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ARTICLE

World Pandemic Control in International Law: Through a Transboundary Harm Perspective

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Abstract

The current pandemic response system under the International Health Regulations has been considered unsatisfactory in controlling world pandemic outbreaks. Opinions are voiced that a legal evolution incorporating other sources of international law is imperative to meet the system's primary deficiency: the uneven degree of State compliance with the 'core capacity' requirements. Against this background, this paper aims to examine the potential application of transboundary harm rules in world pandemic prevention, where existing treaty obligations are insufficient or ineffective in addressing future obstacles. By comparing their conceptual characters and legal elements, this paper seeks to reveal the inherent link between the two domains, which may further demonstrate an existing manifestation of transboundary harm rules as emerging customary international law in current pandemic prevention practice. Based on the structure of transboundary harm rules, this paper aims to provide an innovative legal framework that justifies the differentiated standards among States with uneven capacity and underlines the obligation of cooperation. Such a framework is designed to improve the level of States' prevention and response towards future global health emergencies raised by world pandemics. Moreover, it hopes to provide practical ideas for formulating the new international instrument on pandemic prevention, which is currently being drafted by the Member States of the World Health Organization.

Keywords World pandemic · Transboundary harm · Principle of prevention · International Health Regulations · Public health emergency of international concern · Due diligence

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1 Introduction

Since the outbreak of COVID-19 in early 2020, the impact of global pandemics has once again been brought to light.[1] In addition to the renewed recognition of the devastation that viruses can wreak on human societies throughout history, COVID-19 is exceptional in its tremendous range of infection through global diffusion.[2] With the emergence and gradual development of a global regime of health security,[3] preventing and controlling disease outbreaks became an indispensable part of global health governance.[4]

With the absence of identified customs or general principles of law, States' actions in response to world pandemic control have so far been predominantly regulated under treaty obligations[5] from the International Health Regulations (2005) (IHR).[6] States Parties to the IHR are required to develop, strengthen, and maintain the 'core capacity' for surveillance and take specific actions in response to a 'public health emergency of international concern' (PHEIC).[7] In detail, States must ensure that their national structures and resources against PHEICs meet the minimum requirements described in the IHR and are 'present and functioning throughout their territories'.[8] Once an event with the risk of constituting a PHEIC occurs within their territory, States shall assess the situation and notify the World Health Organization (WHO) within 24 hours.[9] If the WHO Director-General determines and declares such an occurrence,[10] States shall further act in accordance with their IHR obligations.[11]

However, this current international system of pandemic control has demonstrated a rather unsatisfactory performance in guiding the States' reaction against the recent outbreaks of Ebola and COVID-19,[12] the primary reason being the uneven degree of States' compliance with the 'core capacity-building' requirements.[13] Namely, despite the IHR being a binding international agreement,[14] different levels of State development have led to an inevitable consequence of various degrees of fulfilment and implementation.[15] As a matter of fact, the vast majority of States Parties to the

[1] Heath (2021), p. 585.

[2] Coco and Dias (2021), p. 218.

[3] Sinclair (2017), p. 3.

[4] Heath (2021), p. 589.

[5] Murase (2021) (IDI 12th Commission Report on Epidemics), pp. 49 and 60.

[6] International Health Regulations, 15 June 2007, 2509 UNTS 79, Annex 1.

[7] Ibid., Art. 1, Annex 1.

[8] Ibid., Arts. 5 and 13, Annex 1.

[9] Ibid., Art. 6.

[10] Ibid., Art. 12.

[11] Ibid., Art. 1, Annex 1.

[12] Bartolini (2021), p. 241.

[13] Heath (2021), p. 592; Tsai and Turbat (2020), p. 10.

[14] World Health Assembly, Revision of the International Health Regulations, 23 May 2005, WHA58.3, Preamble.

[15] Davies, Kamradt-Scott and Rushton (2015), p. 69; Kamradt-Scott and Rushton (2012), p. 64.

IHR (66%) had failed to achieve a demonstrated or sustainable capacity as of 2019 due to low or moderate levels of national preparedness.[16] Consequently, States' unequal financial and technical capacities in establishing necessary infrastructures have impeded the process of disease control and facilitated its international spread,[17] posing a continual risk to global health.[18] In addition to the capacity imbalance between developed and developing States, certain States with sufficient capacity also failed to adequately respond to the pandemic with the full use of their domestic health resources, resulting in the inefficient implementation of treaty obligations. As such, it has been argued that safeguards against world pandemics remain insufficient, and a more advanced legal framework incorporating comprehensive rules of international law is required to prevent significant impacts on global health.[19] As a matter of fact, WHO Member States are currently drafting and negotiating a new international instrument specifically aiming to strengthen pandemic prevention, preparedness, and response.[20] Taking into account the relevant existing international legal obligations, the new complementing instrument, coherent with the IHR, seeks to foster collaboration among States in better preventing future disease outbreaks,[21] setting the core objective as 'the need to ensure equity in both access to the tools needed to prevent pandemics and access to health care for all people'.[22]

Among the relevant rules of international law, the application of rules governing transboundary environmental harm prevention appears to be highly compatible, given the world pandemics' characteristics of cross-border transmission and the requirements of preventing a severe potential impact on human life.[23] In order to assess the applicability of transboundary harm rules to world pandemic prevention and the benefits of doing so, this paper will be structured as follows. Section 2 will first provide analogies between traditional transboundary environmental harm and pandemic diffusion. Further, Sect. 3 seeks to examine whether and how

[16] WHO, Thematic Paper on the Status of Country Preparedness Capacities, 25 September 2019, pp. 11, 13 and 14.

[17] Gostin and Friedman (2015), p. 1904.

[18] Burci and Eccleston-Turner (2020), p. 263.

[19] IDI 12th Commission Report on Epidemics (n. 5), pp. 43 and 56; Eccleston-Turner and Wenham (2021), p. 124.

[20] WHO, Pandemic prevention, preparedness and response accord, 28 June 2023, https://www.who.int/news-room/questions-and-answers/item/pandemic-prevention--preparedness-and-response-accord (accessed 4 October 2023) (WHO Pandemic Accord). The Q&A explained: 'Member States of the World Health Organization have agreed to a global process to draft and negotiate a convention, agreement or other international instrument under the Constitution of the World Health Organization' and 'Member States will decide the terms of the accord, including whether any of its provisions will be legally binding on Member States as a matter of international law'.

[21] WHO, Working draft, presented on the basis of progress achieved, for the consideration of the Intergovernmental Negotiating Body at its second meeting, 13 July 2022 (Second Meeting of the Intergovernmental Negotiating Body to Draft and Negotiate a WHO Convention, Agreement or other International Instrument on Pandemic Prevention, Preparedness and Response), A/INB/2/3 (WHO INB First Working Draft), p. 5.

[22] WHO Pandemic Accord (n. 20).

