

³²⁸ EU, *Waste Electrical and Electronic Equipment Directive*, 2002.

³²⁹ *Ibid.*

³³⁰ *Ibid.*

³³¹ *Ibid.*

³³² ITU, *Connect 2020 Agenda for Global Telecommunication/ICTs Development*, 2014.

³³³ *Ibid.*

³³⁴ *Ibid.*

³³⁵ UN EMG, *United Nations System-wide Response to Tackling E-waste*, 2017, p. 25.

³³⁶ *Ibid.*, p. 19.

³³⁷ UN General Assembly, *Transforming our world: the 2030 Agenda for Sustainable Development (A/RES/70/1)*, 2015.

³³⁸ *Ibid.*

³³⁹ *Ibid.*

³⁴⁰ *Ibid.*

³⁴¹ *Ibid.*

chemical management through inter-organizational cooperation is a key aspect of sustainable development.³⁴²

Role of the International System

UN Environment has taken the lead role on setting normative standards on the management of hazardous waste and e-waste throughout its life-cycle.³⁴³ The Assembly has adopted resolutions focused on the sound management of chemicals and waste since its first session.³⁴⁴ UNEA also supports and oversees the United Nations Environment Management Group (EMG), which is comprised of specialized agencies and organs within the UN.³⁴⁵ The EMG identifies environmental issues that require cooperation and engages the international community to respond to those issues.³⁴⁶ One subset of the EMG is the Issue Management Group on Tackling E-waste.³⁴⁷ The goal of this group is to strengthen and enhance existing policies and programs to address pressing issues throughout the UN system, such as developing eco-design mechanisms and e-waste prevention and management.³⁴⁸

One group coordinated under the EMG is the International Environmental Technology Centre (IETC), the foremost UN agency focusing on waste management and environmentally sound technology.³⁴⁹ This body is composed of industry specialists and offers guidelines on inventory best practices, management techniques, and take-back systems.³⁵⁰ The IETC has produced reports on waste management outlooks, provided technological support, and led capacity-building initiatives.³⁵¹ The EMG works alongside the United Nations University (UNU), an international community of scholars established by the UN, on hazardous and electronic waste research.³⁵² In 2017, the UNU and EMG published a report examining the adverse health impacts affecting those working in and around disposal sites.³⁵³

The UNU also hosts the Solving the E-Waste Problem (StEP) initiative, an international project with membership comprised of various industry, government, and academic stakeholders to address the e-waste life-cycle at all stages.³⁵⁴ The initiative researches and publishes various reports and statistics on regional practices, business implementation models, and online resources, including an interactive global waste data map.³⁵⁵ The StEP Initiative also published the *Business Plan Calculation Tool for Manual Dismantling Facilities* as a framework for entrepreneurs to set up e-waste recycling businesses that have responsible disposal practices and are economically feasible.³⁵⁶ Similarly, the Global Partnership on Waste Management (GPWM) was formed in 2010 with the aim of creating an open-ended organization to foster a holistic approach to international waste management.³⁵⁷ GPWM includes international organizations, governments, businesses, academics, and civil society actors to enhance cooperation on this topic.³⁵⁸ The Basel Action Network (BAN) is a non-governmental organization (NGO) watchdog

³⁴² UN EMG, *United Nations and Sound Chemicals Management Coordinating deliver for Member States and sustainable development*, 2015, p. 4.

³⁴³ UN EMG, *United Nations System-wide Response to Tackling E-waste*, 2017, p. 29.

³⁴⁴ UNEA, *Sound Management of Chemicals and Waste (UNEP/EA.2/RES.7)*, 2016.

³⁴⁵ UN EMG, *About EMG*, 2018.

³⁴⁶ *Ibid.*

³⁴⁷ UN Environment, *The United Nations tackles electronic waste*, 2017.

³⁴⁸ *Ibid.*

³⁴⁹ UN EMG, *United Nations System-wide Response to Tackling E-waste*, 2017, p. 29.

³⁵⁰ *Ibid.*, p. 29.

³⁵¹ UN Environment, *Who We Are*, 2018.

³⁵² United Nations University, *About UNU*, 2018.

³⁵³ UN EMG, *United Nations System-wide Response to Tackling E-waste*, 2017, p. 28.

³⁵⁴ Solving the E-waste Problem, *One Global Definition of E-waste*, 2014.

³⁵⁵ *Ibid.*

³⁵⁶ Solving the E-waste Problem, *Business Plan Calculation Tool for Manual Dismantling Facilities*, 2016, p. 3.

