# The World Health Organization as actor in international environmental law? An analysis by example of the global waste challenge

Rahel Zimmermann

University of Lucerne, Lucerne, Switzerland

**Correspondence**
Email: Rahel.Zimmermann@etu.unige.ch

**Abstract**
In recent years it has proven increasingly difficult to persuade States to adopt new environmental commitments and to comply with their obligations already agreed upon under international environmental law. This begs the question how international environmental law could gain new momentum. This article suggests that a stronger emphasis on the health aspects of environmental problems could drive the international community to better respond to environmental problems. Such a shift of perspective could best be illustrated at the international level if the World Health Organization (WHO) takes on environmental issues. Therefore, this article analyses, by example of the global waste challenge, the WHO's Constitution and the International Health Regulations (2005) to determine its potential and limitations as an actor in international environmental law. The article argues that the WHO should use the ongoing COVID-19 pandemic to step up its commitment towards the environment, strengthen the 'One Health' approach and thereby help international environmental law regain momentum.

## 1 INTRODUCTION

In the last three decades it has proven increasingly difficult to persuade States to adopt new environmental commitments. Since the 2002 World Summit on Sustainable Development, States instead have focused on better implementing the existing treaties.[1] Nevertheless, nearly 20 years after this change in focus, the vast majority of treaties are still failing to actually reduce the environmental harms they were designed to address.

For this reason, a report by the United Nations Secretary-General in 2018 sought to identify the gaps and deficiencies inherent to international environmental law.[2] Among others, the report identified the fragmentation and sectoral nature of international environmental law responsible as one of its shortcomings. Many scholars have already written about the fragmentation of international environmental law and proposed different solutions to address the risks of duplication, divergence and even conflict between environmental obligations that arise due to this fragmentation.[3] One prominent suggestion is the adoption of a 'Global Pact for the Environment', an umbrella treaty that codifies all guiding principles of international

[1] G Nagtzaam, E Van Hook and D Guilfoyle, *International Environmental Law: A Case Study Analysis* (Routledge 2020) 575; United Nations Environment Programme (UNEP), 'Environmental Rule of Law: First Global Report' (UNEP 2019) 27.

[2] UNGA 'Gaps in International Environmental Law and Environment Related Instruments: Towards a Global Pact for the Environment' UN Doc A/73/419 (30 November 2018).

[3] To name just a few: KN Scott, 'International Environmental Governance: Managing Fragmentation through Institutional Connection' (2011) 12 Melbourne Journal of International Law 177 (advocating institutional cooperation and integration); CP Carlarne, 'Good Climate Governance: Only a Fragmented System of International Law Away?' (2008) 30 Law & Policy 450 (supporting the creation of an International Environmental Organization); RE Kim and K Bosselmann, 'International Environmental Law in the Anthropocene: Towards a Purposive System of Multilateral Environmental Agreements' (2013) 2 Transnational Environmental Law 285 (making the case for recognizing a '*Grundnorm*', an overarching goal that binds the actions of international environmental actors and institutions).

environmental law and sets a benchmark for all the sectoral agreements in force.[4] But due to the States' reluctance to adopting new legally binding agreements the Global Pact has struggled to get passed.[5] There is an urgent need to unblock the reluctance of States and to find new ways to advance international environmental law.

This article proposes to emphasize the health aspects of environmental problems to give international environmental law new momentum. Examining the history and development of international environmental law reveals that it has always been dominated by an anthropocentric perspective. New treaties have been concluded for three main reasons: when the use and preservation of an important resource was at stake;[6] when there was public pressure to respond to a serious environmental disaster;[7] or when there was scientific evidence that the health and well-being of people were seriously threatened by an environmental hazard and a feasible technical solution was in sight.[8] The primary purpose of international environmental law has always been to serve humankind. Although it would be highly desirable that we put environment at the centre and take action also for the sake of nature itself (i.e. adopting an ecocentric approach), the reality is that most people intuitively prioritize the health and well-being of people over the health of animals and the environment.[9]

The ongoing COVID-19 pandemic serves as an excellent illustration of how quickly individual States as well as the international community can respond to a global emergency and what profound measures societies are willing to endure if only they feel that their health is seriously threatened. If the general population were to feel more threatened by environmental problems, such as climate change or pollution, governments would eventually be forced to address these concerns with more determination.[10]

Such an amplification of the risks of environmental problems to human health can best be illustrated at the international level if the World Health Organization (WHO) takes on environmental issues. This article therefore aims to explore the question of what potential the WHO has as an actor in international environmental law by analysing its Constitution and the International Health Regulations (IHR). It argues that the COVID-19 pandemic could be the right time to make better use of the WHO's potential.

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[4] Permanent Mission of France to the United Nations, 'The UN Should Adopt the Global Pact for the Environment' (2019) <https://onu.delegfrance.org/The-UN-should-adopt-the-Global-Pact-for-the-Environment>; see also MA Tigre, *Gaps in International Environmental Law: Toward a Global Pact for the Environment* (Environmental Law Institute Press 2020).

[5] See J Juste Ruiz, 'The Process towards a Global Pact for the Environment at the United Nations: From Legal Ambition to Political Dilution' (2020) 29 Review of European, Comparative and International Environmental Law 479.

[6] E.g., the Convention for the Regulation of Whaling (1931), the Convention on Fishing and Conservation of the Living Resources of the High Seas (1958) or the International Tropical Timber Agreement (2006).

[7] E.g., after the first major oil spill from the tanker *Torrey Canyon* in 1967, after toxic contamination scandals, such as the *Khian Sea* and the *Koko* accidents in the 1980s or after the nuclear accident in Chernobyl in 1986.

[8] E.g., the Convention on Long-Range Transboundary Air Pollution (1979) and its various protocols, the Vienna Convention for the Protection of the Ozone Layer (1985) and its Montreal Protocol on Substances that Deplete the Ozone Layer (1987).

[9] See SL Deem, KE Lane-deGraaf and EA Rayhel, *Introduction to One Health: An Interdisciplinary Approach to Planetary Health* (Wiley-Blackwell 2019) 63.

[10] See M Baldassare and C Katz, 'The Personal Threat of Environmental Problems as Predictor of Environmental Practices' (1992) 24 Environment and Behavior 602 (suggesting that people who perceive that environmental problems pose a very serious threat to their health and well-being are more likely to engage overall in environmental practices and that overall environmental practices are better explained by personal environmental threat than demographic and political factors); PD Almeida, 'The Role of Threat in Collective Action' in D Snow et al (eds), *The Wiley Blackwell Companion to Social Movements* (2nd edn, John Wiley and Sons Ltd, 2019) 43 (writing about the role of different structural threats such as public health/environmental decline in stimulating collective action).

## 2 COVID-19 AS AN OPPORTUNITY TO ADVANCE THE 'ONE HEALTH' APPROACH

The WHO-convened Global Study of the Origins of SARS-CoV-2[11] found that the virus that causes COVID-19, most likely leapt from animals to humans and had a zoonotic source.[12] The Director-General of the WHO, Tedros Adhanom Ghebreyesus, stated in his address to the 73rd World Health Assembly on 18 May 2020:

> The pandemic is a reminder of the intimate and delicate relationship between people and planet. Any efforts to make our world safer are doomed to fail unless they address the critical interface between people and pathogens, and the existential threat of climate change, that is making our Earth less habitable.[13]

In this context, calls among scientists for advancing and implementing the 'One Health' approach to improve human health and reduce the emergence of pandemic viruses are growing louder.[14] The 'One Health' approach recognizes that the health of people is closely connected to the health of animals and our shared environment. It wants to achieve the best health outcomes for people, animals and plants by promoting collaboration between professionals in human health, animal health, environment and other areas of expertise.[15] The WHO embraced the 'One Health' approach already in different contexts, as will be shown below, and collaborates with multiple actors to promote multi-sectoral responses especially to food safety hazards and risks from zoonoses. This approach could be key in shaping public perception of the link between human health and the environment.