[23] Villarreal (2020), pp. 157, 164 and 171; IDI 12th Commission Report on Epidemics (n. 5), pp. 62, 66 and 75.

transboundary harm rules already exist in world pandemic law. Specifically, it argues that the principle of prevention and specific procedural obligations are enshrined in the IHR framework in the form of treaty obligations. Subsequently, Sect. 4 seeks to explore transboundary harm rules' legal status as emerging customary international law in the context of pandemic prevention. Lastly, Sect. 5 will examine the compatibility and advantage of transboundary harm rules for providing methods for pandemic prevention's evolution from a normative perspective. This will include a detailed discussion on the correlation between the principle of prevention, prevention obligations, and the principle of due diligence. Such analysis seeks to provide a legal framework based on transboundary harm rules to respond to States' uneven capacity in pandemic prevention, thereby facilitating an effective reaction to future global health emergencies raised by cross-border pandemic transmission.[24]

2 Conceptual and Legal Analogies Between Transboundary Harm and PHEIC

This section will compare concepts and legal elements in order to reveal similarities between the requirements of State response in the legal order of world pandemics and traditional transboundary environmental harm prevention.[25] This constitutes the theoretical basis for examining the applicability of transboundary harm rules in the field of world pandemics in the latter part of the paper.

2.1 Conceptual Characteristics

Transboundary harm has often been described as damage 'caused by or originating in one State, and affecting the territory of another'.[26] So far, this norm has only been judicially and explicitly applied to environmental damage by the International Court of Justice (ICJ) in cases concerning shared water resources and air pollution.[27] However, it needs to be stressed that no existing rules of international law have clarified the scope of the norm nor unequivocally limited its application to the environment.[28] On the contrary, it is noted by the International Law Commission (ILC) that forms

[24] ILC, Protection of Persons in the Event of Disasters. In: Report of the International Law Commission on the Work of its 68th Session, 2 May-10 June and 4 July-12 August 2016, UN Doc. A/71/10, pp. 12 and 48.

[25] IDI 12th Commission Report on Epidemics (n. 5), p. 75.

[26] Xue (2003), p. 1.

[27] *Pulp Mills on the River Uruguay (Argentina v. Uruguay)*, Judgment, ICJ Reports 2021, p. 14; *Certain activities carried out by Nicaragua in the border area (Costa Rica v. Nicaragua)* and *Construction of a Road in Costa Rica along the San Juan River (Nicaragua v. Costa Rica)*, Judgment, ICJ Reports 2015, p. 665; *Certain Activities Carried out by Nicaragua in the Border Area (Costa Rica v. Nicaragua), Compensation Owed by the Republic of Nicaragua to the Republic of Costa Rica*, Judgment, ICJ Reports 2018, p. 15.

[28] *Certain Activities and Compensation case* (n. 27), para. 52; Xue (2003), p. 40.

of transboundary harm cannot be fully listed or forecasted[29] as they 'become quickly dated from time to time in the light of fast evolving technology'.[30] Specifically, the subjects of 'harm' comprise not only the environment, but also social factors such as human health, property, the economy, and living conditions.[31] Furthermore, the ILC notes that transboundary harm can be caused 'whether or not the States concerned share a common border',[32] namely, being territorially neighbouring is not strictly required between the acting and injured States.[33] Therefore, as transboundary harm has shown its potential to be applied more on a case- and context-specific basis,[34] scholars have been exploring its compatibility in various legal aspects, including world pandemics.[35]

Based on these conceptual descriptions, the detrimental impact of a pandemic outbreak in one State caused by the transmission of virus strains from another can be compared with traditional transboundary environmental harm.[36] Although it is well recognized that pandemics are a common concern for both the international community and humankind,[37] the broader range of global infections does not contradict their transboundary nature. Presuming that the term 'transboundary' can be examined more abstractly, issues with a transboundary character might be interpreted as those containing a spontaneously mobile subject that can potentially bring or cause detrimental effects from one State to another. In this context, a mobile subject could be any kind of flowing medium resembling watercourses or air: for example, cross-border population movements and cargo transportation, by which viruses are originally diffused.[38] Such transmission methods can be considered to have demonstrated the virus' propensity to traverse borders at will,[39] causing potential harm by bringing economic, health, and social burdens to the receiving States.[40]

However, this innovative interpretation could be seen as controversial for the transmitting medium being humans.[41] Therefore, one should clarify that this paper does not seek to equate sick people with polluted water, since the misclassification

[29] ILC, Draft Articles on Prevention of Transboundary Harm from Hazardous Activities, with commentaries (ILC Prevention of Transboundary Harm), ILC Yearbook 2001, Vol. II, p. 148, at p. 153, Art. 2 (commentary, 4th para.).

[30] Ibid., p. 149, Art. 1 (commentary, 4th para.).

[31] Ibid., Art. 2(b), p. 153, Art. 2 (commentary, 4th para.).

[32] Ibid., Art. 2(c).

[33] Liu (2017), pp. 207 and 227; Mayer (2016), p. 90.

[34] Worster (2014), p. 465.

[35] Capicchiano (2021), p. 372.

[36] Murase (2022), p. 200; Cocchini and Puig (2022), p. 9; IDI 12th Commission Report on Epidemics (n. 5), pp. 62, 66 and 75.

[37] IDI 12th Commission Report on Epidemics (n. 5), p. 56; United Nations General Assembly (UNGA), Global Solidarity to Fight the Coronavirus Disease 2019 (COVID-19), UN Doc. A/RES/74/270, 2 April 2020.

[38] International Health Regulations (n. 6), Arts. 30–34.

[39] Danchin et al. (2020), p. 600; Jasanoff and Hilgartner (2022), p. 292.

[40] Peavey-Joanis (2006), p. 255.

[41] Ibid.; Banda (2019), p. 1879.

of humans as harm is 'neither legally sound, nor ethically just'.[42] The equation of world pandemics with transboundary harm aims more at discussing whether and how States can better fulfil their obligations to prevent a pandemic outbreak under the relevant legal framework.[43]

2.2 Legal Elements

Transboundary harm rules require States to use all the means at their disposal to prevent or mitigate the risk of significant harm, caused by activities in their territory, to the environment of another State.[44] These rules consist of the principle of prevention and prevention obligations. The principle serves as a guiding norm driving the entire structure[45] and can create different prevention obligations for states depending on different contexts.[46] The performance of such obligations would ensure that certain outcomes are achieved or prevented, and conversely, their non-fulfilment might lead to internationally wrongful acts, thus triggering State responsibility and reparation.[47] After several years of recognition as 'part of the corpus of international law relating to the environment',[48] the principle of prevention was identified by the ICJ as a rule of customary international law in the traditional environmental dimension.[49] As can be seen from their composition, the legal practice of transboundary harm rules focuses on three core elements: the risk of harm, the threshold of significance, and prevention obligations.[50] The first two elements form a trigger of States' requirement to carry out certain acts to avoid detrimental results to other States' territory, and the third element indicates specific actions that States shall perform.

A similar case exists in the pandemic prevention context. As mentioned earlier, States Parties to the IHR must act accordingly in response to a PHEIC,[51] which is currently considered to be the existing operational term and the trigger for the pandemic response.[52] As prescribed in Article 1 of the IHR, PHEIC means 'an *extraordinary event* that constitutes a *public health risk* to other States through the international spread of disease and potentially requires a *coordinated international response*'.[53] From the perspective of terminology, the constituents of this rule, to a great extent, resemble the three core elements on which the application of

[42] Capicchiano (2021), p. 379.

