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Addressing Marine Plastic Pollution as a "Wicked" Problem of Transnational Environmental Governance.

Prof Owen McIntyre
School of Law / Environmental Research Institute
University College Cork
o.mcintyre@ucc.ie

Introduction

Recent scientific research and related media publicity concerning the nature and scale of the problem of marine plastic pollution (MPP) has shone a spotlight on the difficult challenge of designing and implementing effective legal responses to address this complex environmental challenge. The ecological and human health implications of MPP are as yet difficult to foresee, but may prove extremely significant, especially as regards so-called "microplastics", formed by the breakdown of larger plastic debris and also commonly found in cosmetics and synthetic textiles and discharged in ever greater quantities to watercourses in domestic wastewater. The ecological impacts of MPP are many and varied, and range from causing a choking and starvation hazard for wildlife, to the transportation to new locations of persistent organic pollutants (POPs) and other toxic chemicals and of non-indigenous and potentially harmful organisms, and to the distribution of algae associated with red tides.[1] To give some indication of the scale of possible human health impacts, a 2014 study by the University of Ghent found that each human may consume up to 11,000 microscopic fragments of plastic in their seafood each year.[2] In total, around 8-12 million tonnes of plastic waste currently finds its way into the oceans each year, though this could increase significantly in the light of the plans of the global petrochemicals industry to expand production of plastics, partly 'to hedge against the possibility that a serious global response to climate change might reduce demand for their fuels'.[3]

Few would argue that the complex regulatory challenges presented by marine plastic pollution, which commands so much attention in environmental discourse today, should not be characterised as a "wicked" public policy problem, in the sense that it 'is difficult or impossible to solve because of incomplete, contradictory, and changing requirements that are often difficult to recognise' or is one where 'because of complex interdependencies, the effort to solve one aspect of a wicked problem may reveal or create other problems'.[4] Key among these challenges is that of the "fragmentation" of the diverse environmental law frameworks applying to MPP. Commentators have long expressed concern that the expansive complex of rules making up environmental law is highly fragmented, giving rise to overlapping regulatory requirements and institutional architecture that may lack complementarity, or that

[1] See D.K.A. Barnes, F. Galgani, R.C. Thompson and M. Barlaz, 'Accumulation and fragmentation of plastic debris in global environments', (2009) 364 *Philosophical Transactions of the Royal Society B* 1985-1998, at 1985.
[2] L. Van Cauwenberghe and C.R. Janssen, 'Mocroplastics in bivalves cultured for human consumption', (October 2014) 193 *Environmental Pollution* 65-70.
[3] B. Gardiner, 'The Plastics Pipeline: A Surge of New Production Is in the Way', *Yale E360* (19 December 2019), available at: https://e360.yale.edu/features/the-plastics-pipeline-a-surge-of-new-production-is-on-the-way
[4] Australian Public Service Commission, *Tackling wicked problems: A public policy perspective* (25 October 2007), available at https://www.apsc.gov.au/tackling-wicked-problems-public-policy-perspective

may even conflict.[5] There is particular awareness of this phenomenon in the field of international environmental law, leading the International Law Commission (ILC) to characterise the problem of legal fragmentation as arising from 'the emergence of specialised and (relatively) autonomous rules or rule complexes, legal institutions and spheres of legal practice'.[6] A legal framework may be fragmented vertically, with different 'legislative' measures applying at multiple levels of regulatory control - international, regional or supranational (EU), and national, and may also be fragmented horizontally, with various legal measures addressing different problems and causal activities.

While regulatory specialisation may be inevitable given the ever increasing scientific and technical complexity of environmental law, the MPP problem exemplifies such fragmentation as attempts to address MPP involve legal measures, adopted at various levels of governance, that seek to regulate a range of environmental media or related activities, including sustainable production and consumption, circular economy, waste management, freshwater resources, biodiversity or marine environmental pollution. Fragmentation, and associated problems of legal incoherence, are immediately obvious in relation to the international rules applying to the MPP challenge.[7] As regards horizontal fragmentation, relevant rules can principally be found in the realms of international marine environmental law and international freshwater resources law, though rules on international biodiversity law, international waste law and international chemicals law may also be relevant. To add further to the resulting confusion, the relevant rules are vertically fragmented between global and regional rules of international law, European Union (EU) policy and law, and emerging national legislative frameworks.

The regulatory difficulties associated with the environmental problem of plastic waste and pollution more generally are inextricably linked to the transnational character of globalised supply chains,[8] not alone for plastic products, but for the treatment or disposal of plastic waste and for all internationally traded goods which incorporate or come packaged in plastics of one form or another. In such an uncertain regulatory landscape, beset by legal fragmentation and numerous regulatory lacunae, the rapidly emerging paradigm of global or transnational environmental law (TEL)[9] may offer an innovative means of controlling,

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[5] For a concise introduction to the problem of '[f]ragmentation in environmental law', see F.M. Platjouw, *Environmental Law and the Ecosystem Approach: Maintaining ecological integrity through consistency in law* (Routledge, 2016), 99-120.

[6] United Nations General Assembly, *Fragmentation of International Law: Difficulties Arising from the Diversification and Expansion of International Law (Report of the Study Group of the International Law Commission)*, UN Doc A/CN.4/L.682 (13 April 2006). The ILC noted, at para. 14, that 'fragmentation does create the danger of conflicting and incompatible rules, principles, rule-systems and institutional practices.'

[7] See E.A. Kirk and N. Popattanachai, 'Marine plastics: Fragmentation, effectiveness and legitimacy in international law-making', (2018) 27/3 *Review of European, Comparative and International Environmental Law* 222- 233.

[8] N. Walker, *Intimations of Global Law* (Cambridge University Press, Cambridge, 2014) describes "globalisation", at 3-6, in terms of

> 'a strong trend away from "the local" and the territorially confined, and in particular the state-confined, as the main point of reference for many areas of human organisation … [and] … the gradual deterritorialisation and disembedding of the basic setting of social organisations'.

On the legal difficulties associated with regulating "global value chains", see G. Baars *et al*, 'The role of law in global value chains: a research manifesto', (2016) Vol. 4, No. 1, *London Review of International Law* 57-79.

[9] See O. McIntyre, 'Transnational Environmental Regulation and the Normativisation of Global Environmental Governance Standards', (2018) 10/2 *Journal of Property, Planning and*

informing and guiding the related activities of producers, manufacturers, exporters, importers, distributors, retailers and consumers across global supply chains. Walker describes the novel order of "global law", which responds to the challenges presented to traditional legal frameworks by the phenomenon of globalisation, as being based upon 'the processes, practices, institutions, doctrines, values and inspirations through which law becomes less centred upon the jurisdiction and less dependent upon the organs of the modern state, and instead gradually comes to assume a "global" significance'.[10] In the specific context of environmental regulation of global value chains, such rules and standards might include, in addition to formal international and domestic legal requirements, a range of private or hybrid public/private transnational instruments or mechanisms, including environmental labelling and certification schemes,[11] global sustainability norms,[12] corporate social responsibility (CSR) policies, [13] environmental management systems,[14] environmental or sustainability reporting systems,[15] and environmental and social safeguard policies of multilateral project lenders.[16] This diverse mix of environmental regulatory standards, many of which are informal (i.e. non-State directed) in origin and voluntary in nature, may offer a way forward, at least in the short to medium term, by harnessing the current broad coalition of concern over MPP and, in so doing, helping to frame the emerging regulatory response. The Australian Public Service Commission appears to suggest as much, advising that such "wicked" problems 'require thinking that is grasping the big picture, including the interrelationships among the full range of causal factors underlying them. They often require broader, more collaborative and innovative approaches.'[17]

A Fragmented Legal Landscape

International Law

Environmental Law 92-112. See further, B. Kingsbury, B. (2007), 'Global environmental governance as administration: implications for international law', in D. Bodansky, J. Brunnée, and E. Hey, (Eds), *Oxford Handbook of International Environmental Law* (OUP, Oxford, 2007) 63-84; T. Yang and R.V. Percival, 'The Emergence of Global Environmental Law', (2009) 36 *Ecology Law Quarterly* 615-664.

[10] Walker, *supra*, n. 8, at 2.