Similar to the 'One Health' approach, the understanding that the environment and human health are closely linked is also present in international environmental law. The ecosystem approach, which constitutes the primary framework for action under the Convention on Biological Diversity (CBD),[16] acknowledges for example that biodiversity in its various forms can only be successfully conserved if it is understood in its ecosystem context and that humans are an integral component of these ecosystems.[17]

The concepts of 'planetary boundaries' or 'earth system targets' want to define a 'safe operating space for humanity' and fix 'boundaries' respectively 'targets' that humanity must not cross at the cost of its own peril, highlighting that humanity is entirely dependent on the health of animals and the environment.[18]

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[11] WHO, 'WHO-Convened Global Study of the Origins of SARS-CoV-2' (2021) <https://www.who.int/health-topics/coronavirus/origins-of-the-virus>.

[12] This conclusion is not universally accepted, and there are also other hypothesises, for instance that the coronavirus SARS-CoV-2 escaped from a lab in China, that could not be ruled out so far; see A Maxmen and S Mallapaty, 'The COVID Lab-Leak hypothesis: What Scientists Do and Don't Know' (2021) 594 Nature 313.

[13] WHO, 'WHO Manifesto for a Healthy Recovery from COVID-19' (26 May 2020) <https://www.who.int/news-room/feature-stories/detail/who-manifesto-for-a-healthy-recovery-from-covid-19>.

[14] E.g., ME El Zowalaty and JD Järhult, 'From SARS to COVID-19: A Previously Unknown SARS-Related Coronavirus (SARS-CoV-2) of Pandemic Potential Infecting Humans – Call for a One Health approach' (2020) 9 One Health 100124; T Ahmad and J Hui, 'One Health Approach and Coronavirus Disease 2019' (2020) 16 Human Vaccines and Immunotherapeutics 931.

[15] See Centers for Disease Control and Prevention, 'One Health Basics' <https://www.cdc.gov/onehealth/basics/index.html>.

[16] Convention on Biological Diversity (adopted 5 June 1992, entered into force 29 December1993) 1760 UNTS 79 (CBD).

[17] See CBD, 'Ecosystem Approach' <https://www.cbd.int/ecosystem/>.

[18] F Biermann and RE Kim, 'The Boundaries of the Planetary Boundary Framework: A Critical Appraisal of Approaches to Define a "Safe Operating Space" for Humanity' (2020) 45 Annual Review of Environment and Resources 497, 498.

Advocates of the human right to a healthy environment argue that the recognition of this right would make clear that environmental protection is vital to human wellbeing, dignity, equality and freedom.[19] Environmental protection also contributes to the enjoyment of other human rights including the rights to life, health, food and water.[20] Even though more than 150 States have so far recognized the right to a healthy environment through regional agreements, national constitutions, other national laws or court decisions, the United Nations (UN) has so far never explicitly recognized the human right to a healthy environment in a global instrument.[21] In March 2021, however, 60 States urged the Human Rights Council to recognize the right to a healthy environment, raising hopes that the UN could soon add a new universal human right to the list.[22]

The experiences and lessons learned from the COVID-19 pandemic could strengthen such initiatives and approaches if the nexus between environment and human health were emphasized more on the international level. But what are the WHO's competences to do so?

## 3 THE WORLD HEALTH ORGANIZATION

In international law, the competences of an international organization are derived from its constitution, which may contain powers expressly stated, but also so-called 'implied powers'.[23] According to Article 31(1) of the Vienna Convention on the Law of Treaties (VCLT)[24], when interpreting a treaty, it shall be interpreted in good faith and in the light of its object and purpose. In addition, any subsequent agreement between the parties or any subsequent practice in the application of the treaty shall be taken into account with regard to its interpretation (Article 31(3) VCLT). In the following, this article will analyse the Constitution[25] and the IHR[26] of the WHO to establish its competences and possibilities to act on environmental issues.

### 3.1 The Constitution: a wide spectrum of possibilities

The WHO was founded in 1948 as a UN specialized agency and counts as of today 194 member States. The Constitution follows for the most part a classical structure, as it can also be found in other founding documents of agencies belonging to the UN system.[27] In the Constitution's preamble, health is described as 'a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity'.[28] This very broad definition of health reflects the desire of the WHO's founders to not limit its scope to preventing the spread of diseases and to go beyond the biomedical focus of its institutional predecessors.[29] According to Article 1 of

[19] JH Knox, 'The Global Pact for the Environment: At the Crossroads of Human Rights and the Environment' (2019) 28 Review of European, Comparative and International Environmental Law 40, 47.
[20] Human Rights Council (HRC) 'Human Rights and the Environment' UN Doc A/HRC/RES/46/7 (30 March 2021) 2.
[21] Knox (n 19) 41–42.
[22] 'Environment @ 46th Session of the UN Human Rights Council' <https://www.genevaenvironmentnetwork.org/resources/updates/environment-46th-session-of-the-un-human-rights-council/>.
[23] *Reparation for Injuries Suffered in the Service of the United Nations* (Advisory Opinion) [1949] ICJ Rep 174, 182.
[24] Vienna Convention on the Law of Treaties (adopted 23 May 1969, entered into force 27 January 1980) 1155 UNTS 331.
[25] Constitution of the World Health Organization (adopted 22 July 1946, entered into force 7 April 1948) 14 UNTS 185 (WHO Constitution).
[26] International Health Regulations (2005) (adopted 23 May 2005, entered into force 15 June 2007) 2509 UNTS 79 (IHR).
[27] GL Burci and CH Vignes, *World Health Organization* (Kluwer Law International 2004) 5.
[28] WHO Constitution (n 25) preamble.
[29] K Lee, *The World Health Organization (WHO)* (Routledge 2009) 16.

the Constitution the objective of the WHO consists of 'the attainment by all peoples of the highest possible level of health'.[30] To achieve this objective, the WHO has a whole list of functions, which are listed in article 2 of its Constitution.

The very broad and progressive definition of health in the preamble in connection with the objective in Article 1 would therefore allow environmental issues to be included under the competence of the WHO, provided that they have an impact on the physical, mental and/or social well-being of humans. This being established, the WHO would have promising and far-reaching powers pursuant to Article 2 of its Constitution: It could, for example, propose legally binding conventions, agreements and regulations and make recommendations, it could offer technical assistance to States, promote cooperation among scientific and professional groups, establish collaboration with other organizations and take any other necessary action to achieve its objective of the attainment of the highest possible level of health by all people.[31]

The WHO has three organs as stated in Article 9: the World Health Assembly, the Executive Board and the Secretariat.[32] Moreover, committees and regional organizations can be established. Today, there are six such regional organizations – for the African Region, Region of the Americas, South-East Asia Region, European Region, Eastern Mediterranean Region and Western Pacific Region – as well as 149 field offices. Hence, the WHO is a decentralized organization in which a great part of its power and responsibilities are transferred to a number of regional bodies, because at its creation it was considered that such a regional structure would be more effective in solving the local health problems.[33]

The World Health Assembly, as the highest decision-making body of the WHO, is empowered under Article 19 to adopt conventions or agreements with respect to any matter within its competence. In contrast to its broad competence to adopt conventions or agreements, the World Health Assembly's authority to adopt regulations is limited to very specific normative contents listed in Article 21(a) to (e). These regulations have the advantage of entering into force automatically for all member States, except for those that notify the Director-General of rejection or reservations within a fixed period of time.[34] Furthermore, the World Health Assembly can make recommendations and convene conferences to consider any matter within the WHO's competence.[35]

Lastly, according to Article 62, each member State is required to report annually on the actions taken with respect to the recommendations and the conventions, agreements and regulations adopted by the WHO. However, the Constitution does not contain any non-compliance procedure.