[43] Peavey-Joanis (2006), p. 266.

[44] *Legality of the Threat or Use of Nuclear Weapons*, Advisory Opinion, ICJ Reports 1996, p. 226, para. 29; *Pulp Mills* (n. 27), paras. 101, 104, 113, 115, 120, 145, 204, 205, 206 and 275; *San Juan River* (n. 27), para. 104.

[45] *Pulp Mills* (n. 27), para. 101.

[46] *Nuclear Tests Cases (Australia v. France)*, Judgment, ICJ Reports 1974, p. 253, para. 46.

[47] *Pulp Mills* (n. 27), paras. 102, 120, 204, 205, 206; Xue (2003), p. 169.

[48] *Nuclear Weapons Advisory Opinion* (n. 44), para. 29.

[49] *Pulp Mills* (n. 27), para. 101.

[50] *Pulp Mills* (n. 27); *San Juan River* (n. 27).

[51] International Health Regulations (n. 6), Art. 1, Annex 1.

[52] Villarreal (2020), p. 156; Bartolini (2021), p. 235.

[53] International Health Regulations (n. 6), Art. 1. Emphasis added.

transboundary harm rules is based.Concerning the scope of application, a 'public health risk' and an 'extraordinary event' in the PHEIC situation respectively correspond to the risk of harm and the threshold of significance in the context of the environment. Concerning the action required, 'a coordinated international response' can include various forms of measures, such as notification and cooperation, which are also typical obligations in environmental law. These regulations indicate that the IHR likewise takes the timing of action and the magnitude of the potential harm into account when imposing specific obligations of preventing the international spread of diseases.[54] More importantly, the inherent dilemma of States' uneven capacity and degree of completion in meeting the requirements, which is hidden under the seemingly uniform regulations, might echo the requirement of differentiated treatment enshrined in the principle of prevention. This will be further elaborated upon in detail in Sect. 4 of this paper.

On briefly explaining the resemblance between traditional transboundary harm and world pandemic prevention, the following section seeks to assess the inherent links between the two domains.

3 Transboundary Harm Rules Enshrined in the PHEIC Response System

As mentioned earlier, States Parties to the IHR must be able to 'detect, assess, notify and report' events that may constitute a PHEIC within their territory in order to meet the pandemic response demand.[55] Such a requirement of *ex-ante* capacity-building, as an issue of legitimate international concern,[56] ensures the effective prevention of pandemic outbreaks or the restraint of continuing transmission into a broader range of infections.[57] This reveals a potential manifestation of the principle of prevention as well as prevention obligations enshrined in the existing PHEIC system.

3.1 The Manifestation of the Principle of Prevention

As introduced in Sect. 2.2, the principle of prevention serves as a guiding norm driving the entire structure of transboundary harm rules. Although the principle has so far only been identified as a customary rule in the context of environmental law,[58] its practical value and legal status in areas beyond the environment is worth examining. The attempt at its expansive application into other aspects of international law

[54] Ibid., Foreword.

[55] Ibid., Arts. 5 and 13, Annex 1.

[56] Eccleston-Turner and Wenham (2021), p. 45.

[57] International Health Regulations (n. 6), Art. 2.

[58] *Pulp Mills* (n. 27), para. 101.

is neither novel nor groundless,[59] and its pertinence for regulating certain preventive obligations can also be demonstrated through existing legal practice.[60]

The ILC has sought to prove the existence of the preventive rationale in international disaster law by drawing an analogy with international environmental law, and found its argument plausible by observing that the law had shifted from 'a primarily response-centric model' to 'one focused largely on prevention and preparedness'.[61] More specifically, it is considered that the essence of transboundary harm rules in the environmental context has shifted from balancing neighbourly relations and the use of shared resources, into risk management and prevention obligations owed to one or more States,[62] as the damage to natural resources and the environment can sometimes be irreversible.[63]

A similar model exists in pandemic control under the IHR: in order to prevent or reduce the spread of pandemics to others, States must 'utilize existing national structures and resources to meet their core capacity requirements' for PHEIC surveillance and response in their own territory.[64] Although a considerable amount of research has focused on States' *ex-post* action of responding after an actual outbreak,[65] the essence of obligations regulated under the IHR nevertheless lies in the fundamental national health preparation, which is guaranteed by States' *ex-ante* capacity-building on pandemic prevention. To meet such requirements, States will need to balance their absolute sovereign rights (such as legislating and implementing legislation[66]) with the right to health of people in other States,[67] since the preventive actions might need to be performed in a way that derogates from the former.[68] Therefore, the manifestation of the principle of prevention in the pandemic context can be seen as an 'operational concept' that drives States to adopt relevant implementing measures.[69] Although the principle of prevention currently appears in the form of treaty

[59] Duvic-Paoli (2018), pp. 240–241; International Law Association Study Group on Due Diligence in International Law, Second Report (ILA Due Diligence Second Report), 12 July 2016.

[60] Duvic-Paoli (2018), p. 104.

[61] ILC, Eduardo Valencia-Ospina, Special Rapporteur, Fifth Report on the Protection of Persons in the Event of Disasters, A/CN.4/652, 2013, para. 114; ILC, Eduardo Valencia-Ospina, Special Rapporteur, Sixth Report on the Protection of Persons in the Event of Disasters, A/CN.4/662, 2013, paras. 54–59; ILC, Draft Articles on the Protection of Persons in the Event of Disasters, with commentaries, ILC Yearbook 2006, Vol. II, p. 24, at p. 41, Art. 9 (commentary, 4th para.); ILC Prevention of Transboundary Harm (n. 29), p. 153, Art. 2 (commentary, 4th para.).

[62] Banda (2019), p. 1897; Gupta and Schmeier (2020), p. 734.

[63] Xue (2003), pp. 251 and 288.

[64] International Health Regulations (n. 6), Annex 1.

[65] Trigt (2021).

[66] International Health Regulations (n. 6), Art. 3.

[67] Emmons (2022), p. 380.

[68] IDI 12th Commission Report on Epidemics (n. 5), pp. 57–58.

[69] ILC, Draft Articles on the Protection of Persons in the Event of Disasters, with commentaries, ILC Yearbook 2006, Vol. II, p. 24, at p. 44, Art. 9 (commentary, 15th para.); Duvic-Paoli (2018), p. 107.

obligations under the IHR regime,[70] it is worth examining whether the customary character of such a principle can be crystalized in the context of world pandemics.[71]

3.2 The Manifestation of Prevention Obligations

As the other part of transboundary harm rules, prevention obligations contain particular requirements of State action in different contexts.[72] Under the traditional environmental dimension, practices have mainly included obligations of prior notification and consultation, the exchange of information, negotiation, cooperation, and undertaking an environmental impact assessment (EIA),[73] most of which are considered to be requirements under general international law.[74]

Looking at the content of the IHR, obligations concerning pandemic prevention demonstrate a high degree of resemblance for analogous purposes.[75] As noted in the IHR, States Parties shall assess all events occurring within their territory that carry a risk of constituting a PHEIC and shall notify the WHO within 24 hours of assessing public health information.[76] When information that is available for an event is not yet sufficient to declare the existence of a PHEIC, the States Parties shall nonetheless fulfil the obligations of information-sharing[77] and consultation.[78] Moreover, States Parties shall collaborate and assist each other to the greatest extent in but not limited to issues concerning techniques, logistics, the mobilization of financial resources, and the formulation of proposed laws.[79] Therefore, traditional forms of prevention obligations under the transboundary environmental harm context can be reflected in the IHR in the context of pandemics.