[11] For example, the various sustainability standards operating under the auspices of the ISEAL Alliance: https://www.isealalliance.org/community-members?f%5B0%5D=community_status%3A176

[12] See, for example, the UN Global Compact: https://www.unglobalcompact.org/what-is-gc/mission/principles and the OECD Guidelines for Multinational Enterprises: http://mneguidelines.oecd.org/about/

[13] See further United Nations Industrial Development Organisation (UNIDO) at: https://www.unido.org/our-focus/advancing-economic-competitiveness/competitive-trade-capacities-and-corporate-responsibility/corporate-social-responsibility-market-integration/what-csr

[14] See, for example, the ISO 26000 Social Responsibility Guidance Standard: https://www.iso.org/iso-26000-social-responsibility.html See generally, N. Roht-Arriaza, 'Shifting the Point of Regulation: The International Organization for Standardization and Global Law-making on Trade and the Environment', (1995) 22 *Ecology Law Quarterly* 479.

[15] See, for example, the various sectoral sustainability reporting standards adopted under the auspices of the Global Reporting Initiative: https://www.globalreporting.org/standards

[16] See, for example, the IFC Environmental and Social Sustainability Policy and Performance Requirements: http://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/sustainability+framework See generally, O. McIntyre and S. Nanwani (eds.), *The Practice of Independent Accountability Mechanisms (IAMs): Towards Good Governance in Development Financing* (Brill, Leiden, 2019).

[17] Australian Public Service Commission, *supra*, n. 4.

The phenomenon of fragmentation of international law more generally has long been recognised by expert commentators[18] and has even been the subject of an in-depth study by the International Law Commission.[19] It is understood to be a particular problem in the field of international environmental law, where significant treaty proliferation, in terms of the hundreds of multilateral environmental agreements (MEAs) adopted since the early 1970s, has led to the creation of an extensive complex of cooperative inter-State institutions, some of which are rule-making in nature,[20] as well as a broad range of rules on pollution abatement and remediation, and on biodiversity conservation, and related inter-State information-sharing and permitting procedures.[21] Such 'treaty congestion' was always likely to create regime overlaps, regulatory lacunae and legal inconsistencies,[22] especially when one considers the complex interactions between the rules of international environmental law and other fields of international law, such as international human rights law, international natural resources law or international economic law.

International Marine Environmental Law

Within the realm of international marine environmental law, MPP is principally understood as a problem of pollution from 'land-based sources' (LBS). As with early, tentative conventional measures to combat LBS, notably including the 1974 Paris Convention,[23] Articles 194, 207 and 213 of the 1982 UN Convention on the Law of the Sea (UNCLOS),[24] which address the problem of LBS, are regarded as legally indeterminate and normatively weak. The Paris Convention required States to eliminate pollution of the marine area in respect of Annex A, Part I & Part III Substances and to strictly limit pollution of the marine area in respect of Annex A, Part II Substances, but expressly acknowledged the critical need for the elaboration of additional rules and standards including

> 'specific regulations or standards governing the quality of the environment, discharges into the maritime area, such discharges into watercourses and emissions into the atmosphere as affect the maritime area, and the composition and use of substances and products.'[25]

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[18] See, for example, M. Koskenniemi and P. Leino, 'Fragmentation of International Law? Postmodern Anxieties', (2002) 15 *Leiden Journal of International Law* 553-579.

[19] *Supra*, n. 6.

[20] Koskenniemi traces fragmentation in international law to the practice, which is particularly prevalent in international environmental law, of delegating international legal standard-setting to take place 'within the framework of multilateral treaty law-making processes'. See Platjouw, *supra*, n. 5, at 106, citing M. Koskenniemi, 'International Legislation Today: Limits & Possibilities' (2005) 23 *Wisconsin International Law Journal* 61.

[21] See, for example, T. Stephens, 'Multiple International Courts and the "Fragmentation" of International Environmental Law', (2007) 25 *Australian Yearbook of International Law* 227.

[22] See, for example, K. Scott, 'International Environmental Governance: Managing Fragmentation through Institutional Connection', (2011) 12 *Melbourne Journal of International Law* 1, who notes, at 4, that

> 'The fragmentation of international environmental law arising from the creation of multiple regimes and institutions with similar or conflated regulatory mandates is extant, and has undoubtedly given rise to the risk of duplication, divergence, and even conflict between environmental standards and obligations.'

See further, Platjouw, *supra*, n. 5, at 105.

[23] Convention for the Prevention of Marine Pollution from Land-Based Sources, 4 June 1974, 1546 UNTS 119, as amended by the Protocol of 26 March 1986 and ultimately replaced by the 1992 Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention), (1993) 32 ILM 1072.

[24] (1982) 21 ILM 1261.

[25] Article 4(3).

This would appear to recognise the sheer complexity of LBS pollution such as MPP and, especially, the range and diversity of legal approaches required to address it.

Similarly, Article 207 of UNCLOS simply requires that States

> 'adopt laws and regulations to prevent, reduce and control pollution of the marine environment from land-based sources, including rivers, estuaries, pipelines and outfall structures, taking into account internationally agreed rules, standards and recommended practices and procedures'.

However, even yet there are few such internationally agreed rules and standards to be found in international law or State practice.[26] In addition to this lack of clarity, commentators highlight the lack of any clear obligation to give effect to any such rules or standards, or of any timeline for action, and link these deficiencies to increased risk of legal fragmentation.[27] Though model rules were adopted by the International Law Association (ILA) in 1972[28] and, more recently, 'recommended practices and procedures' were adopted by UNEP in the form of the 1985 Montreal Guidelines,[29] with the express aim of assisting States in developing national legislation and further elaborating more detailed international instruments, few States have adopted these Guidelines, which might anyway be considered excessively general and vague.[30] In addition, UNCLOS Articles 207 and 213 have been further criticised for seeking to 'incorporate all possible pollutants deriving from land under one all-encompassing article', despite the diverse origins, characteristics and impacts of the many different LBS pollutants threatening the marine environment.[31] This problem has persisted and, throughout much of the development of international measures on LBS pollution, '[m]arine plastic is captured under the broader category of "litter" and was not initially a priority action though action to tackle it was encouraged'.[32]

The need for a more highly elaborated global conventional regime in respect of LBS has long been recognised. For example, the 1982 Montevideo Programme for the development and periodic review of environmental law[33] concluded that in the longer term a global convention might be prepared 'based on further experience gained in the development and implementation of regional, sub-regional and bilateral agreements and taking into account guidelines or principles at the global level developed within the framework of UNEP'.[34] Similarly, the Montreal Guidelines list as one of their main functions, that of laying 'a foundation for the preparation of a global convention at some stage in the future'.[35] In the preparations leading up to the 1992 UNCED Conference in Rio, a Report from the UN

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[26] See, A. Nollkaemper, 'Marine Pollution from Land-Based Sources: Towards a Global Practice', (1992) 24/1 *Marine Pollution Bulletin* 8, at 10; D. VanderZwaag and A. Powers, 'The Protection of the Marine Environment from Land-based Pollution and Activities: Gauging the Tides of Global and Regional Governance', (2008) 23 *International Journal of Marine and Coastal Law* 423, at 425.

[27] Kirk and Popattanachai, supra, n. 7, at 223.

[28] ILA, Articles on Marine Pollution of Continental Origin, *Report of the Fifty-Fifth Conference* (ILA, New York, 1972).

[29] UNEP Governing Council, Decision 13/18. See UNEP, 'Protection of the Marine Environment against Pollution from Land-based Sources (Montreal Guidelines)', (1985) 14 *Environmental Policy and Law* 77.

[30] Nollkaemper, *supra*, n. 26, at 10.

[31] L. Finska and J. Gjørtz Howden, 'Troubled waters – Where is the bridge? Confronting marine plastic pollution from international watercourses', (2018) 27/3 *Review of European, Comparative and International Environmental Law* 245-253, at 247.

[32] Kirk and Popattanachai, supra, n. 7, at 224.

[33] Adopted by UNEP Governing Council Decision 10/21.

[34] See Nollkaemper, *supra*, n. 26, at 10.

[35] *Supra*, n. 29.