³⁵⁷ UN DESA, *Global Partnership on Waste Management (GPWM)*.

³⁵⁸ *Ibid.*

dedicated to transparency in global waste disposal.³⁵⁹ BAN installed 200 GPS tracking devices into electronic equipment destined for dismantling and has published their findings on waste movements.³⁶⁰

Environmental and Health Impacts of Irresponsible Disposal Methods

The toxic and complex design of electronics makes the environmentally-sound dismantling and separation of materials labor intensive and technologically demanding.³⁶¹ Approximately 60% of electronic equipment's constituent parts are potentially, or known to be, hazardous.³⁶² There is a lack of comprehensive knowledge on the dangers that irresponsible disposal can wreak on human and the environmental health.³⁶³ In many regions, disposal workshops are run out of homes in small communities with dangerous, primitive methods such as manual disassembly.³⁶⁴ Despite encouragement from the international system, there is little incentive to adopt responsible disposal methods.³⁶⁵ Safe recycling centers are expensive to build and maintain, and require a high degree of technical skill.³⁶⁶ Often times the cost and time needed to create facilities, coupled with a lack of awareness of the dangers of unsound disposal, means that there is little incentive for authorities to encourage the transition to green disposal techniques.³⁶⁷

One common method used in home or community recycling operations is to burn e-waste at a low temperature to melt down the product components and pull valuable metals from the ashes.³⁶⁸ This results in airborne toxins, such as mercury and lead, to sweep through the recycling sites and neighboring communities.³⁶⁹ These particles settle into toxic dust, which is then inhaled by workers or brought home on their clothes and ingested second-hand by their families.³⁷⁰ Toxic dust leaches into the local water supply and pollutes daily drinking water and agricultural activities.³⁷¹ High concentrations of toxic substances cause higher rates of reproductive issues in women including stillbirths, miscarriages, and distorted cell function.³⁷² Workers expose their children to the toxic substances through second-hand contact, which can cause neurodevelopmental and neurobehavioral problems, including changes in mental health, behavior disturbances, hyperactivity, and schizophrenia.³⁷³ In extreme cases, water can become so highly polluted that it can disintegrate metal in a matter of hours.³⁷⁴

The environmental impacts of these chemicals do not only affect the workers at the disposal sites.³⁷⁵ Chronic air, water, and soil pollution can do irreversible damage to regional biodiversity.³⁷⁶ As plants draw their nutrients from the soil and water, they absorb the chemical pollutants and pass them up the food chain to humans and animals.³⁷⁷ Lead, mercury, and other toxic substances released as a part of the

³⁵⁹ Basel Action Network, *Home*.

³⁶⁰ *Ibid.*

³⁶¹ ILO, *The Global Impact of E-waste: Addressing the Challenge*, 2012, p. 12.

³⁶² Heacock et. al., *E-waste and Harm to Vulnerable Populations: A Growing Global Problem*, 2016, p. 551.

³⁶³ ILO, *The Global Impact of E-waste: Addressing the Challenge*, 2012, p. 19.

³⁶⁴ Srigboh et. al., *Multiple Elemental Exposures Amongst Workers at the Agbogbloshie Electronic Waste (E-Waste) Site in Ghana*, 2016.

³⁶⁵ ILO, *The Global Impact of E-waste: Addressing the Challenge*, 2012, p. 19.

³⁶⁶ Grant et al., *Health consequences of exposure to e-waste: a systematic review*, 2013, p. 351.

³⁶⁷ Solving the E-waste Problem, *Guiding Principles to Develop E-Waste Management Systems and Legislation*, 2016.

³⁶⁸ Srigboh et. al., *Multiple Elemental Exposures Amongst Workers at the Agbogbloshie Electronic Waste (E-Waste) Site in Ghana*, 2016.

³⁶⁹ *Ibid.*

³⁷⁰ *Ibid.*

³⁷¹ *Ibid.*

³⁷² Grant et al., *Health consequences of exposure to e-waste: a systematic review*, 2013, p. 353.

³⁷³ *Ibid.*, p. 353.

³⁷⁴ University of Washington, *WEEE: Waste Electrical and Electronic Equipment*, 2016.

³⁷⁵ Grant et al., *Health consequences of exposure to e-waste: a systematic review*, 2013, p. 353.

³⁷⁶ University of Washington, *WEEE: Waste Electrical and Electronic Equipment*, 2016.