In practical aspects of the comparison in obligation implementation, the standards of acting in both the environment and the pandemic situations are 'highly "fact-intensive" and "science-dependent"', demonstrating the vital importance of reliable scientific evidence in prevention activities and the later stage of examining whether the breach of a specific obligation exists.[80]

[70] Nicoletti (2012), p. 185.

[71] Duvic-Paoli (2018), pp. 93–94.

[72] *Certain activities carried out by Nicaragua in the border area (Costa Rica v. Nicaragua)* and *Construction of a Road in Costa Rica along the San Juan River (Nicaragua v. Costa Rica)*, Separate Opinion of Judge Cançado Trindade, ICJ Reports 2015, p. 758, para. 57; Duvic-Paoli (2018), p. 206.

[73] *Nuclear Tests* (n. 46), para. 46; *Gabcikovo-Nagymaros Project (Hungary v. Slovakia)*, Judgment, ICJ Reports 1997, p. 7, paras. 68, 109 and 142; *Pulp Mills* (n. 27), paras. 104, 113, 120, 145, 205, 206 and 275; *San Juan River* (n. 27), para. 104.

[74] *Pulp Mills* (n. 27), para. 204; *San Juan River* (n. 27), para. 104.

[75] IDI 12th Commission Report on Epidemics (n. 5), p. 52.

[76] International Health Regulations (n. 6), Art. 6(1).

[77] Ibid., Art. 7.

[78] Ibid., Art. 8.

[79] Ibid., Art. 44.

[80] Grogan and Donald (2022), p. 285; IDI 12th Commission Report on Epidemics (n. 5), p. 131; Duvic-Paoli (2018), pp. 271–272.

As examined above, it can be reasonably argued that in the context of pandemic prevention, the expansive application of transboundary harm rules might already exist in the form of treaty obligations under the PHEIC framework. The following section will hence continue by examining their legal status in such context from the perspective of customary international law identification.

4 The Legal Status of Transboundary Harm Rules in Pandemic Prevention

Although transboundary harm rules have not yet been identified as customary international law beyond the environment, their legal status in the specific context of pandemics is open to examination. Seen from the relationship between these two sources of international law,[81] customary international law can be reflected in treaties and, vice versa, treaties can be interpreted in accordance with the rules of customary international law.[82] As IHR is the only globally-binding instrument governing pandemic prevention and outbreak reporting,[83] its adoption is considered to be a watershed in disease surveillance and response.[84] Therefore, the accumulation of State practice under the IHR, especially after the outbreak of COVID-19, might be an entry point for discussing whether transboundary harm rules have obtained or have the potential to be crystalized as a legal status of customary international law in the context of pandemic prevention.

4.1 Standard of the 'State Practice–*Opinio Juris*' Test

As noted in the ILC Draft Conclusions on Identification of Customary International Law with Commentaries (2018), the existence of a general practice accepted as law (*opinio juris*) in order to determine the customary nature of certain rules needs to be examined.[85] Therefore, the critical point of our discussion lies in whether there is a general practice of transboundary harm rules in pandemic prevention accepted as law.

Concerning the standard of general practice, the ILC provides an explanation of 'sufficiently widespread', 'representative' and 'consistent'.[86] Forms of State practice include but are not limited to legislative and administrative acts, executive conduct, and conduct in connection with the implementation of treaties and resolutions adopted by international organizations.[87] Notably, treaties of near-universal

[81] Statute of the International Court of Justice, 24 October 1945, 33 UNTS 993, Art. 38(a)(b).

[82] *Pulp Mills* (n. 27), paras. 121, 145.

[83] Burci (2020), p. 206.

[84] Negri (2018), p. 268.

[85] ILC, Draft Conclusions on Identification of Customary International Law with Commentaries (ILC Identification of Customary International Law), ILC Yearbook 2018, Vol. II, p. 122, at p. 124, Conclusion 2.

[86] Ibid., p. 135, Conclusion 8.

[87] Ibid., p. 133, Conclusion 6, 134 (commentary, 5th para.).

acceptance by attaining widespread participation may be considered particularly indicative in recording, defining, and reflecting rules of customary international law.[88] As of today, the IHR has entered into force in 196 States Parties, including the 194 WHO Member States.[89] States instigating and implementing national legislation following treaty obligations and further actions of pandemic control in response to WHO recommendations[90] have demonstrated a wide practice of prevention for identifying customary international law.[91] Taking COVID-19 as an example, measures such as quarantines, lockdowns, and international travel control have been recognized worldwide as essential for virus blocking.[92] These measures, which have obtained broad political consensus from State authorities and been supported by the majority of populations, are consistently applied to prevent a pandemic from transboundary diffusion.[93]

Concerning the standard of *opinio juris*, however, things can be more complicated as 'the practice in question must be undertaken with a sense of legal right or obligation'.[94] Forms of State practice include conduct in connection with resolutions adopted by an international organization and treaty provisions.[95] On the one hand, such resolutions may reflect the collective expression of States, namely, provide evidence of the emergence of an *opinio juris*.[96] For example, during the COVID-19 pandemic, two resolutions were adopted by the United Nations General Assembly concerning global solidarity to fight the disease as well as global access to medicines, vaccines, and medical equipment through international cooperation.[97] Although resolutions are adopted under the silence procedure[98] and cannot themselves serve as conclusive evidence of the existence of customary international law,[99] they may nonetheless reveal States' consensus on global cooperation

[88] Ibid., pp. 143–144, Conclusion 11 (commentary, 2nd and 3rd paras.).

[89] International Health Regulations (n. 6), Appendix 1.

[90] International Health Regulations (n. 6), Arts. 3 and 15; WHO, Considerations for implementing and adjusting public health and social measures in the context of COVID-19, 14 June 2021 (WHO Considerations for COVID-19 Measures).

[91] IDI 12th Commission Report on Epidemics (n. 5), p. 61.

[92] WHO Considerations for COVID-19 Measures (n. 90); Grogan and Beqiraj (2022), p. 201.

[93] Graver (2022), p. 216.

[94] ILC Identification of Customary International Law (n. 85), p. 138, Conclusion 9.

[95] Ibid., p. 140, Conclusion 10.

[96] Ibid., pp. 147–148, Conclusion 12 (commentary, 3rd and 5th paras.).