Secretary-General to the Conference Preparatory Committee argued strongly for refinement of the global normative framework applying to the LBS problem by setting out 'general principles for global application which would inspire, motivate and guide national and regional measures'.[36] Thus the need for global action has long been acknowledged and the UN Secretary-General provided three options for the approach that UNCED might take to the LBS problem:[37]

(i) A legally binding global convention;
(ii) A non-legally-binding instrument, containing a formal declaration of principles and supplemented by a detailed Action Plan; or
(iii) A combined approach, consisting of a global convention articulating general principles and supplemented by an Action Plan.

The international community eventually proceeded with option (ii) above, and in 1995 the Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities (GPA) was adopted, and now operates under the auspices of UNEP.[38] As a soft-law instrument, the GPA is intended 'to be a source of conceptual and practical guidance to be drawn upon by national and/or regional authorities in devising and implementing sustained action to prevent, reduce, control and/or eliminate marine degradation from land-based activities'.[39] Appearing to anticipate the potential role of TEL approaches in articulating values and building the consensus for action that could prepare the ground for more formal governance frameworks, the GPA focuses on establishing and strengthening voluntary multi-stakeholder action on such key sectoral issues as nutrient pollution, wastewater management and marine litter.[40] In 2012 a global multi-stakeholder partnership on marine litter was established under the auspices of the GPA to focus specifically on this problem.[41]

Conventional instruments addressing LBS have been adopted for a number of regional seas but, once again, there would appear to be problems with their effective implementation. Such instruments include the 1980 Athens Protocol to the 1980 Barcelona Convention,[42] covering the Mediterranean Sea, which has seen some limited progress in its practical implementation,

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[36] Report of the UN Secretary-General to the 3rd Session of PrepCom, UN Doc. A.CONF.151/PC/71. See Nollkaemper, *supra*, n. 26, at 10.
[37] *Ibid.*
[38] UNEP, *Intergovernmental Conference to Adopt a Global Programme of Action for the Protection of the Marine Environment from Land-based Activities*, UN Doc. UNEP(OCA)/LBA/G.2/7 (5 December 1995). See generally www.gpa.unep.org
[39] *Ibid.*, at 9.
[40] See generally, D.L. VanderZwaag, P.G. Wells and J. Karau, 'The Global Programme of Action for the Protection of the Marine Environment from Land-based Activities: A Myriad of Sounds, Will the World Listen?', (1998) 13 *Ocean Yearbook* 183-210.
[41] UNEP, Third Intergovernmental Review Meeting on the Implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities (IGR-3), UN Doc. UNEP/GPA/IGR.3/6 (26 January 2012).
[42] Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources and Activities (Athens, 17 May 1980), amended on 17 March 1996, available at http://extwprlegs1.fao.org/docs/pdf/mul38141.pdf; http://wedocs.unep.org/bitstream/handle/20.500.11822/7096/Consolidated_LBS96_ENG.pdf?sequence=5&isAllowed=y

the 1983 Quito Protocol for the Protection of the South-East Pacific Against Pollution from Land-Based Sources,[43] the 1990 Protocol for the Protection of the Marine Environment against Pollution from Land-Based Sources[44] to the 1978 Kuwait Regional Convention for Cooperation on the Protection of the Marine Environment from Pollution and the 1999 Protocol on Land-Based Sources of Marine Pollution[45] to the 1983 Cartagena Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region.

In the case of several UNEP 'Regional Seas' Programmes, Action Plans have been developed and adopted under the applicable conventional framework to address LBS. For example, the Parties to the 1986 Convention on the Protection of the Natural Resources and Environment in the South Pacific (SPREP)[46] adopted a 1991-1995 Action Plan for Managing the Environment of the South Pacific Region, which contained priority objectives related to LBS including coastal zone management, waste management and water treatment. However, in those regions where most plastic pollution currently enters the marine environment[47] there has been a marked lack of progress. For example, under none of the three UNEP Regional Seas Programmes adopted for Africa (West and Central African Region; Eastern African Region; and Red Sea and Gulf of Aden Region) have specific legal instruments addressing LBS been developed. Neither have any been introduced under the two Regional Seas programmes adopted for the East Asian Sea and the South Asian Sea.

Reluctance to adopt international commitments regarding LBS and poor implementation of measures once adopted is usually attributed to a lack of resources and the failure of relevant instruments to providing for adequate funding and technology transfer. For example, in 1991 the UNCED PrepCom noted in relation to the recently adopted SPREP Action Plan that 'it is essential that Pacific Island countries be assisted to prevent, minimise and control LBS, and pointed to the need of funding and transfer of technology for the purpose of combatting pollution'.[48] Nevertheless, widespread noncompliance with hard and/or soft law commitments persists, notwithstanding the adoption of the GPA regime. The 2006 Report on the State of the Marine Environment produced for the Second Intergovernmental Review Meeting of the GPA concluded that

> 'Progress in dealing with the nine GPA source categories has been uneven: progress has been made in Persistent Organic Pollutants, Radioactive Substances and Oils (hydrocarbons), results are mixed in Heavy Metals and Sediment Mobilization, and conditions have worsened in Sewage, Nutrients, *Marine Litter* and Physical Alteration and Destruction of Habitats.'[49]

In relation to the problems of non-compliance and non-implementation, Kirk explains that the hard law instruments governing LBS tend towards 'action-oriented obligations', aiming at

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[43] (Quito, 22 July 1983), available at https://www.ecolex.org/details/treaty/protocol-for-the-protection-of-south-east-pacific-against-pollution-from-land-based-sources-tre-000768/
[44] (Kuwait, 21 February 1990), available at https://www.ecolex.org/details/treaty/protocol-for-the-protection-of-the-marine-environment-against-pollution-from-land-based-sources-tre-001129/
[45] (6 October 1999), available at http://cep.unep.org/repcar/lbs-protocol-en.pdf
[46] (Nouméa, 24 November 1986), available at https://www.ecolex.org/details/treaty/convention-for-the-protection-of-the-natural-resources-and-environment-of-the-south-pacific-region-tre-000892/
[47] See *infra*, n. 55.
[48] Nollkaemper, *supra*, n. 26, at 8-9.
[49] UN Doc. UNEP/GPA/IGR.2/7 (23 October 2006), emphasis added.

'the promotion of appropriate action by states as opposed to the attainment of particular standards', so that 'the precise measures that states need to take to meet their obligations may be unclear and the time frames in which such obligations are to be met may be equally unclear if not nonexistent'.[50] In addition, she characterises the relevant soft law instruments as 'lacking persuasiveness'.[51] Nevertheless, on the basis of three in-depth case studies,[52] she argues that the legitimacy of the general LBS regime appears to be growing as States 'actively engage in implementation, capacity building, reviews of implementation, and revision of recommendations, as appropriate'.[53] In a more recent analysis, Kirk (writing with another) concludes quite emphatically that current measures, adopted under individual treaties and soft-law instruments are inadequate.[54] Thus, having regard to the broader socio-economic context, including the increasing concern of the public, industry and governments, and greater understanding of the regulatory challenges of the 'Anthropocene', these authors 'point to the appropriateness of developing a treaty on oil-based plastics at this point in time'. However, TEL approaches can clearly play a role in creating the conditions for the agreement and ultimate successful implementation of any such treaty regime.

International Water Resources / Watercourses Law

A widely publicised 2017 study by scientists at the Helmholtz Centre for Environmental Research (UFZ)[55] has for the first time analysed the primary route by which plastic waste enters the oceans and found that the vast majority is carried by major rivers. This study concludes that as much as 90 percent of the global input of plastic into the sea is due to 10 major river systems, eight in Asia (the Ganges, Indus, Yellow, Yangtze, Haihe, Pearl, Mekong and Amur) and two in Africa (the Nile and the Niger). Commentators have long suspected as much and Nollkaemper describes it as a 'truism that prevention of pollution of the marine environment requires prevention of pollution of international watercourses that flow into the sea',[56] an observation borne out by the fact that six of the 10 river systems identified above are transboundary (the Ganges, Indus, Mekong, Amur, Nile and Niger). Therefore, the body of rules that comprise international water law, which is increasing articulated to incorporate extensive and elaborate environmental and ecosystems obligations,[57] might be expected to play a key role in addressing MPP.