For much of its existence, the WHO was not what its Constitution would lead one to expect.[36] Although it has more normative powers than most other international organization, the WHO has drafted only one convention (the WHO Framework Convention on Tobacco Control) and two regulations (the International Classification of Diseases and the IHR) up until now.[37] In many cases, the WHO has preferred to rather use its standard-setting powers through the issuance of recommendations, as they are – despite being legally non-binding – highly recognized in terms of compliance and enjoy the WHO's scientific credibility and soundness.[38]

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[30] WHO Constitution (n 25) art 1.
[31] ibid art 2(b), (d), (j), (k) and (v).
[32] The Secretariat comprises the Director-General of the WHO. Since 2017, Tedros Adhanom Ghebreyesus from Ethiopia has been Director-General of the WHO.
[33] Burci and Vignes (n 27) 17.
[34] So-called 'opting out'; see WHO Constitution (n 25) art 22.
[35] WHO Constitution (n 25) art 23 and 41.
[36] JE Alvarez, *The Impact of International Organizations on International Law* (Brill/Nijhoff 2017) 205.
[37] Burci and Vignes (n 27) 153.
[38] SK Behrendt, *The International Health Regulations and the Executive Authority of the World Health Organization during Public Health Emergencies of International Concern* (University of St. Gallen 2009) 68.

Indeed, soft law instruments can have certain advantages over hard law and can be, under certain circumstances, more effective than hard law agreements in the same area.[39]

But the main obstacle to the full use of the Constitution's potential was and still oftentimes is that the WHO is being reduced to a disease-focused mandate and technical assistance. Priority was given to initiatives addressing for example malaria, tuberculosis and sexually transmitted diseases.[40] In circumstances in which the WHO tried to interpret its competences more broadly, it was repeatedly criticized and reprimanded. For example, when the WHO intended to adopt the International Code of Marketing of Breast-Milk Substitutes in 1981, some delegations objected that the WHO was moving into the area of 'commercial codes', which did not pertain to it.[41] Another example is the *Nuclear Weapons Case*, where the International Court of Justice (ICJ) ruled that the question – 'in view of the health and environmental effects, would the use of nuclear weapons by a State in war or other armed conflict be a breach of its obligations under internal law including the WHO constitution?' – does not fall within the competence of the WHO.[42] One of the reasons given by the ICJ for its decision was that, according to the 'principle of speciality', the WHO may not encroach on the responsibilities of other parts of the UN system.[43] However, this view was criticized by various voices as being based on an unrealistic vision of the UN system as composed of bodies and agencies with exclusive and clearly delimited technical mandates.[44]

Overlaps with responsibilities of other organizations often made it difficult for the WHO to distinguish and assert itself against other strong organizations such as the United Nations Children's Fund (UNICEF) or the United Nations Development Programme (UNDP). The WHO was repeatedly reduced to formulating recommendations, while other 'operational' organizations were meant to implement them.[45] It was not until the turn of the century that the WHO's focus slowly started to shift from diseases to also other – social, economic and ecological – factors of health and a Commission on Social Determinants of Health was launched by the Director General.[46]

### 3.2 The International Health Regulations: tailor-made for infectious diseases

When the WHO was founded in 1948, it was given the mandate to incorporate numerous existing conventions on different diseases in a set of International Sanitary Regulations. The International Sanitary Regulations were then replaced in 1969 with the renamed 'International Health Regulations'. The scope of the IHR (1969) was limited to specific diseases: cholera, plague and yellow fever, as smallpox was removed from the IHR (1969) in 1981 after it had been eradicated. Moreover, the WHO was dependent on the willingness of member States to notify outbreaks of the listed diseases. Hence, the IHR (1969) were soon outdated and proved to be unsuitable for dealing with new threats such as HIV/AIDS, so that the World Health

Probably the best-known recommendation by the World Health Assembly is the International Code of Marketing of Breast-Milk Substitutes.

[39] See G Shaffer and MA Pollack, 'Hard and Soft Law: What Have We Learned?' in JL Dunoff and MA Pollack (eds), *International Law and International Relations: Insights from Interdisciplinary Scholarship* (Cambridge University Press 2012) 197.

[40] Lee (n 29) 17.

[41] Burci and Vignes (n 27) 113.

[42] See Behrendt (n 38) 32.

[43] *Legality of the Use by a State of Nuclear Weapons in Armed Conflict* (Advisory Opinion) [1996] ICJ Rep 66 para 26.

[44] Burci and Vignes (n 27) 117.

[45] Lee (n 29) 19.

[46] ibid 95.

Assembly decided in 1995[47] to revise the IHR (1969).[48] The revised IHR were adopted by the World Health Assembly on 23 May 2005[49] and entered into force on 15 June 2007.[50] Until today, 196 States have ratified the IHR (2005), every WHO member plus Liechtenstein and the Holy See.

The scope of the IHR (2005) no longer covers only a few specific diseases, but is now – in line with a 'one-size-fits-all' approach – applicable to basically any threat to human health including naturally occurring diseases, but also, for example, accidental releases or deliberate uses of biological, chemical or radioactive substances, that affect health.[51] This is derived *inter alia* from the purpose of the IHR (2005) in its Article 2, which is to prevent and protect against the international spread of disease. According to Article 1, 'disease' is defined as an 'illness or medical condition, irrespective of origin or source, that presents or could present significant harm to humans'.[52] Therefore, if an environmental issue is of such magnitude that it causes medical conditions that seriously harm the health of people across national borders the IHR (2005) seem to be applicable and give the WHO further competences to act on environmental problems.

Pursuant to Article 6(1), member States shall notify the WHO of all events which may constitute a 'public health emergency of international concern' (PHEIC) within its territory. A PHEIC is defined in Article 1 as an extraordinary event which constitutes 'a public health risk to other states through the international spread of disease and potentially requires a coordinated international response'.[53] A decision instrument in Annex 2 of the IHR (2005) is supposed to help member States to determine whether a specific event may constitute a PHEIC and must be reported to the WHO. This is the case if at least two of the following four criteria are met:

(i) The public health impact of the event is serious.[54]
(ii) The event is unusual or unexpected.[55]
(iii) There is a significant risk of international spread.[56]
(iv) There is a significant risk of international travel or trade restrictions.[57]

In addition, four diseases must always be reported to the WHO when they occur, that is smallpox, poliomyelitis due to wild-type poliovirus, human influenza caused by a new subtype and the severe acute respiratory syndrome (SARS).[58] Whereas Article 6 is conceptualized for

[47] WHA 'Revision and updating of the International Health Regulations' UN Doc WHA48.7 (12 May 1995).
[48] See Alvarez (n 36); and HC Matter, *Internationale Gesundheitsvorschriften (2005): internationale Bedeutung und Auswirkungen auf die Steuerung und Organisation der Krankheitsbekämpfung in der Schweiz* (KPM 2009).
[49] WHA 'Revision of the International Health Regulations' UN Doc WHA58.3 (23 May 2005).
[50] Alvarez (n 36) 208.
[51] Behrendt (n 38) 82; Matter (n 48) 55.
[52] IHR (n 26) art 1.
[53] ibid.
[54] This is the case if the number of cases and/or number of deaths for this type of event is large for the given place, time or population; if the event has the potential to have a high public health impact or if external assistance is needed to detect, investigate, respond and control the current event, or prevent new cases; ibid Annex 2.
[55] This is the case if the event is caused by an unknown agent or the source, vehicle, route of transmission is unusual or unknown; if the evolution of cases is more severe than expected or with unusual symptoms; if the occurrence of the event is itself unusual for the area, season or population or if the event is caused by a disease/agent that had already been eradicated or not previously reported; ibid.
[56] This is the case if there is evidence of an epidemiological link to similar events in other States or if there is any factor that should alert us to the potential for cross border movement of the agent, vehicle or host; ibid.
[57] This is the case if similar events in the past have resulted in international restriction on trade and/or travel; if the source suspected or known to be a food product, water or any other goods that might be contaminated that has been exported/imported to/from other State; if the event has occurred in association with an international gathering or in an area of intense international tourism or if the event caused requests for more information by foreign officials or international media; ibid.
[58] ibid.