[97] UNGA, Global Solidarity to Fight the Coronavirus Disease 2019 (COVID-19), UN Doc. A/RES/74/270, 2 April 2020; UNGA, International Cooperation to Ensure Global Access to Medicines, Vaccines and Medical Equipment to Face COVID-19, UN Doc. A/RES/74/274, 20 April 2020.

[98] UNGA, Procedure for Taking Decisions of the General Assembly during the Coronavirus Disease (COVID-19) Pandemic, Decision 74/544, 27 March 2020.

[99] ILC Identification of Customary International Law (n. 85), p. 147, Conclusion 12 (commentary, 1st para.).

in preventing pandemics[100] and thus 'show the gradual evolution of the opinio juris required for the establishment of a new rule'.[101]

On the other hand, 'seeking to comply with a treaty obligation as a treaty obligation' does not, by itself, demonstrate an acceptance as law for the purpose of identifying customary international law.[102] That is to say, when considering States' legal acceptance of certain practices, how and with what intention they are carried out or interpreted can sometimes weigh more heavily than the actual action or text.[103] It might be assumed that by adopting the IHR, States have, to some extent, acknowledged the principle of prevention and prevention obligations enshrined in the existing PHEIC system.[104] However, relevant obligations include not only restrictions of a cross-border control nature, such as a quarantine and a travel ban, but also measures with a more domestic protective nature, such as mask-wearing and vaccination.[105] Although it is undeniable that a high level of domestic disease control is indispensable for global health governance,[106] it is hard to distinguish, at that very moment when States carry out specific actions for pandemic control under the IHR obligations, if such actions emanate from the intention of preventing the virus from further transboundary diffusion, or whether they are simply a matter of protecting the right to health of their nationals.[107] As such, viewed from the perspective of the rigorous standard of the 'State Practice–*opinio juris*' test, the current evidence for the legal acceptance of prevention as a customary rule might not be sufficient even if the objective outcome does benefit a broader range of the international community.

4.2 A Deductive Approach to the Identification of Customary International Law from the ICJ Perspective

Although the 'State Practice–*opinio juris*' test is considered to be an approach that is more of an 'inductive' nature, it 'does not in fact preclude a measure of deduction as an aid'[108] and shall be applied in the overall context with the necessary flexibility.[109] Specifically, in identifying the principle of prevention under the transboundary harm context, it has been noticed that the ICJ, in its actual practice, tends to be

[100] Rao (2017), p. 244.

[101] *Nuclear Weapons Advisory Opinion* (n. 44), para. 70; ILC Identification of Customary International Law (n. 85), p. 148, Conclusion 12 (commentary, 6th para.).

[102] *North Sea Continental Shelf (Federal Republic of Germany v. Denmark)*, Judgment, ICJ Reports 1969, p. 3, para.76; ILC Identification of Customary International Law (n. 85), p. 139, Conclusion 9 (commentary, 4th para.).

[103] ILC Identification of Customary International Law (n. 85), p. 128, Conclusion 3, para. 5, p. 139, Conclusion 9 (commentary, 4th para.).

[104] *Jurisdictional Immunities of the State (Germany v. Italy: Greece intervening)*, Judgment, ICJ Reports 2012, p. 99, para. 66; ILC Identification of Customary International Law (n. 85), p. 143.

[105] WHO Considerations for COVID-19 Measures (n. 90).

[106] Heath (2021), pp. 585 and 589.

[107] Graver (2022), pp. 217 and 220.

[108] ILC Identification of Customary International Law (n. 85), p. 126, Conclusion 2 (commentary, 5th para.).

[109] Ibid., pp. 126 and 127.

rather 'generous'[110] by not engaging in detailed examinations of the two constituent elements with reference to supporting facts.[111] Instead, it has recognized the customary character through a mere statement relying on the 'best and most expedient evidence',[112] namely, the interpretation of the rules' legal status in international documents with a diverse normative weight, especially those that are widely accepted.[113] Therefore, the IHR may have the potential to further clarify or refine rules aiming at the prevention of harm caused by pandemics' transboundary diffusion. Together with the accumulation and evolvement of practices, this may lead to the crystallization of the rules' legal status, which is emerging as customary international law in this legal area.[114]

Further, when it comes to the legal status of specific prevention obligations, the ICJ tends to use relatively vague terms, such as 'general international law' in the case of conducting an EIA.[115] Arguments have been made that the terms should be clearly differentiated from customary law, which the ICJ has failed to do,[116] since the ambiguity can 'accommodate different conceptualizations' and 'leave the door open for further clarification'.[117] However, contrary arguments have been made that although the ICJ did not explicitly confirm the EIA obligation's customary nature, its clear identification of the prevention principle, together with the large-scale recognition of the EIA obligation in national legislation,[118] provide solid grounds for interpreting the ICJ's statement in such a way.[119] In the context of pandemics and taking COVID-19 as an example, although currently lacking an explicit legal identification, there has been broad recognition of mandatory health measures in the form of legislative or administrative acts, such as mask-wearing in certain places, a quarantine under certain circumstances, and health code examination.[120] As such, it might be plausible to argue that the customary rule of preventing harm caused by

[110] Dupuy (2008), p. 452.

[111] *Nuclear Weapons Advisory Opinion* (n. 44), para. 29; *Certain activities carried out by Nicaragua in the border area (Costa Rica v. Nicaragua)* and *Construction of a Road in Costa Rica along the San Juan River (Nicaragua v. Costa Rica)*, Separate Opinion of Judge Donoghue, ICJ Reports 2015, p. 782, para.18; Duvic-Paoli (2018), p. 93; Talmon (2015), p. 432.

[112] Petersen (2017), p. 372; Duvic-Paoli (2018), p. 93; Tomka (2013), p. 197.

[113] The Stockholm Declaration and Action Plan for the Human Environment, UN Doc. A/CONF.48/14/Rev.1, 1972; UN General Assembly, Report of the United Nations Conference on Environment and Development (Rio Declaration), 12 August 1992, A/CONF.151/26 (Vol. 1); ILC Prevention of Transboundary Harm (n. 29).

[114] *Fisheries Jurisdiction (Federal Republic of Germany v. Zeeland)*, Merits, ICJ Reports 1974, p. 175, para. 34; ILC Identification of Customary International Law (n. 85), p. 145, Conclusion 11 (commentary, 6th para.).

[115] *Pulp Mills* (n. 27), para. 204.

[116] Separate Opinion of Judge Donoghue (n. 111), para. 2.

[117] Duvic-Paoli (2018), p. 214.

[118] Craik (2008), p. 4; United Nations Environment Programme (UNEP) Indicators and Environmental Impact Assessment, UNEP/CBD/SBSTTA/7/13, 2001.

[119] *Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area*, Advisory Opinion, ITLOS Reports 2011, p. 10, para. 145; Duvic-Paoli (2018), p. 215.

[120] WHO Considerations for COVID-19 Measures (n. 90).

pandemics' transboundary diffusion, if it does not yet exist, is undergoing a process of gradual emergence.