The reticence of States to take meaningful measures to implement Articles 207 and 213 of UNCLOS provided the backdrop to the work of the International Law Commission (ILC) in

[50] E.A. Kirk, 'Noncompliance and the Development of Regimes Addressing Marine Pollution from Land-Based Sources', (2008) 39 *Ocean Development & International Law* 235-256, at 236.
[51] *Ibid.*
[52] Including the Baltic Sea Regional Programme, the Global Programme of Action Coalition for the Gulf of Maine, and the Canadian National Programme of Action.
[53] *Supra*, n. 50, at 236-237.
[54] Kirk and Poppattanachai, *supra*, n. 7, at 233.
[55] Published as C. Schmidt, T. Krauth and S. Wagner, 'Export of Plastic Debris by Rivers into the Sea', (2017) *Environmental Science and Technology* 12246-12253. See also, L.C.M. Lebreton *et al*, 'River plastic emissions to the world's oceans', *Nature Communications* (7 June 2017).
[56] A. Nollkaemper, 'Legal Protection of the Marine Environment from Pollution of International Watercourses', (1993) 26/6 *Marine Pollution Bulletin* 298, at 298.
[57] See generally, O. McIntyre, *Environmental Protection of International Watercourses under International Law* (Ashgate, Aldershot, 2007).

developing draft articles[58] which would eventually form the basis of the 1997 UN Watercourses Convention (UNWC),[59] the first globally applicable binding instrument in the field, which is also widely regarded as indicative of the situation in customary international law.[60] In 1991, the Commission first adopted the text of what now constitutes Article 23 of the Convention, requiring that

> 'Watercourse States shall, individually and, where appropriate, in cooperation with other States, take all measures with respect to an international watercourse that are necessary to protect and preserve the marine environment, including estuaries, taking into account generally accepted international rules and standards.'

Article 23 of the UNWC is located within Part IV of the Convention, which includes the ecosystem protection obligations of watercourse States, and might, therefore, be regarded as an acknowledgement of the interconnectedness amongst the freshwater and marine media and their environmental problems. It amounts to a formal recognition, within the framework of general international freshwater resources law, of 'the increasingly serious problem of pollution that is transported into the marine environment by international watercourses'[61] and a reaffirmation of obligations which, though normatively weak, had been recognised in international marine environmental law for many years.[62] As with the rest of Part IV, Article 23 creates a due diligence obligation for watercourse States, requiring them individually or, where appropriate jointly, 'to take all of the necessary measures of which they are capable, financially and technologically'. Such action is to be taken 'on an equitable basis'[63] and, given the interlinkage with Articles 20-22, one may assume that the precautionary principle applies.[64] What sets Article 23 apart, however, from the other environmental obligations routinely set out in water resources conventions is the fact that it is not restricted to the prevention of harm to other watercourse States, but embodies the more communitarian interest of all States in the protection of the wider marine environment.

In addition, marine pollution conventions may directly impose obligations upon States in relation to the management of international rivers. For example, the 1992 OSPAR Convention on the Protection of the Marine Environment of the North-East Atlantic[65] expressly requires coastal State parties, which are also riparians of the Rhine, such as France and Germany, to reduce discharges into the Rhine, which would eventually reach the North Sea. Though this requirement, found in Article 2(1) of Annex I to the Convention, does not create a new obligation for such States, it clarifies the nature of their existing duties in respect

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[58] ILC, Report of the International Law Commission on the Work of its Forty-Sixth Session, UN GAOR 49th Sess., Suppl. No. 10, UN Doc. A/49/10 (1994).

[59] United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses, (1997) ILM 719.

[60] McIntyre, supra, n. 57, at 2.

[61] See ILC commentary to the draft articles, ILC, *Report of the International Law Commission on the Work of its Forty-Sixth Session*, II(2) *Yearbook of the International Law Commission* (1994), at 124. It has been estimated that more than 80 percent of the pollution entering the marine environment originates from land-based sources, *see* S. Burchi, *International Legal Aspects of Pollution of the Sea from Rivers*, (1977) 3, Italian Yearbook of International Law 115; A.E. Boyle, *The Law of the Sea and International Watercourses: An Emerging Cycle*, (1990) 14, *Marine Policy* 151.

[62] *Supra*, n. 23, n. 24 and n. 28.

[63] ILC commentary, *supra*, n. 61, at 124.

[64] *See* A. Tanzi and M. Arcari, The United Nations Convention on the Law of International Watercourses (2001, Kluwer Law International, Dordrecht), at 276.

[65] (1993) 32 ILM 1072, *supra*, n. 23.

of LBS pollution.[66] Similarly, discharges by Romania and Bulgaria into the Danube would be covered by the obligations imposed under the 1992 Bucharest Convention on the Protection of the Black Sea against Pollution and its Protocol on Pollution from Land-Based Sources.[67]

The 1985 Montreal Guidelines had highlighted the duties owed by watercourse States, including landlocked States, in respect of LBS pollution by declaring that they 'should co-operate in preventing, reducing and controlling pollution of the marine environment originating or partially originating from releases within their territory into or reaching water basins or watercourses flowing into the marine environment'.[68] The Guidelines also stressed the need for cooperation amongst watercourse States in transboundary basins.[69] The GPA, which succeeds the Montreal Guidelines and represents the most highly developed international instrument in the field despite its soft-law character, likewise calls for cooperation between watercourse States and the marine regions where the watercourses terminate. Significantly, in terms of achieving consistency between the requirements of international water resources and marine environmental law, the GPA encourages adoption of an ecosystem approach and, even more specifically, an integrated coastal and river basin management approach (ICARM).[70]

The only other globally applicable water resources convention, the 1992 UNECE (Helsinki) Water Convention,[71] specifically refers in its Preamble to controlling 'pollution of the marine environment, in particular coastal areas, from land-based sources', while the Convention text expressly directs States to develop policies, programmes and strategies 'aimed at the … protection of the environment of transboundary waters or the environment influenced by such waters, including the marine environment'.[72] Rather more specifically, Article 9(4) directs that the joint basin institutions that basin States are required to establish under the Water Convention[73] 'shall invite joint bodies, established by coastal States for the protection of the marine environment directly affected by transboundary impact, to cooperate in order to harmonize their work and to prevent, control and reduce the transboundary impact'. It is perfectly clear, therefore, that the general duty to cooperate envisaged under the Water

[66] See Nollkaemper, *supra*, n. 56, at 298.
[67] (1993) 32 ILM 1110, Article VII.
[68] UNEP, *supra*, n. 29, at 77-78. See further, Finska and Howden, *supra*, n. 31, at 247.
[69] *Ibid.* at 78.
[70] UNEP, *Combatting Marine Plastic Litter and Microplastics: An Assessment of the Effectiveness of Relevant International, Regional and Sub-regional Governance Strategies and Approaches*, UN Doc. UNEP/EA.3/INF/5 (5 Octiber 2017), at 49. See Finska and Howden, *supra*, n. 31, at 247.
[71] Convention on the Protection and Use of Transboundary Watercourses and International Lakes, (1992) 31 ILM 1312. Though originally a regional instrument, the Water Convention was opened to global membership by a 2004 amendment which entered into force in 2013, UN Doc. ECE/MP.WAT/14 (12 January 2004).
[72] Article 2(6). See further, A. Tanzi (ed.), *Guide to Implementing the Water Convention* (UNECE, 2013), at 14.
[73] Under Article 9(2).

Convention[74] includes inter-State cooperation regarding the measures necessary to address LBS pollution.[75]
Though they are as yet rare, examples exist of just such cooperation taking place between a river basin commission (RBO) and a commission responsible for protection of a regional marine area. Pursuant to the objective of the Danube Convention that the Contracting Parties 'shall endeavour to contribute to reducing the pollution loads of the Black Sea from sources in the [Danube] catchment area',[76] the Danube Commission and the Black Sea Commission have agreed a Memorandum of Understanding (MoU) to frame such cooperation, and have established an *ad hoc* Danube / Black Sea Joint Technical Group to implement the MoU.[77]
In a comprehensive study of the interactions between regional seas organisations and watercourse commissions, Finska and Howden persuasively conclude that such measures 'to establish more elaborate technical and scientific cooperation' offer one means of addressing 'both aspects of legal fragmentation and global State interdependency … when seeking a solution to the problem of marine plastic pollution.'[78]

However, the same commentators concede that, generally, 'there is hardly any interaction between the legal sub-fields of international water law and marine environmental law', which 'reflects the absence of a … shared global understanding of the environmental threat from plastic pollution and the universal responsibility this generates also for landlocked States'.[79]
It must be remembered that not all major international river basins benefit from the existence of a river basin organisation[80] and, as seen above, several regional seas programmes have not adopted specific legal instruments to address LBS pollution, including those for Africa and for the East and South Asian Seas – global 'hotspots' for the introduction of MPP by major transboundary rivers.