epidemiological events, Article 7 has a broader scope and encompasses all unexpected or unusual public health events (like for example a radio-nuclear emergency or a chemical accident) that may constitute a PHEIC and requires member States to provide the WHO with all relevant public health information.[59]

Article 9(2) allows member States to inform the WHO of evidence of a public health risk identified outside their territory. Compared to the IHR (1969), the IHR (2005) introduce a further important innovation in Article 9(1), which allows the WHO to consider reports from sources other than notifications or consultations by member States. If, for example, a private person or a nongovernmental organization (NGO) reports to the WHO an event that may constitute a PHEIC, the WHO must consult the member State in whose territory the event allegedly occurred and attempt to obtain verification in accordance with the procedure set forth in Article 10.[60] If the member State fails to cooperate, the WHO may, according to Article 10(4), share the information available with other member States. This mechanism should act as an incentive for member States to collaborate with the WHO and not to withhold information on disease outbreaks and potential PHEIC.[61] Moreover, Article 9 gives individuals now a direct and explicit mandate from the international community to take an active role in promoting global health and ensuring that governments are being responsive to the people's needs.[62] However, according to Article 9(1), the WHO is in principle obliged to make the information received available to the member States and can only maintain the confidentiality of the source, where it is duly justified.[63]

The final decision as to whether an event constitutes a PHEIC lies with the Director-General of the WHO.[64] For this decision he/she shall consider, pursuant to Article 12(4), the information provided by the member State, the decision instrument in Annex 2, the advice of the Emergency Committee,[65] the scientific principles as well as the available scientific evidence and an assessment of the risk to human health, of international spread of disease and of interference with international traffic.[66] If the Director-General determines that a PHEIC is occurring, he can issue temporary[67] or standing recommendations in consideration of the views of the States directly concerned, the advice of the Emergency Committee or the Review Committee, scientific principles and information and other criteria.[68] The recommendations are in principle not binding on the member States. However, they can create political pressure and it can be argued that, by ratifying the IHR (2005) and according to the principle of good faith, member States have at least a duty to consider the recommendations issued by the Director-General as well as a duty to cooperate with the WHO and other member States.[69] That could include an obligation to consult with the WHO when it does not or cannot comply with a recommendation.[70] But the member States may also take health measures that achieve the same or a greater level of health protection than the WHO recommendations (Article 43).

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[59] Behrendt (n 38) 194.
[60] Matter (n 48) 57.
[61] Behrendt (n 38) 196; Matter (n 48) 58.
[62] SE Davies and J Youde, 'The IHR (2005), Disease Surveillance, and the Individual in Global Health Politics' (2013) 17 International Journal of Human Rights 133, 139–140.
[63] Matter (n 48) 74.
[64] IHR (n 26) art 12(1).
[65] The Emergency Committee is composed of experts selected by the Director-General; ibid art 48(2)). It also advises the Director General with regard to temporary recommendations within the meaning of Article 15 (ibid art 48(1)(c)). In addition to the Emergency Committee, an IHR Roster of Experts and a Review Committee were also created within the framework of the IHR. The latter is to regularly review the functioning of the IHR and to advise the Director-General with regard to standing recommendations within the meaning of Article 16 (ibid art 50(1)).
[66] Matter (n 48) 61.
[67] They usually expire automatically three months after their issuance but can be extended; IHR (n 26) art 15(3).
[68] ibid arts 15–17. Examples of possible health measures are enumerated in ibid art 18.
[69] cf ibid art 44.
[70] Behrendt (n 38) 296ff; Matter (n 48) 75.

In conclusion, since their revision in 2005 the IHR are in principle a promising instrument, that would allow the WHO to bring the attention of the international community to international health threats and their causes and to formulate recommendations for that matter. They also encourage civil society to get involved and make the WHO aware of such cases. But to date the WHO has declared a PHEIC only in six cases: H1N1 influenza virus (April 2009)[71]; poliomyelitis (May 2014); Ebola virus (August 2014); Zika virus (February 2016); Ebola virus once again (July 2019); and novel coronavirus (January 2020).[72] These examples show that despite the conceivably wider scope of application of the IHR (2005), a PHEIC has so far only been declared for infectious diseases. In the case of the Fukushima nuclear disaster in Japan or the chemical weapons use in Syria, the Emergency Committee was not even convened.[73]

This raises the question whether an environmental problem could prompt a declaration of a PHEIC by the WHO due to its adverse effects on human health. As environmental problems are complex and various in nature, a comprehensive analysis would go beyond the scope of this article. Instead, the article will analyse this question and the possible other competences that the WHO has, by virtue of its Constitution, to act on environmental issues by using the illustrative example of the global waste challenge.[74]

## 4 ILLUSTRATIVE EXAMPLE: THE GLOBAL WASTE CHALLENGE

Waste affects human health and the environment in many ways. Waste lying around or floating in the water, such as broken glass or medical waste, can cause direct physical harm to people and animals alike. At the same time there are also many indirect effects of waste on health and the environment. The uncontrolled burning of waste creates particulate and persistent organic pollutant emissions. Open dumps and drains blocked by waste encourage vectors to breed, resulting in the spread of cholera, dengue fever and other infectious diseases. Furthermore, drains blocked by waste are often also a major contributing factor to flooding. Uncontrolled dumpsites, where hazardous and other wastes are mixed, can cause diseases and allergies, especially among children and waste workers. Hazardous wastes and chemicals can contaminate both surface water and groundwater.[75] But despite these far-reaching negative impacts of waste on the environment and human health, it was estimated in 2015 that at least 3 billion people worldwide still lack access to controlled waste disposal facilities.[76]

A further issue is e-waste.[77] E-waste was non-existent 30 years ago and now constitutes the fastest-growing domestic waste stream in the world.[78] Today, millions of people in developing countries make their living from recycling e-waste in the informal sector under dismal

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[71] Also known as 'swine flu'.

[72] 'Die Internationalen Gesundheitsvorschriften der Weltgesundheitsorganisation' <https://www.rki.de/DE/Content/Infekt/IGV/igv_node.html>.

[73] LO Gostin and R Katz, 'The International Health Regulations: The Governing Framework for Global Health Security' (2016) 94 The Milbank Quarterly 264, 275.

[74] Recognizing the close link between waste and hazardous substances, and that it is often difficult to clearly distinguish between them, this article will focus primarily on waste issues, and treaties and soft law instruments of international waste law.

[75] UNEP, 'Global Waste Management Outlook' (2015) 2 and 212–213.

[76] ibid 52.

[77] While there is no global consensus on a legal definition of e-waste, e-waste is commonly described as 'electrical and electronic equipment, which is waste, including all components, subassemblies and consumables, which are part of the equipment at the time the equipment becomes waste' such as personal computers, printers, televisions, mobile phones, refrigerators and air-conditioning units'; see UNEP, 'E-waste' <http://www.basel.int/Implementation/Ewaste/Overview/tabid/4063/Default.aspx>; and WHO, 'Children and Digital Dumpsites: E-waste Exposure and Child Health' (2021) 2.