³⁷⁷ Srigboh et. al., *Multiple Elemental Exposures Amongst Workers at the Agbogbloshie Electronic Waste (E-Waste) Site in Ghana*, 2016.

recycling process very often exceed the international standards of acceptable concentrations.³⁷⁸ Mercury poses particular danger to humans and the environment when integrated into a water system, such as a river or lake.³⁷⁹ There, bacteria transform the mercury into a more toxic compound, which then biomagnifies in the water and is once again ingested by plants, animals, and humans.³⁸⁰ Acidification can also kill marine and freshwater organisms, causing a chain reaction of disrupted ecosystems that extends far from the original recycling operation.³⁸¹ The informal nature of recycling operations and lack of oversight make long-term data on the concrete environmental and health impacts of remains difficult to collect and examine.³⁸²

Gaps and Opportunities

One of the greatest challenges in addressing the responsible disposal of hazardous materials is understanding the full scope of the issue, which is difficult to do without proper data and information.³⁸³ The transboundary movement of waste is prohibited, yet waste does travel from the country of origin to other countries for disposal.³⁸⁴ One reason why waste is difficult to track is that many countries classify tech as “used electronics,” which is equipment intended to be refurbished and reused in the country of import, when reporting on the kinds of waste being moved across borders.³⁸⁵ In reality, these items are not reused, but disposed of through irresponsible methods.³⁸⁶ During the BAN campaign to track waste, the study found that 93% of the electronics tracked were illegally exported from developed states to developing states where no proper disposal was undertaken.³⁸⁷ Although the BAN initiative provided some data, it was only one project piloted for a short time.³⁸⁸ 80% of the world’s electronic and hazardous waste is still unreported or mislabeled, meaning that there can be no accountability for producers, importers, exporters, and recyclers.³⁸⁹

Aside from the broader issue of where waste comes from and where it goes, there is the problem of disposal itself.³⁹⁰ For transitioning and emerging economies, there are three main barriers to the successful implementation of sustainable practices with economic benefit, which are: policy and legislation, technologies and technical capabilities, and business and finance models.³⁹¹ Many regulatory frameworks have legal loopholes that allow for the informal recycling sector to be unregulated, unstandardized, and problematic.³⁹² Some countries have no laws on e-waste altogether.³⁹³ Without mandatory regulatory mechanisms, the specialized knowledge required to operate responsible recycling facilities cannot be transferred between states or individual recycling operations.³⁹⁴ Although there are new models for safe disposal, there is a lack of cooperation between urban and local authorities, regional bodies, the international system, and business sector stakeholders, which makes regulation an ongoing challenge.³⁹⁵

³⁷⁸ Ibid.

³⁷⁹ UN Environment, *Global Mercury Assessment: Sources, Emissions, Releases and Environmental Transport*, 2013.

³⁸⁰ Ibid.

³⁸¹ University of Washington, *WEEE: Waste Electrical and Electronic Equipment*, 2016.

³⁸² Heacock et. al., *E-waste and Harm to Vulnerable Populations: A Growing Global Problem*, 2016, p. 550.

³⁸³ United Nations University et al., *Global E-Waste Monitor*, 2017, p. 44.

³⁸⁴ Ibid, p. 44.

³⁸⁵ Ibid, p. 44.

³⁸⁶ Ibid, p. 44.

³⁸⁷ Ibid, p. 44.

³⁸⁸ Ibid, p. 44.

³⁸⁹ ILO, *The Global Impact of E-waste: Addressing the Challenge*, 2012, p. 9.

³⁹⁰ UN Environment, *Waste Management in ASEAN Countries*.

³⁹¹ ITU et al., *Sustainable management of waste electrical and electronic equipment in Latin America*, 2016, p. 31.

³⁹² Ibid, p. 14.

³⁹³ Ibid, p. 14.

³⁹⁴ UN Environment, *Waste Management in ASEAN Countries*.

³⁹⁵ ILO, *The Global Impact of E-waste: Addressing the Challenge*, 2012, p. 12.