International Environmental Law

Attempts are now being made to address the problem of plastic pollution under a range of diverse multilateral environmental agreements (MEAs), including the Basel Convention,[81]

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[74] Article 2(6) provides in full:

> 'The Riparian Parties shall cooperate on the basis of equality and reciprocity, in particular through bilateral and multilateral agreements, in order to develop harmonized policies, programmes and strategies covering the relevant catchment areas, or parts thereof, aimed at the prevention, control and reduction of transboundary impact and aimed at the protection of the environment of transboundary waters *or the environment influenced by such waters, including the marine environment*' (emphasis added).

[75] See further, Tanzi, *supra*, n. 72, at 73; Finska and Howden, *supra*, n. 31, at 249.
[76] Convention on Cooperation for the Protection and Sustainable Use of the Danube River, (1994) 5 *Yearbook of International Environmental Law*, Doc. 16, Article 2(1).
[77] Memorandum of Understanding between the International Commission for the Protection of the Black Sea and the International Commission for the Protection of the Danube River on Common Strategic Goals (2001).
[78] *Supra*, n. 31, at 253.
[79] *Ibid.*, at 245.
[80] Only 16 out of 57 international rivers in Asia are covered by a RBO, while only 20 out of 58 international rivers in Africa are covered. See S. Schmeier, *Governing International Watercourses: River Basin Organisations and the sustainable governance of internationally shared rivers and lakes* (Routledge, Abingdon, 20013), at 66.
[81] Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, (1989) 28 ILM 657.

the Convention on Biological Diversity[82] and the Stockholm Convention on Persistent Organic Pollutants.[83] Under the Basel Convention, the parties have adopted Technical Guidelines for the Identification and Environmentally Sound Management of Plastic Wastes and for their Disposal,[84] while the specific problem of MPP was included in the 2018-19 work programme of the Basel Convention's Open-ended Working Group, with a view to identifying options for further action.[85] A range of options have already been identified[86] and proposals have been put forward to amend annexes to the Convention listing "hazardous wastes", in order that certain plastic wastes might become subject to controls thereunder.[87] Under the Convention on Biological Diversity, the parties have adopted guidance on preventing and mitigating the impacts of marine litter on marine and coastal biodiversity and habitats.[88] While the Stockholm Convention aims to eliminate or restrict the production and use of persistent organic pollutants, certain chemicals listed for control in its Annexes are used in the production of certain plastics, including polychlorinated biphenyls (PCBs), brominated diphenyl ethers and perfluorooctane sulfonic acid (PFOS).[89] In addition, the UN Fish Stocks Agreement includes obligations for States in relation to lost and abandoned fishing gear,[90] while the parties to the Bonn Convention on Migratory Species (CMS)[91] have adopted a number of resolutions addressing marine debris, including plastic waste, microplastics and abandoned fishing gear.[92]

A Complex Legal Framework

Therefore, the framework for addressing MPP in international law is beset with a range of difficulties. Not alone is it legally fragmented but, having developed in a piece-meal fashion in response to the concerns arising in relation to particular sectoral activities and environmental media and impacts, it is also incomplete leaving many geographical and regulatory lacunae. Even where international rules have been elaborated, more often than not they tend to be normatively weak and uncertain, due in large part to the very onerous

[82] (1992) 31 ILM 818.
[83] (2001) 40 ILM 532.
[84] Decision BC-VI/21, UN Doc. UNEP/CHW.6/21 (23 August 2002). See Kirk and Popattanachai, *supra*, n. 7, at 226. See further, K. Raubenheimer and A. McIlgorm, 'Can the Basel and Stockholm Conventions Provide a Global Framework to Reduce the Impact of Marine Plastic Litter?', (2018) 96 *Marine Policy* 285.
[85] Decision BC-13/17, UN Doc. UNEP/CHW.13/28 (18 August 2017).
[86] UNEP, Report on Possible Options Available under the Basel Convention to Further Address Marine Plastic Litter and Microplastics, UN Doc. UNEP/CHW/OEWG.11/INF/22 (8 May 2018). See G. Carlini and K. Kleine, 'Advancing the international regulation of plastic pollution beyond the United Nations Environment Assembly resolution on litter and microplastics', (2018) 27 *Review of European, Comparative and International Environmental Law* 234-244, at 236.
[87] UNEP, Application by Norway to Amend Annex IX to the Basel Convention and Addendum, UN Doc. UNEP/CHW/OEWG.11/INF/36 (9 August 2018). See Carlini and Kleine, *ibid.*
[88] Decision XIII/10, Addressing Impacts of Marine Debris and Anthropogenic Underwater Noise on Marine and Coastal Biodiversity, UN Doc. CBD/COP/DEC/XIII/10 (10 December 2016). See K. Raubenheimer, A. McIlgorm and N. Oral, 'Towards an improved international framework to govern the life cycle of plastics', (2018) 27 *Review of European, Comparative and International Environmental Law* 210-221, at 213-214.
[89] Raubenheimer, McIlgorm and Oral, *ibid.*, at 213. See further, Raubenheimer and McIlgorm, *supra*, n. 84.
[90] UN Agreement Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, (1995) 34 ILM 1542. See Raubenheimer, McIlgorm and Oral, *ibid.*, at 214.
[91] Convention on the Conservation of Migratory Species of Wild Animals, (1980) 19 ILM 15.
[92] CMS Resolution 11.30, Management of Marine Debris, UN Doc. UNEP/CMS/Res.11.30 (November 2014); CMS Resolution 12.20, Management of Marine Debris, UN Doc. UNEP/CMS/Res.12.20 (October 2017). See Raubenheimer, McIlgorm and Oral, *supra*, n. 88, at 214

obligations they would otherwise imply for States. Noting the 'uncertainty inherent in an action-oriented regime where the precise nature of the obligation incumbent on states may be unclear', Kirk pointedly observes that the fact that 'the steps needed to tackle this type of pollution [are] hard to define, makes the likelihood of flawed efforts to implement and comply with international obligations high'.[93] Not only are such steps difficult to define, they are also likely to prove extremely expensive, with Nollkaemper noting that 'the main challenge is to find funding for the necessary programmes and measures, such as building, operating and maintaining sewage lines and plants'.[94] The international community was never likely to agree binding international obligations demanding that all States immediately invest in the development of the necessary "up-stream" environmental infrastructure in such areas as waste management and water treatment.

While some commentators advocate development of a global treaty on oil-based plastics in the light of widespread public concern and the ever-increasing availability of alternatives,[95] various of the forms of informal regulatory activity commonly associated with the TEL phenomenon can play a role in creating the change in culture, and thereby in the market conditions for certain plastic products, required for the success of any such treaty regime. The GPA suggests as much, stressing the importance of broad and inclusive stakeholder collaboration to tackle LBS pollution, and thus the utility of adopting of a range of measures, both formal and informal in terms of their legal character. For example, it exhorts States to

> 'ensure close collaboration between the national and regional focal points and regional economic groupings, other relevant regional and international organizations, development banks and regional rivers authorities/commissions, in the development and implementation of regional programmes of action'.[96]

More particularly, the Global Partnership on Marine Litter (GPML), one of three global partnerships established under the GPA,[97] includes, in addition to inter-governmental organisations (IGOs) and States, a number of key non-governmental organisations (NGOs) and representatives of the private sector. Participating NGOs include the Natural Resources Defence Council, the Plastics Disclosure Project, and the Plastics Pollution Coalition, while the private sector participants include a range of manufacturers and industry actors.