[78] See WHO, 'Global E-waste Surging: Up 21 Per Cent in 5 Years' (28 June 2020) <https://www.who.int/news/item/28-06-2020-global-e-waste-surging-up-21-per-cent-in-5-years>; and V Forti et al, *The Global E-waste Monitor 2020: Quantities, Flows and the Circular Economy Potential* (UN University, UN Institute for Training and Research and International Telecommunication Union 2020).

conditions that seriously endanger the recyclers health as they are directly exposed to toxic substances and fumes.[79] Hazardous substances can also leach into soil and water. Dust contaminated by toxic e-waste can be ingested or carried back home into the community by workers on their shoes and clothes, putting at risk even more children and adults.[80]

Another topic that has emerged in recent years is microplastics. Microplastics are ubiquitous in the environment and have been detected in marine water, wastewater, fresh water, food, air and drinking water.[81] Due to their large surface-to-volume ratio, microplastics are particularly prone to absorbing toxic substances from seawater, making microplastics a vehicle for toxic substances, which may be ingested and enter the marine food chain posing an emerging food safety concern.[82] Studies suggest that the alternate ingestion of microparticles could cause alteration in chromosomes which lead to infertility, obesity and cancer.[83] However, the WHO stated in a report in 2019 that there is currently no evidence to suggest a human health risk from microplastic exposure through drinking water.[84] But more high quality data and well-designed studies regarding microplastics in drinking water and the overall exposure to microplastics are needed.[85]

### 4.1 The fragmented and reactive international waste regime

A glance at the 17 UN Sustainable Development Goals (SDGs) and its 169 targets shows that waste and solid waste management is a crosscutting issue that can be directly linked to at least 12 out of the 17 SDGs, as it affects various areas of our life including living conditions, sanitation, public health, marine and terrestrial ecosystems, access to decent jobs, as well as the sustainable use of natural resources.[86] Despite this, this issue has so far only been selectively addressed by multilateral environmental agreements (MEAs).

Probably the most famous 'waste' treaty is the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal[87] that was adopted on 22 March 1989 under the auspices of the United Nations Environment Programme (UNEP). It was drafted in response to the globalization of waste exchange and seeks to organize the transfer of waste, whilst not banning it altogether.[88] The Convention defines waste as 'substances or objects which are disposed of or are intended to be disposed of or are required to be disposed

[79] J Jin, 'E-Waste & the Regulatory Commons, A Proposal for the Decentralization of International Environmental Regulation' (2014) 39 Brooklyn Journal of International Law 1251, 1256–1257; K Kummer Peiry, 'Turning Wastes into Valuable Resources' (2011) 41 Environmental Policy and Law 177, 179.
[80] WHO (n 77) xiv.
[81] M Smith et al, 'Microplastics in Seafood and the Implications for Human Health' (2018) 5 Current Environmental Health Reports 375, 379–380; WHO, 'Microplastics in Drinking-Water' (2019) vii.
[82] G Carlini and K Kleine, 'Advancing the International Regulation of Plastic Pollution beyond the United Nations Environment Assembly Resolution on Marine Litter and Microplastics' (2018) 27 Review of European, Comparative and International Environmental Law 234, 237; M Lloyd-Smith and J Immig, 'Contaminants in Marine Plastic Pollution: "The New Toxic Time-bomb"' (National Toxics Network 2016) 6–7.
[83] S Sharma and S Chatterjee, 'Microplastic Pollution, a Threat to Marine Ecosystem and Human Health: A Short Review' (2017) 24 Environmental Science and Pollution Research 21530, 21542. Another interesting study is from CM Rochman et al, 'Anthropogenic Debris in Seafood: Plastic Debris and Fibers from Textiles in Fish and Bivalves Sold for Human Consumption' (2015) 5 Science Reports 14340.
[84] WHO (n 81) 42 and 48.
[85] AA Koelmans et al, 'Microplastics in Freshwaters and Drinking Water: Critical Review and Assessment of Data Quality' (2019) 155 Water Research 410, 417; WHO (n 81) xii-xiii.
[86] L Rodić and DC Wilson, 'Resolving Governance Issues to Achieve Priority Sustainable Development Goals Related to Solid Waste Management in Developing Countries' (2017) 9 Sustainability 1, 1–2.
[87] Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (adopted 22 March 1989, entered into force 5 May 1992) 1673 UNTS 57 (Basel Convention).
[88] O Barsalou and MH Picard, 'International Environmental Law in an Era of Globalized Waste' (2018) 17 Chinese Journal of International Law 887, 898–900.

of by the provisions of national law'.[89] Contrary to its name, the Basel Convention applies not only to hazardous wastes but also to 'other wastes' listed in Annex II like household wastes.[90] E-waste is in principle also covered by the Basel Convention according to its Annex VIII unless it is 'destined for direct reuse and not for recycling or final disposal' (Annex IX) – which leaves admittedly a considerable scope for interpretation. However, the Basel Convention does not apply to radioactive waste.[91]

Radioactive waste is rather addressed by special instruments such as the Code of Practice on the International Transboundary Movement of Radioactive Waste[92] and the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management,[93] both drafted by the International Atomic Energy Agency.

Marine pollution through waste – be it from land-based sources, from ships or dumping – is also regulated in separate international treaties, most of them drafted by the International Maritime Organization.[94] With regard to marine plastic debris and microplastics, four non-binding resolutions were so far adopted by the UN Environment Assembly.[95]

This short overview of international waste law shows that waste is regulated in numerous MEAs elaborated by different international organizations, reflecting the fragmented and reactive nature of international environmental law, as identified by the report of the UN Secretary-General in 2018. Once a particular environmental problem had come to international public attention – for example, the dumping of waste in the sea or in developing countries – the response of the international community was to negotiate a treaty to address this specific type of waste. This 'problem-by-problem approach'[96] requires new legal solutions each time a 'new' type of hazardous waste is appearing. Additionally, there are just as many soft law instruments applicable to waste, so that a dense and complex network of regulations has developed over the years.

The transboundary movement of waste is extensively regulated on the international and regional level. The same applies to radioactive waste or waste from ships, which are regulated in separate instruments drawn up by specialized organizations (International Atomic Energy Agency and International Maritime Organization). Marine pollution from land-based sources, marine plastic litter and microplastic have also received increased attention from the international community in recent years. UNEP combats these issues with resolutions, action plans and a regional seas programme. Further, there are growing calls within UNEP for a global legally binding agreement on marine plastic litter and microplastics.[97] Other categories of

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[89] Basel Convention (n 87) art 2(1).
[90] ibid art 1(2).
[91] ibid art 1(3).
[92] International Atomic Energy Agency, 'Code of Practice on the International Transboundary Movement of Radioactive Waste' INFCIRC/386 (1990).
[93] Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (adopted 5 September 1997, entered into force 18 June 2001) 2153 UNTS 303.
[94] E.g., the United Nations Convention on the Law of the Sea (UNCLOS), the International Convention for the Prevention of Pollution from Ships 1973 as modified by the Protocol of 1978 (MARPOL 73/78), the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (London Convention) and its Protocol from 1996 (London Protocol).
[95] UNEA 'Resolution 1/6, Marine Plastic Litter and Microplastics' UN Doc UNEP/EA.1/Res.6 (27 June 2014); UNEA 'Resolution 2/11, Marine Plastic Litter and Microplastics' UN Doc UNEP/EA.2/Res.11 (4 August 2016); UNEA 'Resolution 3/7, Marine Litter and Microplastics' UN Doc UNEP/EA.3/Res.7 (6 December 2017); UNEA 'Resolution 4/6, Marine Plastic Litter and Microplastics', UNEP/EA.4/Res.6 (15 March 2019).
[96] K Kummer Peiry, 'The Chemicals and Waste Regime as a Basis for a Comprehensive International Framework on Sustainable Management of Potentially Hazardous Materials?' (2014) 23 Review of European, Comparative and International Environmental Law 172, 172.
[97] At the fifth session of the UN Environment Assembly in February 2021, 40 governments expressed support for a new global agreement on plastic pollution; Center of International Environmental Law, 'Progress on Plastics Update, Issue 14' (2021) <https://www.ciel.org/wp-content/uploads/2021/03/Progress-on-Plastics-Update-Issue-14-UNEA5.1-Feb-2021-1.pdf>.

waste, such as e-waste or the national treatment of municipal waste, have, however, not or only incompletely been regulated at the international level so far.

