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Towards a New International Law of the Atmosphere?

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Preface by the Editors

The atmosphere is our planet's largest single natural resource and is vital to the survival of humankind and any life on earth. Therefore, the degradation of the atmosphere's condition has long been a matter of concern to large segments of the international community, highlighted by the current negotiations in the context of the UN Framework Convention on Climate Change (UNFCCC). In 2013, the United Nation's International Law Commission (ILC) took up this issue as part of its independent mandate for the progressive development of international law and its codification under Article 13(1) of the UN Charter and General Assembly Resolution 174(II). Several conventions regulate atmospheric and related issues, yet there is still no coherent legal framework addressing the protection of the atmosphere. The work by the ILC will be the first attempt to derive rules from the current practice of States addressing the atmosphere's protection. However, the work by the ILC is significantly complicated by the restrained scope of the topic, as the Commission deliberately decided not to deal with, inter alia, questions of liability, the polluter-pays principle, and the principle of precaution.

Abstract

Inclusion of the topic 'protection of the atmosphere' in the current work programme of the UN International Law Commission (ILC) reflects the long overdue recognition of the fact that the scope of contemporary international law for the Earth's atmosphere extends far beyond the traditional discipline of 'air law' as a synonym for airspace and air navigation law. Instead, the atmospheric commons are regulated by a 'regime complex' comprising a multitude of economic uses including global communications, pollutant emissions and diffusion, in different geographical sectors and vertical zones, in the face of different categories of risks, and addressed by a wide range of different transnational institutions. Following several earlier attempts at identifying cross-cutting legal rules and principles in this field (by, *inter alia*, the International Law Association, the UN Environment Programme, and the Institut de Droit International), the ILC has now embarked on a new codification/restatement project led by Special Rapporteur Shinya Murase – albeit hamstrung by a highly restrictive 'understanding' imposed by the Commission in 2013. This article assesses the prospects and limitations of the initial ILC reports and debates in 2014 and 2015, and potential avenues for progress in the years to come.

A. Introduction

At its 65th session in August 2013, the ILC decided to include the topic *protection of the atmosphere* in its current programme of work.[1] Indeed, as the Special Rapporteur appointed by the Commission (Professor Shinya Murase, Tokyo) had emphasized in a preliminary syllabus in 2011,[2] the atmosphere – "the Earth's largest single natural resource"[3] – is not at present subject to a comprehensive legal regime comparable to that of the second-largest resource; namely, the law of the sea. Instead, the global "atmospheric commons"[4] are

1 International Law Commission, *Report of the Commission to the General Assembly on the Work of its 65th Session*, UN Doc A/68/10 (2013), 115, para. 168 [ILC, Report of the Commission to the General Assembly on the Work of its 65th Session].

2 S. Murase, *Protection of the Atmosphere*, UN Doc ILC(LXIII)/WG/LT/INFORMAL, 2 June 2011, para. 1, reproduced as Annex B in ILC, *Report of the Commission to the General Assembly on the Work of its 63rd Session*, UN Doc A/66/10 (2011), 315-329 [Murase, Protection of the Atmosphere (Syllabus), UN Doc A/66/10 (2011)]. See also S. Murase, 'Protection of the Atmosphere and International Law: Rationale for Codification and Progressive Development', 55 *Sophia Law Review* (2012) 1, 1.

3 S. Murase, *First Report on the Protection of the Atmosphere*, UN Doc A/CN.4/667, 14 February 2014, 54, para. 84 [Murase, First Report]. See also *Declaration of the United Nations Conference on the Human Environment*, 16 June 1972, 11 ILM 1416, Principle 2: "The natural resources of the earth *including the air* [...] must be safeguarded for the benefit of present and future generations [...]"; emphasis added); and generally G. Walker, *An Ocean of Air: A Natural History of the Atmosphere* (2007).