European Union Policy and Law

While EU waste management law has long been concerned with certain forms of plastic waste[98] and EU marine environmental law includes some measures for the monitoring and reduction of marine litter,[99] the EU has recently started to address the problem of plastic pollution in a more integrated and holistic manner with the European Commission's adoption

[93] *Supra*, n. 50, at 238.
[94] *Supra*, n. 26, at 8.
[95] Notably, Kirk and Popattanachai, *supra*, n. 7, at 233.
[96] *Supra*, n. 38, at 18.
[97] https://www.unenvironment.org/explore-topics/oceans-seas/what-we-do/addressing-land-based-pollution/global-partnership-marine
[98] For example Directive (EU) 2015/720 amended Directive 94/62/EC on packaging and packaging waste, as regards the consumption of lightweight plastic carrier bags.
[99] Directive 2008/56/EC establishing a framework for Community action in the field of marine environmental policy.

in January 2018 of the European Strategy for Plastics in a Circular Economy.[100] The Strategy takes a multi-faceted approach and aims at promoting improvements in the design and production of plastics to ensure greater recycling and reuse. For example, the EU intends to invest heavily in research and innovation in order to develop less hazardous and more recyclable plastic materials and more efficient recycling processes, and to boost demand for recycled plastics. It also plans to explore the potential role of extended producer responsibility schemes as a means of funding improved separation and collection of plastic wastes.

Proposed new regulatory measures include:

- revision of the Packaging and Packaging Waste Directive to ensure recycling and reuse of plastics;
- new eco-design measures to support recyclability of plastics;
- restrictions under the REACH Regulation on oxo-plastics and intentionally added microplastics;[101]
- adoption of a directive on single-use plastics;[102]
- improved management of exported plastic waste under the EU Waste Shipment Regulation; and
- review of the Construction Products Regulation and the End-of-Life Vehicles Directive.

Specific measures directly relevant to the MPP problem include

- measures for reducing the loss or abandonment of fishing gear at sea and plastic loss from aquaculture;
- legislative requirements for port reception facilities for waste from ships;
- improved monitoring and mapping of marine litter; and
- renewed engagement on plastics and marine litter in for a such as the UN, G7, G20, the MARPOL Convention and regional seas conventions.

Apart from a few relatively straightforward and rapidly implementable regulatory measures, however, it seems that the Commission aims at addressing the environmental consequences of plastics in the medium to longer-term. For example, the Strategy notes that '[g]oing forward, there are also significant prospects for developing an innovative circular plastics industry worldwide'.[103] Clearly, such an industry will not develop overnight.

The Commission readily acknowledges the global nature of the MPP problem and the resulting complexity of the legal challenges involved, suggesting that it will 'continue to make use of policy dialogues on environment and industry and dialogues under free trade agreements, and to actively cooperate in Regional Sea Conventions', as well as participating

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[100] COM(2018) 28 final, 16 January 2018, available at https://eur-lex.europa.eu/resource.html?uri=cellar:2df5d1d2-fac7-11e7-b8f5-01aa75ed71a1.0001.02/DOC_1&format=PDF

[101] See further, T.J de Römph and G. Van Calster, 'REACH in a circular economy: The obstacles for plastics recyclers and regulators', (2018) 27 *Review of European, Comparative and International Environmental Law* 267-277.

[102] In fact, the Single-Use Plastics Directive (SUPD), Directive 2019/904 on the reduction of the impact of certain plastic products on the environment, was adopted on 5 June 2019 and will eventually serve to restrict a range of items (plastic cutlery, plastic plates, straws, cotton bud sticks, polystyrene cups, balloon sticks, *etc*.) representing 70 percent of all marine litter. See further, N. O'Meara, 'Tackling the Plastics Pollution Crisis through the EU Single-Use Plastics Ditrective: context, scope and implementation challenges', published in this special issue.

[103] *Supra*, n. 100, at 16.

in global initiatives 'to work on international responses for combatting plastic marine pollution and microplastics'.[104] The Strategy recognises the geographical and cross-sectoral breadth of the problem by committing to 'examine possible ways to take action to reduce plastic pollution … in major world river basins, as a vast proportion of waste plastic is carried by rivers before it reaches the seas', whilst also facilitating cooperation with the EU's 'neighbours along the Caribbean Sea, the Indian, Pacific and Atlantic Oceans across different fields, including in waste management and recycling'. While laudable in principle, such aspirational goals provide little guidance as to which globally applicable regulatory measures might actually be attainable, and thus hint at the utility of innovative, and often informal and voluntary, regulatory schemes and standards which can be truly transnational in their application and global in their effect. One can discern tacit recognition of the role of such hybrid transnational frameworks in the text of the EU Strategy.

It is significant that throughout the 2018 Strategy, the Commission envisages a significant role for voluntary action by the plastics industry, having asked sector stakeholders to make voluntary pledges to boost the uptake of recycled plastics. The EU Environment Commissioner reported last year that the Commission had received 60 such pledges by the end of October 2018, but also that 'we are falling short of the target of 10 million tonnes of recycled material in new products'.[105] Indeed, the Strategy itself acknowledges the need to stimulate the market for more sustainable plastics and stresses the role of certification and labelling schemes in this regard.[106] It also notes the global nature of the value chains involved in the production and supply of plastics and the management of plastic waste streams,[107] which further suggests a role for informal and voluntary transnational regulatory measures which can harness the environmental concerns of rich-world consumers and the market forces unleashed thereby. Indeed, the broad range of innovative regulatory measures proposed under Annexes I and II of the EU Strategy include:

- quality standards for sorted plastics waste and recycled plastics;
- an Ecolabel and Green Public Procurement;
- harmonised rules on defining and labelling compostable and biodegradable plastics;
- a life-cycle analysis to identify conditions where the use of compostable and biodegradable plastics is beneficial;
- a certification scheme along the plastic supply chain in respect of microplastics and plastic pellet spillage;

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[104] *Ibid.*

[105] K. Vella, 'Plastics in a circular economy: the European approach', *Government Europa* (4 February 2019), available at https://www.governmenteuropa.eu/plastics-in-a-circular-economy/91767/

[106] For example, the Strategy, *supra*, n. 100, states, at 12, that:

> 'It is important to ensure that consumers are provided with clear and correct information, and to make sure that biodegradable plastics are not put forward as a solution to littering. This can be achieved by clarifying which plastics can be labelled 'compostable' or 'biodegradable' and how they should be handled after use. Applications with clear environmental benefits should be identified and in those cases the Commission will consider measures to stimulate innovation and drive market developments in the right direction. To allow adequate sorting and avoid false environmental claims, the Commission will propose harmonised rules for defining and labelling compostable and biodegradable plastics. It will also develop lifecycle assessment to identify the conditions under which the use of biodegradable or compostable plastics is beneficial, and the criteria for such applications.'

[107] The Strategy notes, *ibid*, at 16, that:

> 'plastics consumption per capita is growing quickly, most notably in Asia. Plastics value chains are developed across entire continents and plastic waste is traded internationally: in the EU about half the plastic waste collected is sent abroad, where uncertainty remains over its treatment.'

- work on life-cycle impacts of alternative feedstocks for plastics production;
- support to sustainable consumption and production in East and South-East Asia with a view to reducing plastic waste and marine litter;
- international industry standards on sorted plastic waste and recycled plastics;
- a certification scheme for recycling plants in the EU and in third countries;
- voluntary national commitments regarding the uptake of recycled plastics;
- voluntary industry commitments regarding the uptake of recycled plastics;
- concrete industry steps to improve dialogue and cooperation across the value chain, in particular on material and product design aspects; and
- cross-industry agreements to reduce the release of microplastics in the environment.