Furthermore, while most of the abovementioned conventions have been ratified by the vast majority of States and have achieved remarkable improvements, waste production is steadily increasing[98] and the negative impacts on the environment and human health are far from being resolved. One reason is that waste is increasingly seen as a commodity through the lenses of international economic law (which falls under the domain of the World Trade Organization), instead of a hazard to be reduced under international environmental law.[99] Moreover, the current waste regime neither provides a general definition for waste with existing definitions being convention-based and subject-specific,[100] nor designates any quantitative restrictions on waste production within specific time frames. Instead, due to its weak procedural and substantive legal framework, the Basel regime is less of an impediment than a facilitator of increasing global waste trade.[101]

Hence, there are many remaining challenges in international waste law. The implementation and enforcement of the existing treaties must be improved and their interrelation with instruments of international trade law must be clarified. To render the international waste regime more effective, the focus should be shifted from merely treating the symptoms of the waste crisis towards also addressing the causes of pollution and the increasing production trends. In this sense, some scholars argue that a new, more comprehensive waste convention should be aspired to, which would also seek to regulate the national treatment of waste, waste reduction and clean production processes.[102]

### 4.2 What could the WHO do?

As waste usually remains low at the political agendas at both the national and international levels, a stronger focus on the risks of waste to human health may help to make this issue more emotionally appealing and thus worthy of financial and political support.[103] The WHO could emphasize, in line with the 'One Health' approach, that the global waste challenge not only affects the environment and animal health but also human health, and collaborate with other organizations to combat this health threat. Addressing waste from a more comprehensive health perspective could, moreover, help overcome the current fragmentary international waste regime.

The Conference of the Parties to the Basel Convention already recognized 2008 in the Bali Declaration 'that waste, if not managed in a safe and environmentally sound manner[104], may have serious consequences for the environment, *human health* and sustainable livelihood' and

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[98] See the analysis of the data from national reporting to the Secretariat of the Basel Convention for the years 2007–2015: UNEP, 'Waste Without Frontiers II: Global Trends in Generation and Transboundary Movements of Hazardous Wastes and Other Wastes' (2018) <http://www.basel.int/Portals/4/Basel%20Convention/docs/pub/WasteWithoutFrontiersII.pdf>. The COVID-19 pandemic has also led to an escalation in waste production, because of the increased use of single-use plastics such as masks, gloves and bottles of sanitizers as well as an increased consumption of packed food and food delivery during lockdown; see TM Adyel, 'Accumulation of Plastic Waste During COVID-19' (2020) 369 Science 1314, 1314.

[99] Barsalou and Picard (n 88) 900.

[100] ibid 889.

[101] ibid 901.

[102] E.g., Kummer Peiry (n 96) 176; GD Meyers, G McLeod and MA Anbarci, 'An International Waste Convention: Measures for Achieving Sustainable Development' (2006) 24 Waste Management & Research 505, 508.

[103] K Kummer Peiry, 'International Chemicals and Waste Management' in M Fitzmaurice, DM Ong and P Merkouris (eds), *Research Handbook on International Environmental Law* (Edward Elgar 2010) 637, 649.

[104] The Basel Convention (n 87) art 2(8) defines the 'environmentally sound management of waste' as 'taking all practicable steps to ensure that hazardous wastes or other wastes are managed in a manner which will protect human health and the environment against the adverse effects which may result from such wastes'.

invited the World Health Assembly 'to consider a resolution related to the improvement of health through safe and environmentally sound waste management'.[105] A few months later, the UNEP Governing Council/Global Ministerial Environment Forum at its 25th session in February 2009 also recognized the link between waste and human health.[106] In May 2010, the World Health Assembly adopted a resolution on the 'improvement of health through safe and environmentally sound waste management',[107] underlining that the WHO has the competence to deal with the waste problem as waste can be detrimental to human health, through polluted air, water, land and food chains.

However, the progress report on the implementation of this resolution[108] a year later was focused mainly on health care waste.[109] Through its linkage with the health care sector, the WHO considers itself primarily responsible for this type of waste, because the management of health care waste is an integral part of national health care systems. But, as this article has argued above, any type of waste can have negative impacts on the physical, mental and social well-being of humans, if not managed in a safe and environmentally sound manner. Hence, the WHO could be bolder and increase its engagements also with regard to other types of waste.

### 4.2.1 By virtue of its Constitution

As established in Section 3.1, the WHO could adopt according to Article 19 of its Constitution a new convention or agreement on waste. It could, for example, draft in collaboration with UNEP a new more comprehensive waste convention, that transcends the presently dominating 'problem-by-problem approach' in international waste law and also addresses the national treatment of waste and waste reduction. The WHO could, however, not issue regulations on the environmentally sound management of waste, as this cannot be subsumed under any letter of Article 21 of the Constitution.

The WHO's Constitution contains a broad catalogue of further options for action, such as making recommendations, convening conferences, promoting cooperation among scientific and professional groups and collaborate with other organizations. Thus, the WHO could convene an international conference on waste and human health aimed at improving the implementation of current waste regulations. Alternatively, it could elaborate in collaboration with UNEP new recommendations, such as a code of conduct with regard to waste production and management.

Through its involvement, the WHO could help giving the global waste issue a higher priority on the political agenda of the international community, shifting the focus from environmental protection and waste as a commodity to the threat to human health. Furthermore, through its regional and national offices, the WHO has a large network in place that would enable it to maintain close (working) relations with the local population, partners and policymakers.[110] Such a local network could be particularly valuable in addressing a predominantly locally regulated matter like waste.

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[105] UNEP, 'Bali Declaration on Waste Management for Human Health and Livelihood' (2008) <http://www.basel.int/Portals/4/Basel%20Convention/docs/meetings/cop/cop9/bali-declaration/BaliDeclaration.pdf> paras 5 and 11.

[106] UNEP Governing Council/Global Ministerial Environment Forum 'Proceedings of the Governing Council/Global Ministerial Environment Forum at Its Twenty-Fifth Session' UN Doc UNEP/GC.25/17 (26 February 2009) Decision no. 25/8.

[107] WHA 'Improvement of Health through Safe and Environmentally Sound Waste Management' UN Doc WHA63.25 (21 May 2010).

[108] WHA 'Progress Reports: Report by the Secretariat' UN Doc A64/26 (21 April 2011) paras 33–43.

[109] Health care waste is refuse that is generated in health care establishments or health research facilities such as hospitals, doctor's offices, nursing homes and laboratories. According to the WHO, 85 percent of health care waste is non-hazardous waste comparable to domestic waste, but 15 percent is considered hazardous material that may be infectious, chemical or radioactive; WHO, 'Health-care Waste' <https://www.who.int/news-room/fact-sheets/detail/health-care-waste>.

[110] Behrendt (n 38) 53.

### 4.2.2 By virtue of the International Health Regulations (2005)

Could the WHO Director-General also declare that the global waste problem constitutes a PHEIC, as he did for COVID-19 on 30 January 2020? The declaration of a PHEIC would certainly bring attention to the global waste problem and put pressure on the international community to decide on a coordinated and effective international response to combat it.

The question will be examined by applying the decision instrument in Annex 2 of the IHR (2005) to two possible scenarios: In the first scenario, a flood is caused by heavy rainfalls in combination with drains blocked by waste. In the aftermath of the flood, vectors multiply in the open dumps and drains blocked by waste, leading to a massive cholera-outbreak.[111] In the second scenario, uncontrolled dumps of hazardous wastes and chemicals contaminate the groundwater and the surface, causing diseases and allergies in affected settlements.[112]

For either of these two scenarios to be classified as PHEIC under Annex 2 of the IHR (2005), (i) the public health impact of the event has to be serious, (ii) the event has to be unusual or unexpected, (iii) there has to be a significant risk of international spread or (iv) there must be a significant risk of international travel or trade restrictions. At least two of these four criteria must be met.