In line with SDG 8 on decent work and economic growth, transitioning the informal recycling sector to a formal, green economy can be achieved through innovation and entrepreneurship in micro-, small-, and medium-sized enterprises.³⁹⁶ Urban mining, for example, is an economic model that aims to eliminate waste by recovering and reusing valuable materials.³⁹⁷ Urban mining is the practice of reclaiming metals and other valuable components to reuse them as secondary resources.³⁹⁸ Overall, the UNU estimates that 55 billion euros of raw materials have been consumed in e-waste and could be recovered.³⁹⁹ Insufficient resources and a lack of proper management systems limit the recovery to only 25% of such valuable materials in electronic products.⁴⁰⁰ Reclaiming these metals mean they can then be resold, creating a circular economic model with economic incentive to properly manage waste.⁴⁰¹ This can both reduce the demand on the environment for raw material mining and transform the recycling and disposal sector into a market for green jobs.⁴⁰²

Technical capability is another barrier to implementing responsible recycling models due to the complex design of the products themselves.⁴⁰³ Electronics are designed with toxic and non-toxic materials fixed together in complex ways, making separation and reclamation difficult.⁴⁰⁴ The more difficult this process is, the more labor intensive and technologically advanced recycling is.⁴⁰⁵ To counter this challenge, the principle of Extended Producer Responsibility (EPR) was developed by the Organization for Economic Cooperation and Development (OECD), which assigns responsibility to producers during the full life-cycle of a product.⁴⁰⁶ Fundamentally, EPR encourages technology manufacturers to consider the environmental impact of their product from design to manufacturing to disposal in order to improve waste management and recycling.⁴⁰⁷ Some states have successfully implemented EPR legislation and programs.⁴⁰⁸ However, integrating the principle into both the informal recycling sector and existing programs has proved difficult.⁴⁰⁹ Insufficient financial contributions, the increasing volume of technology, and a lack of regulation and enforcement have made EPR compliance inconsistent.⁴¹⁰

Batteries are one particular product that poses significant challenges for proper disposal.⁴¹¹ The chemical composition of batteries classifies them as a particularly hazardous form of waste, having a significant environmental impact both during their creation and end-of-life disposal.⁴¹² Batteries are often imbedded into electronic equipment and consumed at a high rate.⁴¹³ While building batteries with toxic substances such as mercury and lead-acid is closely regulated, these materials still pose a threat to humans and the environment.⁴¹⁴ In response, Umicore, a materials technology and recycling group involved in chemicals, electronics, and precious metals, worked to address some of these challenges.⁴¹⁵ In 2006, Umicore launched a battery-recycling program to recover valuable materials, reuse them in rechargeable batteries,

³⁹⁶ United Nations University et al., *Global E-Waste Monitor*, 2017, p. 55.

³⁹⁷ *Ibid.*

³⁹⁸ ITU et al., *Sustainable management of waste electrical and electronic equipment in Latin America*, 2016, p. 8.

³⁹⁹ United Nations University et al., *Global E-Waste Monitor*, 2017, p. 52.

⁴⁰⁰ Heacock et. al., *E-waste and Harm to Vulnerable Populations: A Growing Global Problem*, 2016, p. 551.

⁴⁰¹ United Nations University et al., *Global E-Waste Monitor*, 2017, p. 55.

⁴⁰² *Ibid.*, p. 55.

⁴⁰³ ILO, *The Global Impact of E-waste: Addressing the Challenge*, 2012, p. 12.

⁴⁰⁴ *Ibid.*, p. 12.

⁴⁰⁵ *Ibid.*, p. 12.

⁴⁰⁶ OECD, *Extended Producer Responsibility*, 2000.

⁴⁰⁷ ITU et al., *Sustainable management of waste electrical and electronic equipment in Latin America*, 2016, p. 28.

⁴⁰⁸ Solving the E-waste Problem, *Reuse Potential: Evaluation of Reuse Opportunities within WEEE Compliance Schemes*, 2016.

⁴⁰⁹ ITU et al., *Sustainable management of waste electrical and electronic equipment in Latin America*, 2016, p. 28.

⁴¹⁰ UN Environment, *Recycling – From E-Waste To Resources*, 2009, p. 80.

⁴¹¹ Umicore, *Battery Recycling*, 2018.

⁴¹² ITU, *Toolkit on environmental sustainability for the ICTs sector*, 2012, p. 90.

⁴¹³ *Ibid.*, p. 89.

⁴¹⁴ *Ibid.*, p. 91.