4 R. B. Stewart & J. B. Wiener, 'The Comprehensive Approach to Global Climate Policy: Issues of Design and Practicality', 9 *Arizona Journal of International and Comparative Law* (1992) 1, 83, 83 ("the atmosphere is a global commons"); J. Vogler, *The Global Commons: A Regime Analysis* (1995), 124-151; F. Biermann, *Saving the Atmosphere: International Law, Developing Countries and Air Pollution* (1995), 8; M. S. Soroos, *The Endangered Atmosphere: Preserving a Global Commons* (1997), 17-20 & 208-235; M. S. Soroos, 'The Thin Blue Line: Preserving the Atmosphere as a Global Commons', 40 *Environment* (1998) 2, 6 & 32; S. J. Buck, *The Global Commons: An Introduction* (1998), 111-136; J. Harrison & P. Matson, 'The Atmospheric Commons', in J. Burger *et al.*, *Protecting the Commons* (2001), 219-239; J. Vogler, 'Future Directions: The Atmosphere as a Global Commons', 35 *Atmospheric Environment* (2001) 13, 2427; G. Wustlich, *Die Atmosphäre als globales Umweltgut: Rechtsfragen ihrer Bewirtschaftung im Wechselspiel von Völker-, Gemeinschafts- und nationalem Recht* (2003); J. Thornes *et al.*, 'Communicating the Value of Atmospheric Services', 17 *Meteorological Applications* (2010) 2, 243; J. Halfmann, 'Die Atmosphäre als Global Commons: Wissenschaftliche und politische Adressierung', in M. Morisse-Schilbach & J. Halfmann (eds), *Wissen, Wissenschaft und Global Commons: Forschungen zu Wissenschaft und Politik jenseits des Staates am Beispiel von Regulierung und Konstruktion globaler Gemeinschaftsgüter* (2012), 133; and M. Everard *et al.*, 'Air as a Common Good', 33 *Environmental Science and Policy* (2013), 354.

regulated by a 'regime complex',[5] comprising a multitude (some would say a patchwork) of international instruments dealing with

(a) different – and sometimes conflicting – *economic uses* of the atmosphere (*inter alia*, as a medium for aviation and radio-communications, or as a waste receptacle for pollutant substances and energy);
(b) different *geographical sector*s (such as airspace over the high seas, and 'air defence identification zones' in areas beyond national jurisdiction);
(c) different *vertical zones* (troposphere, stratosphere); and
(d) different *categories of risks* (to safety, health, environment, climate, security) addressed by different international agencies and global/regional institutions or programmes.

B. Complex of Transnational Regimes

Traditionally, *international air law* was defined as a synonym of aviation law,[6] focused on the global public order of civil and military flight by air, often to the point of simply excluding other uses of the atmosphere.[7] With the advent of

5 On this concept, see K. J. Alter & S. Meunier, 'The Politics of International Regime Complexity', 7 *Perspectives on Politics* (2009) 1, 13-24; R. O. Keohane & D. G. Victor, 'The Regime Complex for Climate Change', 9 *Perspectives on Politics* (2011) 1, 7. See also I. H. Rowland, 'Atmosphere and Outer Space', in D. Bodansky, J. Brunnée & E. Hey (eds), *The Oxford Handbook of International Environmental Law* (2007), 315, 335; S. Salinas Alcega, 'El régimen jurídico-internacional de protección de la atmósfera', in D. Loperena Rota (ed.), *La calidad del aire y la protección de la atmósfera* (2010), 27; J. L. Dunoff, 'A New Approach to Regime Interaction', in M. A. Young (ed.), *Regime Interaction in International Law: Facing Fragmentation* (2012), 136; and H. van Asselt, *The Fragmentation of Global Climate Governance: Consequences and Management of Regime Interactions* (2014), 3-4.

6 See, e.g., K. Volkmann, *Internationales Luftrecht* (1930), *passim*; F. de Visscher, 'Les conflits de lois en matière de droit aérien', 48 *Recueil des Courses de l'Académie de Droit International* (1934), 279, *passim*; J. Bentzien, 'Das internationale öffentliche Luftrecht als Teil des Völkerrechts', in M. Benkö & W. Kröll (eds), *Luft- und Weltraumrecht im 21. Jahrhundert: Liber Amicorum Karl-Heinz Böckstiegel* (2001), 3, *passim*; J. Naveau, J. M. Godfroid & P. Frühling, *Précis de droit aérien*, 2nd ed. (2006), 2; M. Schladebach, *Luftrecht* (2007), 6-7; M. Milde, *International Air Law and ICAO*, 2nd ed. (2012), 2; L. Tomas, 'Air Law', in R. Wolfrum (ed.), *The Max Planck Encyclopedia of Public International Law*, Vol. I (2012), 233. See also B. F. Havel & G. S. Sanchez, *The Principles and Practice of International Aviation Law* (2014), 227-228 (highlighting the "divergent paradigms of airspace sovereignty and the global atmosphere").

7 According to O. Riese, *Luftrecht* (1949), 11, the term was "already so firmly established that nobody would even think anymore that it might refer to the legal use of the atmosphere for other purposes, such as nitrogen production, or telecommunications through the

the 'environmental revolution' in the 1970s,[8] however, other worldwide concerns inevitably expanded the regulatory agenda, albeit not without doctrinal resistance by orthodox 'air lawyers'.[9] The paradigm shift from a 'single-use-oriented' to a 'resource-oriented' approach to the law of the atmosphere has since come to the forefront in the debate over the controversial 2011 judgment of the (European)[10] Court of Justice in the case of *Air Transport Association of America and others v. [UK] Secretary of State for Energy and Climate Change*.[11]