Both scenarios would certainly be capable of having serious public health implications through numerous cases of disease and death or contamination of a large geographical area. Both scenarios do not constitute an event that is unusual or unexpected. Thus, both scenarios would additionally have to involve either a significant risk of international spread or of international travel or trade restrictions to be classified as PHEIC. However, this is unlikely to be the case in either scenario, as they are more likely to occur locally – in the area surrounding the dumpsite in question – in a district or a particular city and will rarely be transboundary or international in nature. In the second scenario, if the contaminated water or surface spans two or more States, it could potentially be classified as a PHEIC by the WHO. For example, if there appears new evidence that plastic pollution has contaminated oceans and seas in a way that has serious public health implications, the transboundary criterion would certainly be met. Another possibility would be to prove that there is an epidemiological link to similar events in other States to conclude that there is a significant risk of international spread. For example, if several States or a large number of private actors were to report significant health problems or even deaths caused by open, uncontrolled dumpsites to the WHO, this could probably put enough pressure on the WHO to declare a PHEIC.

This thought experiment shows that unregulated and uncontrolled waste disposal is unlikely to meet all the conditions required in Annex 2 of the IHR (2005) to be classified as a PHEIC, with Annex 2 being tailor-made for infectious diseases. Especially in view of the restrictive practice of the WHO to declare a PHEIC, it can be assumed that the health threat posed by waste not only has to be of transboundary nature, but also be very serious for the WHO to be compelled to declare a PHEIC.

In addition, there has to be enough scientific evidence, that serious medical conditions are caused by wastes. This constitutes a criterion difficult to meet, especially for conditions that might only appear in the long term. For example, the ingestion of microplastics over many years has not yet been studied to that extent. Thus, microplastic that is ubiquitous in the environment and would certainly meet the transboundary criteria, could not be declared as a PHEIC, because there are currently not enough conclusive studies which prove that microplastic seriously harms human health. The application of the IHR (2005) to issues of waste is therefore unlikely.

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[111] This was the case, for instance, in Surat (India) in 1994 or Accra (Ghana) in 2011; UNEP (n 75) 3–4.

[112] Such a situation occurred, for example, in the neighbourhood 'Love Canal' in the city Niagara Falls in the late 1970s (UNEP (n 75) 5). Today, this scenario is particularly suitable for e-waste dumpsites such as those in Agbogbloshie, a district of Accra (Ghana).

## 5 THE WORLD HEALTH ORGANIZATION AS ACTOR IN INTERNATIONAL ENVIRONMENTAL LAW

The illustrative example of the global waste challenge showed that the WHO would have, by virtue of its Constitution, a wide spectrum of possibilities to act on environmental problems in line with the 'One Health' approach. Although the WHO is increasingly concerned with the health risks posed, for example, by e-waste and microplastics,[113] these competences are, at present, far from being fully exploited with regard to waste. The IHR (2005) are another promising instrument of the WHO to bring a public health emergency to public attention. However, the analysis showed that the IHR (2005) are hardly applicable to environmental problems, either because their adverse effects often only arise locally or because conclusive scientific evidence of their effects on human health is lacking or still outstanding. In this final part, the article examines to what extent the WHO has so far made use of its competences with regard to environmental issues in general to then conclude on the potential of the WHO as actor in international environmental law.

The WHO estimated in 2006 that globally 24 percent of the burden of disease and 23 percent of all deaths can be attributed to environmental factors.[114] Thus, around 13 million deaths per year could be prevented by a healthier environment.[115] Therefore, the WHO recognizes that an environmental commitment is key to improving human health worldwide and preventing a large number of diseases and deaths. In the WHO's 13th general programme of work, the seventh health outcome is defined as 'health impacts of climate change, environmental risks and other determinants of health addressed' and the WHO states:[116]

> With respect to air pollution (i.e. outdoor, household and workplace air pollution) and climate change mitigation, WHO will scale up its work with different sectors – including transport, energy, housing, waste, labour and urban planning – at the national and local level to monitor air quality, develop strategies for transitioning to healthier technologies and fuels and for ensuring that all populations breathe air that meets the standards of WHO's air quality guidelines, and that scientific evidence will be translated into effective policies.

Indeed, the WHO has significantly increased its activities concerning environmental threats to human health in the last two decades. It has established a 'Department of Public Health, Environmental and Social Determinants of Health', later renamed to 'Department of Environment, Climate Change and Health' (ECH). The ECH pursues a 'healthier environment by strengthening health sector leadership, building mechanisms for political and social support and monitoring progress towards the Sustainable Development Goals regarding environmental threats to health'.[117] Key areas of the ECH are air quality, chemical safety, climate change and water sanitation.[118]

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[113] See, e.g., WHO (n 81); and WHO (n 77).

[114] A Prüss-Üstün and C Corvalán C, 'Preventing Disease through Healthy Environments: Towards an Estimate of the Environmental Burden of Disease' (WHO 2006) 9.

[115] WHO, 'WHO Global Strategy on Health, Environment and Climate Change' (2020) <https://www.who.int/publications/i/item/9789240000377>.

[116] WHO 'The Thirteenth General Programme of Work 2019–2023' UN Doc WHO/PRP/18.1 (25 May 2018) 32 and 50.

[117] WHO, 'About us' <https://www.who.int/teams/environment-climate-change-and-health/about>.

[118] WHO, 'Environment, Climate Change and Health' <https://www.who.int/teams/environment-climate-change-and-health>.

Moreover, the WHO has drafted a new 'global strategy on health, environment and climate change', which received broad support at the 72nd World Health Assembly in May 2019.[119] The new strategy advocates a cross-sectoral approach to address the challenges in health, environment and climate change and wants the health sector to take a leading role in this effort.[120] The strategy addresses environmental agreements, such as the Paris Agreement and the Basel Convention, and points out that they do not always adequately include consideration of health threats and health concerns. That is why a stronger engagement of the health sector is important to promote synergies and minimize unintended negative consequences between health, environmental and economic objectives. Similarly, the implementation of the IHR (2005) would augment capacities to respond appropriately to environmental emergencies.[121] In addition, it is crucial to support research activities to fill knowledge gaps about emerging threats to health such as microplastics or e-waste, the strategy states.[122]

In line with this cross-sectoral approach, the WHO sought collaboration and concluded Memorandums of Understanding (MOUs) with various partner organizations in recent years. The WHO is, for example, the administering organizations of the Inter-Organization Programme for the Sound Management of Chemicals (IOMC) that was established by a MOU in 1995 and has become a critical actor in the Strategic Approach to International Chemicals Management (SAICM), which is a policy framework that was adopted in 2006 to minimize the significant adverse impacts of chemicals on human health and the environment.[123] Together with UNEP the WHO has launched the 'Health and Environment Linkages Initiative' to support policymakers in developing countries in taking action to reduce environmental threats to human health.[124] In 2017, the WHO and the UN Climate Change Secretariat (UNFCCC) signed a new MOU 'to renew the two institutions' joint commitment to tackle public health challenges emerging from rising temperatures and to help countries boost the efficiency of their response to climate change'.[125] On 30 May 2018, the WHO, the Food and Agriculture Organization (FAO) and the World Organisation for Animal Health (OIE) signed a MOU 'to step up joint action to combat health threats associated with interactions between humans, animals and the environment' and 'with a strong focus on tackling antimicrobial resistance'.[126] The MOU embraces the 'One Health' approach, which is broadly defined by the WHO as 'an approach to designing and implementing programmes, policies, legislation and research in which multiple sectors communicate and work together to achieve better public health outcomes'.[127] The WHO also collaborates strongly with the CBD based on a MOU signed in July 2015. They established a Joint Work Programme on Biodiversity and Health and an Interagency Liaison Group on Biodiversity and Health, with the aim to strengthen knowledge and cooperation on the

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[119] 'WHO Global Strategy on Health, Environment and Climate Change' <https://www.who.int/phe/publications/global-strategy/en/>.