To briefly summarize this section, transboundary harm rules might be potentially identified as emerging customary international law in the world pandemic context based on abundant and representative practices, especially during COVID-19. Therefore, the identification of transboundary harm rules in this area may provide a theoretical basis for the further evolution and enrichment of pandemic prevention methods. Even if the rules have not yet acquired the status of custom in the context of pandemics since neither State practice nor *opinio juris* is uniform, the legal interests they seek to protect nonetheless represent common values of the international community,[121] demonstrating the rules' potential to address the threat of future outbreaks and facilitate actual State action.[122]

5 Transboundary Harm Rules in Future Pandemic Prevention

As mentioned in the Introduction, the uneven degree of States' compliance with the 'core competence requirements' has been considered to be a crucial reason for the unsatisfactory status quo of the PHEIC response system.[123] Arguments have been made that the current legal framework of world pandemic prevention under the IHR is 'not enough of a normative drive on its own to inspire action' and would thus require a further discovery of the essence of world pandemic control followed by legal revision.[124] Therefore, this section attempts to discover the inherent links between IHR deficiencies and transboundary harm rules from a normative perspective by tracing the underlying logic of the formation of transboundary harm rules. Through this, it seeks to elaborate on how the transboundary harm rules' framework can be applied in the current pandemic control system where the existing rules do not function well and thereby help to improve the framework by filling the gaps in existing law.[125]

Specifically, this paper argues that a higher degree of IHR implementation is needed, which can be accomplished by differentiated obligations based on the fundamental requirement of the general principle of due diligence under the framework of transboundary harm prevention.[126] Such a discussion seeks to provide some insights into balancing the discrepancies in pandemic prevention capacity-building among States with different levels of development, thereby ensuring an effective pandemic response by the international community.[127]

[121] Mazzeschi (2017), pp. 19 and 26.

[122] Duvic-Paoli (2018), p. 95.

[123] Heath (2021), p. 592; Tsai and Turbat (2020).

[124] Eccleston-Turner and Wenham (2021), p. 124.

[125] Cassese (2005), p. 188.

[126] *Corfu Channel Case (United Kingdom of Great Britain and Northern Ireland v. Albania)*, Merits, ICJ Reports 1949, p. 4, p. 22; Xue (2003), p. 164; ILA Due Diligence Second Report (n. 59), p. 9.

[127] ILA Due Diligence Second Report (n. 59), p. 9.

5.1 The Underlying Correlations between the Due Diligence and Transboundary Harm Rules

In order to apply transboundary harm rules to pandemic prevention with a solid theoretical basis, it is necessary to look into the fundamental structure of the origin of the rules.

As noted by the ICJ in the *Pulp Mills* case: 'The Court points out that the principle of prevention, as a customary rule, has its origins in the due diligence that is required of a State in its territory.'[128] The Court then explained the concept of due diligence by referring to the *Corfu Channel* case[129]: it is 'every State's obligation not to allow knowingly its territory to be used for acts contrary to the rights of other States'.[130] Identified as a general principle of international law by the ICJ,[131] the due diligence stipulates the fundamental requirements of States under international law to exercise management and control of activities carried out in their territory to prevent such activities from causing detrimental effects in other States.[132] However, although it has been well established that the principle of due diligence, by definition, triggers obligations of conduct,[133] it does not lay down the specific content of such obligations.[134] Hence, due diligence only lays down the fundamental requirement of 'good government' and serves as the most generalized standard of conduct.[135] It cannot itself generate concrete legal obligations and is considered relatively vague and difficult to describe in precise terms.[136]

Therefore, besides its application being limited to the transboundary context and a significant level of harm, the principle of prevention can be seen as a refinement of the principle of due diligence in actual practice. The obligations that have emerged from the principle of prevention, which requires States to use all the means at their disposal under specific contexts, can be detailed based on relevant legal instruments and customary rules in corresponding areas of international law.[137] As such, the set of prevention obligations (prior notification, consultation, negotiation, cooperation,

[128] *Pulp Mills* (n. 27), para.101.

[129] Ibid.

[130] *Corfu Channel* (n. 126), p. 22.

[131] Ibid.

[132] Ibid., p. 22; Xue (2003), p. 163.

[133] ILC, Draft Articles on the Law of the Non-Navigational Uses of International Watercourses and Commentaries thereto and Resolution on Transboundary Confined Groundwater, ILC Yearbook 1994, Vol. II, p. 89, at p. 103, Art. 7 (commentary, 4th para).

[134] ILC, Marcelo Vázquez-Bermúdez, Special Rapporteur, Second Report on General Principles of Law, A/CN.4/741, 2020, para. 169; Xue (2003), p. 163.

[135] *Lac Lanoux Arbitration (France v. Spain)*, 16 November 1957, 12 RIAA 281, p. 296; Xue (2003), p. 163; *Certain activities carried out by Nicaragua in the border area (Costa Rica v. Nicaragua)* and *Construction of a Road in Costa Rica along the San Juan River (Nicaragua v. Costa Rica)*, Separate Opinion of Judge *ad hoc* Dugard, ICJ Reports 2015, p. 842, para. 9.

[136] *Responsibilities and Obligations of States Sponsoring Persons and Entities* (n. 119), para. 117; ILA Due Diligence Second Report (n. 59), p. 7; Xue (2003), p. 164.

[137] Xue (2003), p. 164; ILA Due Diligence Second Report (n. 59), p. 22; Barnidge (2006), p. 86.

EIA) can be seen as the specification of due diligence obligations,[138] and also secures the due diligence's fulfilment in the context of transboundary harm.[139] Nevertheless, these obligations vary from case to case and according to the facts in question.[140] Moreover, these obligations can achieve further development based on factors such as scientific progress, legal reformation or clarification, and a greater need by the global community.[141] In that case, due diligence can reversely serve as the general standard guiding and promoting the generation and development of specific prevention obligations so that the requirement to use 'all the means at its disposal'[142] can be continuously satisfied from States' best practicable and available actions.[143]

However, as also noted by the ICJ in the *Corfu Channel* case: 'it cannot be concluded from the mere fact of the control exercised by a State over its territory that State necessarily knew, or ought to have known, of any unlawful act perpetrated therein'.[144] Such concern shall be taken into account when requiring States to carry out certain preventive measures,[145] especially when the State in question has limited economic capacity.[146] From the perspective of differentiation, applying transboundary harm rules in the pandemic context, while generating specific prevention obligations, rationalizes the standard according to which States' actions are based. The requirement of 'the means *at its disposal*' ensures that States can carry out all necessary and appropriate measures within their capacities to achieve the given objective,[147] while not obliging them to bear the excessive burden of prevention by unreasonable normative demands.[148]

For instance, the government's regulatory authority can directly affect a State's virus control measures concerning the management of population movements, such as quarantines and travel bans. A less intensive control of population movements may, to a greater extent, expose neighbouring States to the risk of infection. However, suppose that the State of origin has done its best to limit cross-border population movements but this has had little effect. In that case, it cannot be simply concluded that the State of origin has failed to meet its obligation of conduct or that it shall be held responsible for failing to prevent the detrimental result from occurring. Disputes arising from disparities in virus blocking also exist where States' ability to

[138] McIntyre (2021), p. 606.