It is immediately apparent that the broad and inclusive engagement of diverse stakeholders required in order to pursue and progress much of the normative elaboration envisaged under the EU Strategy might be more effectively achieved, at least in the first instance, using the kind of informal regulatory systems which characterise modern transnational environmental governance. Such systems, which commonly fill lacunae and address deficiencies in traditional systems of formal, State-centred environmental law, tend to be more responsive, flexible and accessible and to apply beyond jurisdictional borders to long and complex commercial value chains.[108] It is worth noting that the proposal for the recently adopted SUPD Directive expressly links such measures to tackle MPP to the UN Sustainable Development Goals (SDGs), particularly SDG 12 (responsible consumption and production) and SDG 14 (life below water),[109] as the SDGs themselves constitute an innovative and formally non-binding creature of global environmental governance.[110]

National Law

Of course, environmental law at the national level may also suffer from fragmentation, with distinct legislative codes applying to pollution prevention or abatement in different environmental media, to land-use planning and to a range of potentially damaging activities, including, for example, waste management.[111] The legislative frameworks of EU Member States might also be out of step with emerging EU measures. The EU Strategy notes that a number have unilaterally moved ahead of EU policy-makers, with some, for example, having already introduced highly effective deposit schemes for PET bottles, which employ an approach based on extended producer responsibility (EPR).[112] Taking Ireland as an example,

[108] On informal transnational environmental regulation, see further, O. McIntyre, 'Transnational environmental regulation and the normativisation of global environmental governance standards: The promise of order from chaos?', (2018) 10/2 *Journal of Property, Planning and Environmental Law* 92-112.
[109] COM(2018) 340 final (28 May 2018), available at http://ec.europa.eu/environment/circular-economy/pdf/single-use_plastics_proposal.pdf
[110] On the legal nature of the SDGs, see further D. French and L.J. Kotze (eds.), *Sustainable Development Goals: Law, Theory and Implementation* (Edward Elgar, Cheltenham, 2018).
[111] Commentators have analysed environmental law fragmentation in a number national jurisdictions, including South Africa and the USA. See L.J. Kotzé, '*A Legal Framework for Integrated Environmental Governance in South Africa and the North-West Province*' (Wolf Legal Publishers, 2007) and D. Owen, 'Mapping, Modelling, and the Fragmentation of Environmental Law', (2013) 1 *Utah Law Review* 219. See further, Platjouw, *supra*, n. 5, at 101-103, who outlines efforts to integrate and harmonise piecemeal national environmental legislation is such places as the Netherlands, Sweden and New Zealand.
[112] These include Germany, Denmark, Finland, the Netherlands and Estonia, which reached an average collection rate for PET of 94% in 2014. See EU Strategy, *supra*, n. 100, at 11.

on 20 February 2020 it brought into force new legislation prohibiting the manufacture or placing on the market of certain products containing microbeads, and imposing restrictions in relation to their disposal.[113] At the same time certain local authorities are moving ahead with measures they deem necessary to address the general problem of plastic litter. For example, in February 2020 Dun Laoghaire-Rathdown County Council, one of the local authorities in the greater Dublin area, announced proposals to publish draft by-laws imposing fines of up to €500 on take-away food outlets, supermarkets and other food businesses supplying single-use plastics to customers.[114] The items to be banned would include plastic take-away containers, cups, lids, straws, utensils, bottles and other packaging, thus requiring that they be replaced by biodegradable alternatives.

Global Environmental Governance Standards

It would appear that recent publicity regarding the environmental impacts of MPP have had a significant influence upon consumer sentiment in rich-world countries, thus creating precisely the conditions conducive to the emergence and effective operation of TEL governance regimes. For example, 2018 market research found that a significant majority of British shoppers surveyed (62%) were concerned with the need to reduce plastic packaging and to use recyclable materials.[115] The survey found that such concerns stem from growing public consciousness about the scale of plastic pollution in the oceans. Popular movements are proliferating, many of which are global in terms of their membership and activities, which advocate for a move away from plastics and for a future free of plastic pollution.[116] However, the problem remains that in many parts of the world there is a critical lack of regulatory and technical capacity to address the problem of plastic pollution.[117] A cursory examination of the list of 10 major watercourses to which the lion's share of LBS pollution can be attributed,[118] as well as consideration of the nine 'source categories' listed under the GPA,[119] immediately suggests that the roots of the problem may lie in inadequate, ineffective or non-existent national regulatory regimes relating to waste management, wastewater treatment and agricultural practices. This in turn suggests that effective action at the international level, even if it were to prove politically possible, would inevitably be highly intrusive upon the sovereignty of the source State(s), as well as very expensive to implement in practice.

UNEP, which leads the response at the inter-governmental level to the MPP problem, appears to acknowledge the potentially key role of novel and innovative governance approaches. For example, a 2018 resolution of UNEP's United Nations Environment Assembly (UNEA) on

[113] Microbeads (Prohibition) Act 2019, as commenced by the Microbeads (Prohibition) Act 2019 (Commencement) Order 2020 (SI No. 36 of 2020, 11 February 2020).
[114] *The Irish Times* (15 February 2020).
[115] S. Laville, 'Plastic waste set to beat price as UK shoppers' top concern – study', *The Guardian*, (10 September 2018), available at https://www.theguardian.com/environment/2018/sep/10/plastic-waste-set-to-beat-price-as-uk-shoppers-top-concern-study?CMP=twt_a-environment_b-gdneco
[116] Examples include: Break Free from Plastic https://www.breakfreefromplastic.org/ and Beyond Plastics https://beyondplastics.org/ Plastic Oceans UK https://plasticoceans.uk/ See further, S. Buranyi, 'The plastic backlash: what's behind our sudden rage – and will it make a difference?', *The Guardian* (13 November 2018).
[117] See, for example, L. Akenji and M. Bengtsson, *Circular Economy and Plastics: A Gap-Analysis in ASEAN Member States* (ASEAN, October 2019), available at https://www.iges.or.jp/en/pub/ce-plastics/en
[118] *Supra*, n. 55.
[119] Including sewage, persistent organic pollutants, radioactive substances, heavy metals, oils (hydrocarbons), nutrients, sediment mobilization, litter, and physical alteration and destruction of habitat.

the subject urges and invites 'all actors', including non-State actors, 'to step up actions to "by 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris".'[120] More pointedly, Article 5 and 6 of Resolution 3/7 record that the UNEA:

> 5. *Recognizes* that the private sector and civil society, including non-governmental organizations, can contribute significantly to preventing and reducing marine litter and microplastics, including through information-sharing, awareness raising, developing new environmentally sound technologies, capacity-building and clean-up actions, and encourages cooperation between Governments, regional bodies, the private sector and civil society ….
>
> 6. *Notes* the important role of key sectors such as plastic producers, retailers and the consumer goods industry, as well as importers, packaging firms and transport firms, to contribute to the reduction of marine litter, including microplastics, arising from their products and activities, as well as to provide information on the impacts arising from their products throughout their life cycle, and encourages innovative approaches such as the use of extended producer responsibility schemes, container deposit schemes and other initiatives;

An analysis of voluntary commitments targeting marine litter and microplastics published by UNEP in December 2018 and presented at UNEA 4 in March 2019 concludes unequivocally that 'the importance of civil society, foundations and non-governmental organizations in tackling marine litter and plastics is growing, along with that of several global businesses committed to dealing more effectively with plastics in their supply chains'.[121] Resolution 3/7 further directs that an open-ended *ad hoc* expert group be convened, primarily to identify and examine the feasibility and effectiveness of 'the range of national, regional and international response options, *including actions and innovative approaches, and voluntary and legally binding governance strategies and approaches*'.[122] This Group has now embarked on a major 'stocktaking' exercise to survey and assess existing regulatory activities with a view to informing policy options across three categories of actions (normative, evidential and capacity-building) and four cross-cutting themes (life cycle phase, environmental zone, geographic range and reporting/compliance), the second phase of which (running from December 2019 to May 2020) will focus on 'global and regional instruments, international organizations, non-governmental organizations and other regular contributors'.[123]

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[120] UNEA Resolution 3/7 Marine Litter and Microplastics, UN Doc. UNEP/EA.3/Res.7, Articles. 2 and 4, referring to SDG 14 (oceans, seas and marine resources) and, specifically, Target 14.1. Actions expressly listed under Article 4 include, *inter alia*,

> 'To cooperate to establish common definitions and harmonized standards and methodologies for the measurement and monitoring of marine litter and microplastics; …
>
> To develop and implement action plans for preventing marine litter and the discharge of microplastics; encouraging resource efficiency, and increasing collection and recycling rates of plastic waste and redesign and reuse of products and materials; and avoiding the unnecessary use of plastic and plastic containing chemicals of particular concern where appropriate;'.

[121] UNEP/EA.4/11 (21 December 2018), at para. 26.

[122] *Supra*, n. 120, Article 10 (emphasis added).