[120] WHO 'Health, Environment and Climate Change, Draft WHO Global Strategy on Health, Environment and Climate Change: The Transformation Needed to Improve Lives and Well-being Sustainably through Healthy Environments' WHA72/15 (18 April 2019) 4 and 7.

[121] ibid 13.

[122] ibid 9–10.

[123] See WHO, 'Strategic Approach to International Chemicals Management (SAICM): Health Sector Focus' <https://www.who.int/ipcs/saicm/saicm/en/>; WHO, 'About IOCM' <https://partnership.who.int/iomc/about-us>.

[124] WHO, 'What is HELI?' <https://www.who.int/heli/aboutus/en/>.

[125] WHO, 'UN Climate Change and WHO Team Up to Protect Health from Climate Change at COP23' (12 November 2017) <https://www.who.int/news/item/12-11-2017-un-climate-change-and-who-team-up-to-protect-health-from-climate-change-at-COP23>.

[126] WHO, 'International Partnership to Address Human-Animal-Environment Health Risks Gets a Boost' (30 May 2018) <https://www.who.int/news/item/30-05-2018-international-partnership-to-address-human-animal-environment-health-risks-gets-a-boost>.

[127] WHO, 'One Health' <https://www.who.int/news-room/q-a-detail/one-health>.

interlinkages between biodiversity and human health.[128] In 2017, the WHO and the CBD developed, for example, a guidance on integrating biodiversity considerations into 'One Health' approaches.[129]

Building upon the work carried out by the Interagency Liaison Group on Biodiversity and Health, the WHO established together with the International Union for the Conservation of Nature and the Friends of Ecosystem-based Adaptation network in March 2021 a new Expert Working Group on Biodiversity, Climate, One Health and Nature-based Solutions. The Expert Working Group aims to develop guidance and tools 'to support the operationalization of One Health approaches and Nature-based Solutions by: (1) identifying co-benefits and trade-offs for human and ecosystem health, (2) strengthening social and ecological resilience and (3) supporting a healthy, green and just recovery from COVID-19'.[130] Furthermore, in May 2021, a new 'One Health' High-Level Expert Panel was launched by the WHO, UNEP, FAO and OIE to improve understanding of how diseases with the potential to trigger pandemics emerge and spread. The Panel will advise these four organizations on the development of a long-term global plan of action to avert outbreaks of diseases like H5N1 avian influenza, Ebola, Zika, and, possibly, COVID-19.[131] Hence, the WHO seems to use the ongoing COVID-19 pandemic already to come together with partner organizations and enhance the 'One Health' approach.

## 6 CONCLUSION

The young environmental activist Greta Thunberg said at a demonstration in Rome on 19 April 2019: 'Humanity is standing at a crossroads. We must now decide which path to take. How do we want the future living conditions for all living species to be like?' The conclusions of the recently published first part of the Intergovernmental Panel on Climate Change's Sixth Assessment Report[132] and the ongoing COVID-19 pandemic make this urgency to act even more apparent. Scientists have warned for decades that biodiversity loss through deforestation and extinctions increases the risk of disease pandemics such as COVID-19.[133] Now, their warnings receive growing attention.

Given that the environment and human health are so closely connected, as also advocated by the 'One Health' approach, it would appear natural that the WHO must address environmental issues as well. Of course, the question can be asked why the WHO should also engage in international environmental law in addition to the numerous actors already active with regard to environmental issues. UNEP in particular has much greater expertise on environmental issues and is closely linked to the national environmental ministries that implement environmental regulations. But as the example of waste has shown, environmental problems often have important health implications that play a role as well, so it would be crucial for the health sector and the WHO as a technical organization to get more involved. In the

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[128] WHO, 'Biodiversity and Health: The WHO-CBD Joint Work Programme' (1 January 2020) <https://www.who.int/news/item/01-01-2020-biodiversity-and-health-the-who-cbd-joint-work-programme>.

[129] WHO and UNEP 'Guidance on Integrating Biodiversity Considerations into One Health Approaches' UN Doc CBD/SBSTTA/21/9 (13 December 2017).

[130] WHO, 'New WHO-IUCN Expert Working Group on Biodiversity, Climate, One Health and Nature-Based Solutions' (30 March 2021) <https://www.who.int/news/item/30-03-2021-who-iucn-expert-working-group-biodiversity>.

[131] WHO, 'New International Expert Panel to Address the Emergence and Spread of Zoonotic Diseases' (20 May 2021) <https://www.who.int/news/item/20-05-2021-new-international-expert-panel-to-address-the-emergence-and-spread-of-zoonotic-diseases>.

[132] Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (IPCC 2021).

[133] J Tollefson, 'Why Deforestation and Extinctions Make Pandemics More Likely' (2020) 584 Nature 175.

European Union, for example, waste disposal is not only considered a classic aspect of environmental protection but also of health protection.[134]

The WHO's commitment concerning environmental problems has so far mainly included the cooperation with partners through the conclusion of MOUs, the launch of intersectoral expert groups, the drafting of reports and the formulation of non-binding guidelines and strategies. However, as analysed above, especially its Constitution would grant the WHO even broader competences and further possibilities to act. For instance, the WHO could adopt new conventions and agreements or convene conferences on environmental issues affecting human health. Thus, the WHO could be bolder in the use of its competences with regard to environmental problems, such as climate change or biodiversity loss.

Advocates of the 'One Health' approach wrote in 2019:[135]

> The Ebola epidemic of 2014 would have been a perfect time to use politics to incorporate a One Health approach for more effective management of emerging wildlife and human health issues. The Ebola crisis offered an opportunity to raise awareness about the ways humans and wildlife share changing ecosystems.

COVID-19 offers a new opportunity to act and to incorporate the 'One Health' approach. Although the launch of new 'One Health' high-level expert panels and expert working groups by the WHO is laudable, the 'One Health' approach must infiltrate all levels and sectors of our societies to cause profound change. It is high time that not only experts, but also governments, corporations and civil society comprehend that the health of people is closely connected to the health of animals and our shared environment. Because time and again, direct economic concerns have been shown to outweigh worries about the impacts of environmental issues, as recently shown in a Swiss referendum on a law to cut greenhouse gases using a combination of more renewables and taxes on fossil fuels.[136]

The WHO could take a leading role in changing this and unblocking governments' reluctance to make new environmental commitments by emphasising the serious negative health impacts of different environmental issues. The WHO could, for example, adopt a new legally binding or non-binding instrument that promotes the application of the 'One Health' approach in all decision-making processes concerning the environment, animal and human health. It could launch a global campaign, in collaboration with UNEP, to raise awareness among all societies that human health is seriously endangered by environmental degradation. Or it could use the ongoing COVID-19 pandemic as a catalyst to revise the IHR (2005) so that they can be better applied to environmental hazards that seriously harm human health. By collaborating with other organization, the WHO could help overcome the fragmented nature of international environmental law by elaborating together more comprehensive regulations on environmental issues that do not contradict themselves and have the ultimate goal of optimal health for people, animals and the environment alike. In this sense, this article ought to be food for thought to think beyond the boundaries of different sectors and accentuate the nexus between human health and the environment. Because at the crossroads where we stand today, bold political ideas and initiatives are needed more than ever to give international environmental law new momentum.

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[134] K Messerschmidt, *Europäisches Umweltrecht: Ein Studienbuch* (CH Beck 2011) 841; C-387/97, *Commission v Greece*, ECLI:EU:C:2000:356 para 94.

[135] Deem et al (n 9) 217.

[136] The law had a broad approval by the parliament and government, but the majority of the population rejected it on 13 June 2021, mainly due to economic concerns that were raised in the run-up to the vote.

**Rahel Zimmermann** is a young researcher and doctoral student at the University of Geneva (Department of Public International Law and International Organization), where she is currently writing her thesis in international environmental law. Alongside her doctorate, she works in the legal department of an environmental management consultancy.

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