[139] *Certain activities carried out by Nicaragua in the border area (Costa Rica v. Nicaragua)* and *Construction of a Road in Costa Rica along the San Juan River (Nicaragua v. Costa Rica)*, Separate Opinion of Judge Owada, ICJ Reports 2015, p. 665, para. 18.

[140] ILA Due Diligence Second Report (n. 59), pp. 2 and 4.

[141] Ibid., p. 20; Koivurova (2010), para. 20.

[142] *Pulp Mills* (n. 27), para. 101; *San Juan River* (n. 27), para. 104.

[143] Dupuy (1977), p. 369.

[144] *Corfu Channel* (n. 126), p. 18.

[145] *Alasdair Ross Anderson et al. v. Republic of Costa Rica*, ICSID Case No ARB (AF)/07/3, Award of 19 May 2010, para. 58; *Responsibilities and Obligations of States Sponsoring Persons and Entities* (n. 119), para. 112.

[146] Barnidge (2006), p. 114.

[147] *Pulp Mills* (n. 27), paras. 81, 197; *San Juan River* (n. 27), para. 104.

[148] Xue (2003), p. 164; ILA Due Diligence Second Report (n. 59), p. 3.

produce or import vaccines varies, thus resulting in differentiating speeds in forming collective immunity.

However, it must be pointed out that the requirement to 'use all the means at its disposal' does not imply that States are free to take whatever measures they choose to prevent the spread of pandemics irrespective of human rights considerations. On the contrary, the lawful way of balancing people's right to health and life with other fundamental human rights (such as the freedom of movement, the freedom of religion, and the right to privacy) under an exigent pandemic like COVID-19 is undoubtedly worth a detailed legal analysis.[149] Nevertheless, this paper does not aim to further examine whether the restriction of or a derogation from specific human rights to protect health and life is necessary, proportionate, or lawful when the State in question *possesses* the ability to carry out effective measures.[150] Instead, it focuses on addressing the current situation where a significant number of States *do not possess* the ability to meet the predicament.

Therefore, the last part of this paper will examine how, exactly, transboundary harm rules can help alleviate the gap in pandemic prevention ability between developed and developing States in favour of the common good of global health security. It seeks to reveal that differentiated obligations are also applicable and practical under the framework of transboundary harm rules in the context of pandemics. Based on this requirement, developed States shall take on more responsibility in pandemic prevention to complement what cannot be accomplished by developing States.

5.2 The 'Two-stage Obligation' Framework of Pandemic Prevention

From the above subsection, the underlying correlations between the due diligence and transboundary harm rules demonstrate the value of the latter meeting the dilemma of States' uneven compliance with the core capacity-building in pandemic prevention, which echoes the requirements of differentiation in obligation generation. Under the IHR, while the PHEIC declaration itself does not create any new legal obligations for the States in question beyond the core capacity-building requirement, national authorities are expected to take appropriate and effective measures based on relevant IHR articles following WHO Recommendations.[151] The different developmental levels of States thus inevitably lead to an unbalanced fulfilment of the IHR implementation. Consequently, this paper argues for a *two-stage obligation framework* in future pandemic prevention. Such an attempt seeks to improve the situation of uneven core capacity-building and encourage broader participation in the prevention regime,[152] thereby guaranteeing the effectiveness of global pandemic control.

[149] Donald and Leach (2022), p. 109; Dagron (2022), p. 128.

[150] Emmons (2022), p. 377; Scheinin and Molbæk-Steensig (2021), p. 21.

[151] International Health Regulations (n. 6), Arts. 1, 13 and 16; IDI 12th Commission Report on Epidemics (n. 5), p. 65.

[152] ILA Due Diligence Second Report (n. 59), p. 3.

In the *first stage*, specific procedural obligations regulated in the IHR relating to preparation and response can be considered as fundamental prevention obligations in the pandemic context. Those obligations, including the establishment of a National IHR Focal Point which is tasked with surveillance, notification, information-sharing, and consultation,[153] can be seen as a baseline standard that applies to all States irrespective of their capacities and characteristics.[154] Any breach of these obligations of conduct in the form of an omission can be held internationally wrongful in the first place,[155] namely, 'an abstention consisting of the fact of not doing that which ought to be done'.[156] These obligations are considered objective rather than subjective due to their explicit prescription and specific requirements that are indispensable for a pandemic response, against which States' discretion shall be relatively limited.[157] However, although States cannot refrain from carrying out these obligations, the degree of their completion is allowed for certain derogations as the implementations are initially and, to a great extent, subject to different State capacities.[158]

This will lead to the *second stage* of obligations guided by due diligence as the basic principle regarding a response to pandemics under international law.[159] It has been extensively recognized that due diligence 'leaves room for States to determine which measures are necessary and appropriate and which are feasible and available within their capacities to achieve the given objective'.[160] Particularly in the transboundary harm context, limited obligations in certain treaties do not exclude any other obligations that may exist in customary international law.[161] Therefore, under the context of pandemic prevention, where States' core capacity-building is proven to be uneven and the events are considered to be highly fact-intensive and science-dependent,[162] the assessment of 'all the means at its disposal' shall allow for a certain degree of flexibility and a margin of appreciation based on individual circumstances.[163] Such an assessment is required to meet the standard of reasonableness so that the requirements of effective pandemic diffusion control and States' compliance with obligations within their power can be simultaneously satisfied.[164]

[153] International Health Regulations (n. 6), Arts. 4, 5, 6, 7 and 8.

[154] ILA Due Diligence Second Report (n. 59), p. 20; IDI 12th Commission Report on Epidemics (n. 5), p. 87.

[155] Frouville (2010), p. 259; Crawford (2013), p. 231; Xue (2003), p. 165.

[156] Latty (2010), pp. 356, 358 and 360.

[157] ILA Due Diligence Second Report (n. 59), pp. 7, 13 and 87.

[158] Ibid., p. 18; *Responsibilities and Obligations of States Sponsoring Persons and Entities* (n. 119), paras. 158, 159 and 161.

[159] IDI 12th Commission Report on Epidemics (n. 5), pp. 87 and 106.

[160] Xue (2003), p. 164.

[161] *San Juan River* (n. 27), para.108.

[162] IDI 12th Commission Report on Epidemics (n. 5), p. 131.

[163] Ibid., pp. 80 and 201.

[164] Brownlie (2008), p. 526; *Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Bosnia and Herzegovina v. Serbia and Montenegro)*, Judgment, ICJ Reports 2007, p. 43, para. 430; ILA Due Diligence Second Report (n. 59), pp. 3 and 8.

In practice, implementing the two-stage obligation framework requires support from *differentiated standards* of prevention.