[123] Pursuant to UNEA Resolution 4/6, UN Doc. UNEP/EA.4/Res.3. See C. Benson Wahlén, 'Expert Group Makes Progress on Actions for Stocktaking on Marine Plastic Litter' (IISD, *SDG Knowledge Hub*, 29 November 2019): https://sdg.iisd.org/news/expert-group-makes-progress-on-actions-for-stocktaking-on-marine-plastic-litter/

Such recognition of the role of a broad range of interested actors, and of innovative approaches to governance of the MPP problem, appears to amount to express acknowledgment at the inter-governmental level of the limitations of formal legal frameworks in regulating global transnational value chains. This calls to mind the core function of the various forms of innovative regulatory activity commonly grouped under the banner of the global environmental law phenomenon. Commenting upon these new forms and functions of environmental norms, Boisson de Chazournes notes that

> 'in the field of the environment, the law takes on new roles … it incites, accompanies and guides expected behavioural changes, it legitimizes new situations, and contributes to the elaboration of a politically accepted language. All normative means are useful to this end …'.[124]

As regards the role of such TEL activity in supporting the elaboration of formal international rules for MPP, international lawyers have long recognised that various forms of soft-law standards and approaches, which can circumvent the diplomatic hurdles raised by reticent State actors,

> 'have penetrated gradually into contemporary State practice. In certain cases these guidelines bring an important contribution to the definition of international standards on the basis of which the due diligence to be expected from "well-governed" modern States can be established'.[125]

Further, the co-option of such diverse non-traditional forms of normative activity enables international environmental law-making to engage with non-State actors and to impact upon fields of economic and administrative activity which would otherwise remain formally out of bounds.[126] Esty emphasises the role of multi-tier governance in providing experiential learning to inform the development of formal legal regimes at any level of administration, '[b]y generating competing policy perspectives, assumptions, analyses, options, and assessments, global governance institutions provide a supplemental set of policymaking laboratories'.[127] Regarding national-level law-making more particularly, he notes that '[s]upranational governance also strengthens national rulemaking and provides a safety net to guard against the possibility of policy failure at the national level' …

> 'By promoting careful consideration of policy choices, providing a mechanism for benchmarking national policy results, and forcing decision-makers to justify their actions, a functional global governance structure adds depth to the system of checks and balances, thereby limiting national governmental mistakes and improving social welfare.'[128]

Yet other commentators point to the broad public participation that is inherent to this new system of governance, as it 'no longer involves a linear, hierarchical model of law- and policy-making, but is portrayed as building on direct democracy through public participation

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[124] L. Boisson de Chazournes, 'Features and Trends in International Environmental Law', in Y. Kerbrat and S. Maljean-Dubois (eds.), *The Transformation of International Environmental Law* (Pedone & Hart, Paris, 2011) 9-24, at 10.

[125] P.M. Dupuy, 'Overview of the existing customary legal regime regarding international pollution", in D.B. Magraw (ed.), *International Law and Pollution* (University of Pennsylvania Press, Philadelphia, 1991) 61, at 62.

[126] McIntyre, *supra*, n. 9. See further, J. d'Aspremont, *Epistemic Forces in International Law: Foundational Doctrines and Techniques of International Legal Argumentation* (Edward Elgar, Cheltenham, 2015), Chapter 3: 'Law-Making'.

[127] D. Esty, 'Good Governance at the Supranational Scale: Globalizing Administrative Law', (2006) 115/7 *The Yale Law Journal* 1490-1562, at 1501-1502.

[128] *Ibid.*, at 1502.

in a polycentric, non-hierarchical, open, more accountable and more legitimate process of norm production'.[129]

One notable example of a hybrid governance initiative addressing the problem of plastic pollution is that of the new Partnership on Plastic Waste established under the Basel Convention 'to mobilise business, government, academic and civil society resources, interests and expertise to improve and promote the environmentally sound management of plastic waste at the global, regional and national levels and to prevent and minimize its generation'.[130] The Partnership's membership includes States party to the Convention, governmental bodies and agencies, non-governmental organisations, and industry and industry associations, and it includes among its core activities that of facilitating 'public-private initiatives for the prevention, minimization, collection and environmentally sound management of plastic waste'. Other multi-stakeholder initiatives include the Global Partnership on Marine Litter,[131] a coalition of international agencies, governments, NGOs, academia, private sector, civil society and individuals focused mainly on implementation of UNEP's Honolulu Strategy, which provides a global framework for prevention and management of marine debris.[132]

Similarly, the Commonwealth Clean Ocean Alliance (CCOA)[133] recognises that not all Commonwealth States are equipped to meet the challenge of addressing the negative effects of MPP and encourages those that sign up to commit to one or more of the following ambitions:

1. Ban the sale and manufacture of microbeads in rinse-off cosmetic and personal care products by 2021;
2. Significant reduction of single-use plastic carrier bags by 2021;
3. Take steps to eliminate all avoidable single use plastic waste.

Members are also requested 'to sign up to (and implement) the London Protocol, the UN Clean Seas campaign, and the Global Ghost Gear Initiative as a means of meeting their commitments under SDG 14'. Tellingly, the CCOA recognises that

> 'the problems of plastic pollution cannot be solved by government actions alone, CCOA will bring together member countries, businesses and non-governmental organisations (NGOs) from across the Commonwealth to commit to action on plastics, share best practices, leverage funding and push for global action.'

A recent example of action at the sectoral level is that of the Global Tourism Plastics Initiative, announced recently by the UNEP and the World Tourism Organisation (UNWTO), which calls on all tourism companies and destinations to take concrete actions to tackle

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[129] L. Bergkamp and S. J. Stone, 'The Trojan Horse of the Paris Agreement on Climate Change: How Multi-Level, Non-Hierarchical Governance Poses a Threat to Constitutional Government', (2015) 4 *Environmental Liability* 119-140, at 135. See further, B.G. Mattarella, 'The Influence of European and Global Administrative Law on National Administrative Acts', in E. Chiti and B.G. Mattarella (eds.), *Global Administrative Law and EU Administrative Law: Relationships, Legal Issues and Comparison* (Springer, Heidelberg, 2011) 61, at 64.

[130] http://www.basel.int/Implementation/Plasticwastes/PlasticWastePartnership/tabid/8096/Default.aspx

[131] https://www.unenvironment.org/explore-topics/oceans-seas/what-we-do/addressing-land-based-pollution/global-partnership-marine

[132] http://wedocs.unep.org/bitstream/handle/20.500.11822/10670/Honolulu%20strategy.pdf?sequence=1&isAllowed=y

[133] https://bluecharter.thecommonwealth.org/action-groups/marine-plastic-pollution/

plastic pollution and increase plastics recycling.[134] The Initiative is associated with the shift towards circularity embodied in SDG 12 (responsible consumption and production) and aims to create a set of actionable commitments intended to eliminate unnecessary plastic packaging and to support the shift from single-use plastic towards reusable alternatives by 2025. It also seeks to engage with actors all along the value chain to facilitate the collaboration and investment necessary to ensure that 100 percent of necessary plastic packaging might be reusable, recyclable or compostable.

Conclusion

While one would not suggest that the various forms of informal governance initiatives characteristic of TEL, and largely involving voluntary and non-binding commitments for all actors concerned, can substitute for formal legal frameworks, it is clear that they can do much to promote and facilitate precisely the types of action encouraged under the GPA, the key international instrument currently applying to the MPP problem.[135] There is ever greater awareness that novel and informal forms of environmental regulatory activity enjoy a complex symbiotic relationship with more traditional, formal environmental law regimes. In addition to filling regulatory lacunae and addressing the deficiencies of such regimes as regards the environmental problems associated with plastic, which are often due to the transnational character of the plastics value chain, informal regulatory schemes can promote and influence the evolution of formal legal frameworks and, in so doing, improve their responsiveness, flexibility, legitimacy and ultimate effectiveness.

[134] C. Benson Wahlén, 'Global Tourism Initiative to Reduce Plastics Pollution', (IISD, *SDG Knowledge Hub*, 4 February 2020): https://sdg.iisd.org/news/global-tourism-initiative-to-reduce-plastics-pollution/

[135] It is worth recalling that the GPA encourages States to employ appropriate regulatory measures at the national level, including, *inter alia*:

> 'economic instruments and voluntary instruments to encourage reduction in the generation of solid wastes and the use of other non-regulatory measures … raising public awareness and educational campaigns on marine litter …'.

GPA, para. 146. See Kirk and Popattanachai, *supra*, n. 7 at 224.