⁴¹⁵ Umicore, *About Us*, 2018.

and decrease the amount of hazardous substances that would otherwise be released through improper disposal.⁴¹⁶

Conclusion

Electronic and hazardous waste is the world's fastest growing waste stream, and implementing ways to mitigate the negative effects to humans and the environment during their disposal is a global challenge.⁴¹⁷ UN Environment has taken the lead in coordinating efforts within the international system to address the issue, as can be seen with the Basel Convention, Minamata Convention, and the StEP Initiative, but there are still significant barriers to the successful implementation of these regulations and frameworks.⁴¹⁸ There are many opportunities for public and private sector involvement, and delegates can recommend action on the various challenges presented by e-waste disposal from a variety of angles.⁴¹⁹ With the complex, heterogeneous nature of hazardous and electronic waste, delegates should consider how to incorporate the wide range of relevant SDGs, global partners, technical experts, and local communities into their discussions.⁴²⁰

Further Research

In conducting further research on this topic, delegates should consider the following questions: Which other UN bodies and international stakeholders can create partnerships to address the vast challenges this topic presents? How can the SDGs help raise awareness and incorporate solutions to fight against the negative impacts related to electronic and hazardous waste? What mechanisms can UNEA recommend actors adopt to facilitate tracking transboundary transports of chemicals and e-waste? What can be done to improve international regulation and compliance? What role can the international community play to support implementation of sound disposal plans in developing states? What steps can UNEA recommend to improve waste disposal methods to prevent negative health effects to workers and communities? What measures can be taken to mitigate environmental damage and biodiversity loss? How can the private sector become more engaged in EPR and life-cycle eco design?

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Global E-Waste Statistics Partnership. (2017). *The Global E-waste Monitor 2017: Quantities, Flows, and Resources* [Report]. Retrieved 5 July 2018 from: https://collections.unu.edu/eserv/UNU:6341/Global-E-waste_Monitor_2017_electronic_single_pages.pdf

The 2017 edition of the Global E-waste Monitor aims to raise awareness of the potential threats and opportunities posed by e-waste across the world in relation to the SDGs. The report covers global and regional consumption and management trends, legislation, and e-waste statistics. Delegates may be particularly interested in the section on urban mining and the creation of circular economic models to transition illegal recycling operations into formal small- and medium-business enterprises to understand the opportunities and challenges faced by entrepreneurs.

International Labour Organization. (2012). *The Global Impact of E-waste: Addressing the Challenge* [Report]. Retrieved 7 July 2018 from: http://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---sector/documents/publication/wcms_196105.pdf

This report explores the labor, health, and environmental concerns of e-waste workers, especially for vulnerable populations and those in the informal sector. To demonstrate the dangerous conditions of e-waste workers, the report provides an overview of the complex chemical substances found in electronics and created as by-products of unsafe disposal. The report explores the health and environmental impacts of these substances with a

⁴¹⁶ Umicore, *Battery Recycling*, 2018.

⁴¹⁷ United Nations University et al., *Global E-Waste Monitor*, 2017, p. 2.

⁴¹⁸ Ibid, p. 2.

⁴¹⁹ Ibid, p. 2.

⁴²⁰ ITU et al., *Sustainable management of waste electrical and electronic equipment in Latin America*, 2016, p. 2.

focus on vulnerable populations including children, pregnant women, and minorities. The set of recommendations at the end of the report draws upon brief case studies and is an informative place for delegates to further their understanding of the technical side of the issue and develop solutions.

International Telecommunications Union. (2016). *Sustainable management of waste electrical and electronic equipment in Latin America* [Report]. Retrieved 9 July 2018 from: https://www.unclearn.org/sites/default/files/inventory/integrated_weee_management_and_disposal-395429-normal-e.pdf

This report discusses global sustainable e-waste management in the context of Latin America. The recommendations are likewise focused on management practices specific to the region. After a review of the international framework, the report discusses the e-waste situation in 10 Latin American states and provides an assessment of the regional management challenges. Specifically, the report calls for precise legal action, clear governance mechanisms, increased consumer knowledge of the risks of e-waste disposal, a higher level of technical capability, and the integration of sustainable economic models for environmentally sound e-waste management in the region. Delegates would benefit from this regional overview of the situation specific to Latin America as well as the sustainable management recommendations found at the end of the report.

Solving the E-Waste Problem. (2014). *One Global Definition of E-waste* [Report]. Retrieved 7 July 2018 from: https://i.unu.edu/media/ias.unu.edu-en/news/3774/STEP_WP_One-Global-Definition-of-E-waste_20140603.pdf

This document is a good introduction for delegates to understand the complexity of the definition of “e-waste” and other terms crucial to ensuring proper disposal. This brief report also introduces some international action guidelines and frameworks, such as the EU’s WEEE Directive. Most importantly, this document provides the baseline definitions that are used throughout the international community, which should be considered as delegates think critically about the topic.