5.3 Differentiated Standards of Prevention Under the Transboundary Harm Framework

As due diligence obligations can increase or, in theory, also decrease to adapt to circumstantial or international legal changes,[165] pandemic prevention can potentially be interpreted in light of *differentiated standards*, which is analogized from 'common but differentiated responsibility' in the context of climate change.[166] This standard aims to take account of States' different levels of development, including but not limited to economic, technological, scientific knowledge and resources,[167] concerning pandemic prevention, which needs to be enhanced through a higher degree of IHR implementation to protect the collective interest of the global community.[168]

Firstly, concerning differentiated standards in assessing the *risk of significant harm*, although States shall carry out the first stage procedural obligations without exception, their varying abilities to obtain data and information will directly affect their access to scientific evidence[169] and the accuracy of evaluation[170] when the risk of a suspected PHEIC occurs. As pandemics can spread transboundary and worldwide within a short period of time,[171] the degree of the risk assessment can significantly impact the timing and information content of the notification.[172] Secondly, concerning differentiated standards in implementing *prevention obligations*, developing States currently encounter massive difficulties and obstacles with regard to a pandemic response, such as the lack of medical resources to combat rapidly evolving virus variants.[173] This reveals an essential need for developed States to undertake broader duties beyond their treaty obligations under the IHR based on the principle of due diligence.[174]

In particular, the differentiated standards might be implemented with the support of the obligations of information-sharing and cooperation, which are considered to be 'much wider and applicable throughout general international law'.[175]

[165] ILA Due Diligence Second Report (n. 59), p. 22.

[166] Rio Declaration (n. 113), Principle 7.

[167] *Responsibilities and Obligations of States Sponsoring Persons and Entities* (n. 119), para. 162; IDI 12th Commission Report on Epidemics (n. 5), p. 106; Duvic-Paoli (2018), p. 202.

[168] ILA Due Diligence Second Report (n. 59), p. 4.

[169] IDI 12th Commission Report on Epidemics (n. 5), p. 106.

[170] ILC Prevention of Transboundary Harm (n. 29), p. 154, Art. 3 (commentary, 11th para).

[171] IDI 12th Commission Report on Epidemics (n. 5), pp. 62 and 75.

[172] Rieu-Clarke (2013), p. 120; Separate Opinion of Judge Donoghue (n. 111), paras. 21, 22 and 23.

[173] Tegally et al. (2020).

[174] IDI 12th Commission Report on Epidemics (n. 5), pp. 74 and 103; ILA Due Diligence Second Report (n. 59), p. 16.

[175] Sirleaf (2020); Duvic-Paoli (2018), p. 218.

5.4 Obligation of Cooperation as a Core of the Fulfilment of Differentiated Standards

It is noted that although cooperation in good faith has been considered as the central element of transboundary harm prevention,[176] the IHR has not emphasized the importance of the obligation of cooperation from a legal or compulsory perspective,[177] leading to a lack of sufficient international cooperation in relevant information-sharing and medical assistance.[178] As a result, preventing pandemics from transboundary diffusion has proved inefficient due to the limited implementation of obligations from the IHR.[179]

Therefore, a higher degree of due diligence and cooperation shall be required from developed States, such as the duty to transfer data, technology and scientific knowledge to developing countries[180] concerning tests, treatments, and case tracking and reporting methods.[181] Specifically in the case of COVID-19, the disproportionate distribution of vaccines in different parts of the world, which is considered to be dictated by factors of 'financial self-interest, fiscal considerations, geopolitics, sovereignty, governance, protectionism and nationalism',[182] has impeded the process of coverage and collective immunity.[183] Therefore, developed States' engagement in fulfilling a higher standard of the cooperation obligation can, although it may not directly benefit virus transmission blocking, assist developing States in raising the fundamental capacity of pandemic prevention.

It is worth mentioning that here the WHO, as an international organization that is able to influence its member States' actions,[184] might play an important role in promoting global coordination and collaboration in order to confront future international health emergencies.[185] For instance, suggestions have been made that the WHO can initiate a further refinement of the decision instrument for PHEIC assessment[186] and risk classification so that it becomes a more consistent and detailed standard[187] by calling for a global pandemic treaty or internationally agreed upon

[176] *Gabcikovo-Nagymaros Project* (n. 73), paras. 68, 109 and 142; *Pulp Mills* (n. 27), para. 145.

[177] International Health Regulations (n. 6), Art. 44; Fidler and Gostin (2006), p. 88; Heath (2021), p. 592.

[178] Benvenisti (2020), pp. 589–590.

[179] Toebes (2018), p. 20; Youde (2012), p. 89.

[180] United Nations Convention on the Law of the Sea, 14 November 1994, 1822 UNTS 3, Art. 144; *Responsibilities and Obligations of States Sponsoring Persons and Entities* (n. 119), para. 157.

[181] WHO, COVID-19 Strategic Preparedness and Response Plan 2022: Global Monitoring and Evaluation Framework, 30 September 2022, p. 1.

[182] Singh (2022), p. 30.

[183] WHO, Accelerating COVID-19 Vaccine Deployment: Removing Obstacles to Increase Coverage Levels and Protect Those at High Risk, 20 April 2022, pp. 24 and 32.

[184] Duvic-Paoli (2018), p. 315.

[185] Emmons (2022), p. 385.

[186] International Health Regulations (n. 6), Annex 2.

[187] Emmons (2022), p. 385.

rules.[188] Therefore, while it has been made very clear that prevention obligations can only apply to States,[189] the WHO might, in practice, assist with States' implementation for the sake of pandemic prevention as a global interest.

6 Concluding Remarks

Following the COVID-19 pandemic, the importance of world pandemic prevention and an international scheme of health security has again attracted global attention.[190] However, despite the existence of the IHR treaty regime, it is perceived that international law has failed to play a major role in guiding States to face this global catastrophe.[191] A legal evolution incorporating other rules of international law is thus required to address the uneven PHEIC response capacity among States. This paper argues that transboundary harm rules can be applied in the context of world pandemics to enhance the universal level of future pandemic prevention.

The paper started by revealing the similarities between transboundary harm and PHEIC from the perspectives of conceptual characters and legal elements. This gives rise to a further inference that transboundary harm rules, which consist of the principle of prevention and prevention obligations, might have already been applied in the form of IHR treaty obligations under the PHEIC framework. Such rules might be potentially identified as emerging customary international law in the context of world pandemics. In addition, transboundary harm rules can help balance States' uneven capacities in pandemic prevention by building a theoretical framework. On the one hand, the rules allow developing States, after they have met their baseline standard of care, to be excused from the excessive burden of prevention obligations that are beyond their capability. In this case, they are only required to take measures at their disposal based on a margin of appreciation. On the other hand, the rules nonetheless require developed States to undertake higher duties beyond the IHR to complement what is lacking from developing States. Such a two-stage obligation framework, which justifies the differentiated standards and underlines the obligation of cooperation, has been designed in the best interest of global pandemic prevention practice. This also echoes the overarching principles of the WHO's proposed accord and the fundamental objectives that the international community seeks to achieve: equity in access to pandemic countermeasures and stronger global coordination in future outbreaks with a pandemic potential.[192]

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[188] Staunton (2022), pp. 300–301; Editorial (2021).

[189] Duvic-Paoli (2018), p. 314.

[190] Heath (2021), p. 585; Sinclair (2017), p. 3.

[191] IDI 12th Commission Report on Epidemics (n. 5), p. 56; Alvarez (2020), p. 585.

[192] WHO Pandemic Accord (n. 20); WHO INB First Working Draft (n. 21), pp. 6–8.

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