Solving the E-Waste Problem. (2016). *Evaluation of Reuse Opportunities within WEEE Compliance Schemes* [Report]. Retrieved 9 July 2018 from: https://www.itu.int/en/ITU-T/climatechange/resources/Documents/Global-Portal/Step_GP_Reuse%20Potential_final.pdf

This report examines reuse and recycling potential through two case studies in the United Kingdom and Belgium. Throughout the analysis, the report focuses on overviews of each waste management system, factors contributing to their successes, and barriers within each system. The report concludes with a set of recommendations on the future of addressing e-waste management. In this document delegates can find an overview of the more technical reporting aspects on this topic, contextualizing the difficulties in data collection and compliance throughout the world.

United Nations Conference on Environment and Development. (1992). *Agenda 21* [Outcome Document]. Retrieved 3 August 2018 from <https://sustainabledevelopment.un.org/outcomedocuments/agenda21>

Chapter 20 of Agenda 21 outlines four program areas that address hazardous waste. Each program area provides the basis of action, objectives, activities, and means of implementation that frame the issue and provide details on how to minimize waste and protect the environment to the greatest possible extent. The four program areas look at minimizing hazardous waste, strengthening institutional capacity, promoting international cooperation, and preventing illegal trafficking. Each program area will help to guide delegates in their research by providing further background on each objective along with the substantive implementation mechanisms that will inspire future solutions.

United Nations Environment Management Group. (2017). *United Nations System-wide Response to Tackling E-Waste* [Report]. Retrieved 4 July 2018 from: <https://unemg.org/images/emgdocs/ewaste/E-Waste-EMG-FINAL.pdf>

Published by the Issue Management Group on Tackling E-Waste, this report provides a comprehensive overview of the role of the international system in addressing global e-waste. After providing a discussion on the global e-waste challenge and its relationship to specific SDGs, the report identifies the role of UN entities with expertise involved in e-waste management, notable partnerships and collaborations, and global initiatives. The involvement analysis is followed by a set of recommendations, including increased collaboration with the private sector, adopting the electronic life-cycle principle, addressing security issues regarding the transport of e-waste, and increased coordination between UN entities. This report highlights the complex nature of the topic and the various actors involved by providing key information on e-waste and the SDGs, international and regional frameworks, and areas for improvement.

United Nations Environment Programme. (2017). *Waste Management in ASEAN Countries* [Report]. Retrieved 4 July 2018 from: <https://wedocs.unep.org/handle/20.500.11822/21134>

This summary report highlights the country-specific waste management data of 10 ASEAN countries, including generation, common practices, governance, gaps, and recommendations. E-waste is identified as an emerging waste stream and is measured against a set of management goals for each country. The report follows with an individual assessment of policy, programs, technology, and institutional capabilities. The recommendations relevant to e-waste management provide strategic measures for policy and regulation, institutional and technical performance, funding and financing, life cycle design, and stakeholder collaboration. This resource provides a detailed overview of the political and administrative aspects of e-waste management in the ASEAN region and provides delegates with resources for further research.

United Nations, General Assembly, Seventieth session. (2015). *Transforming our world: the 2030 Agenda for Sustainable Development (A/RES/70/1)*. Retrieved 6 August 2018 from <http://undocs.org/A/RES/70/1>

The 2030 Agenda is a foundational document for the current direction of United Nations and the international system. The 2030 Agenda for Sustainable Development consists of 17 Goals specified into 169 targets. Delegates would benefit from familiarizing themselves with the comprehensive range of the goals to understand how they intersect between issues, the United Nations system, and in the greater international context. With analytical and creative thinking, delegates will be able to apply numerous goals and targets to their work on this topic.

United Nations Secretariat of the Basel Convention. (2011). *Basel Convention Milestones* [Website]. Retrieved 6 July 2018 from: <http://basel.int/TheConvention/Overview/Milestones/tabid/2270/Default.aspx>

While the Basel Convention is a comprehensive and highly technical document, the Secretariat has compiled a list of historical milestones to both provide a historical context and introduce related initiatives or bodies. This source in particular refers to the developments the Basel Convention has seen since its inception nearly three decades ago. Delegates can look to this website to find a clear timeline of events relating to the Basel Convention and other related international frameworks. In their research, delegates can be guided by the resources on the website to understand the scope and direction of various aspects of the topic.

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