ether waves" (translation by the authors). Historically though, the law of wireless radio-communications had indeed been treated as an integral part of air law by a number of authors, including C. Zollmann, *Law of the Air* (1927), esp. 101-132; C. Manion, *Law of the Air: Cases and Materials* (1950); J. G. Verplaetse, *International Law in Vertical Space: Air, Outer Space, Ether* (1960), 10-13; and in the former *Air Law Review* (1930-1941). For a summary of the earlier doctrinal debate in the *Institut de Droit International* since 1906 (on the basis of reports by P. Fauchille & E. Nys), see J. C. Cooper, 'Air Law: A Field for International Thinking', 4 *Transport & Communications Review* (1951) 1, 1, reprinted in I. A. Vlasic (ed.), *Explorations in Aerospace Law: Selected Essays by John Cobb Cooper, 1946-1966* (1968), 2, 10-15 (definition excluding any "other forms of human activity" in airspace).

8 See E. M. Nicholson, *The Environmental Revolution: A Guide for the New Masters of the World* (1970).

9 See P. H. Sand, 'Internationaler Umweltschutz und neue Rechtsfragen der Atmosphärennutzung', 20 *Zeitschrift für Luftrecht und Weltraumrechtsfragen* (1971) 2, 109; and the indignated editorial response by W. Schwenk, 'Zum Begriff des Luftrechts', 20 *Zeitschrift für Luftrecht und Weltraumrechtsfragen* (1971) 4, 260, subsequently qualified in part by the new editor of the journal, K. H. Böckstiegel, in 26 *Zeitschrift für Luft- und Weltraumrecht* (1977) 2, 16566, and by W. Schwenk, 'Grenzfragen zum Luftrecht oder Luftrecht in der Defensive', 27 *Zeitschrift für Luft- und Weltraumrecht* (1978) 4, 247. See also O. Rojahn, 'Internationales öffentliches Luft- und Weltraumrecht', in E. Menzel & K. Ipsen (eds), *Völkerrecht*, 2nd ed. (1979), 419, 428 ("aviation no longer represents the sole legally relevant use of airspace, but must be integrated in a framework of new use interests worthy of protection", translation by the authors); Y. N. Maleyev, *Mezhdunarodnoe vozdushnye pravo: voprosy teorii i praktiki* [International Air Law: Principles of Theory and Practice] (1986), 24 ("diverse inequitable uses of airspace and the atmosphere are among the most serious contemporary global problems", translation by the authors); S. V. Vinogradov, *Mezhdunarodnoe pravo i okhrana atmosfery* [International Law and Protection of the Atmosphere] (1987); H. Kraft, *Internationales Luftreinhalterecht* (1996), 147-148; and D. R. Minnekaeva, *Mezhdunarodno-pravovye aspekty okhrany atmosfernogo vozdukha* [International Legal Aspects of the Protection of Atmospheric Air] (2005).

10 In this article, 'ECJ' is used as the well-known abbreviation even though its new name, after the *Treaty of Lisbon*, is simply the 'Court of Justice'.

11 *Air Transport Association of America and Others v. [UK] Secretary of State for Energy and Climate Change*, Case C-366/10, Judgment of 21 December 2011, ECJ Reports [2011] I 13755. The judgment can also be found in 51 ILM 535. See the U.S. legislative response through the *European Union Emissions Trading Scheme Prohibition Act* (Public Law

In 1971, the International Civil Aviation Organization (ICAO) had begun to lay down global technical standards for aircraft noise emissions under Annex 16 of the 1944 *Chicago Convention*, extended since 1981 to gaseous pollutant emissions from aircraft engines.[12] Ambient air quality criteria and guidelines have been issued since 1977 by the World Health Organization (WHO);[13] in the

112-200), 27 November 2012, 126 Stat. 1477; and the case comments by B. Mayer, 'Case C-366/10', 49 *Common Market Law Review* (2012) 3, 1113; M. W. Gehring, 'Air Transport Association of America v. Energy Secretary: Clarifying Direct Effect and Providing Guidance for Future Instrument Design for a Green Economy in the European Union', 21 *Review of European Community and International Environmental Law* (2012) 2, 149; S. Bogojević, 'Legalising Environmental Leadership: A Comment on the CJEU'S Ruling in C-366/10 on the Inclusion of Aviation in the EU Emissions Trading Scheme', 24 *Journal of Environmental Law* (2012) 2, 345; Brian F. Havel & J. Q. Mulligan, 'The Triumph of Politics: Reflections on the Judgment of the Court of Justice of the European Union Validating the Inclusion of Non-EU Airlines in the Emissions Trading Scheme', 37 *Air and Space Law* (2012) 1, 3; P. Mendes de Leon, 'Enforcement of the EU ETS: The EU's Convulsive Efforts to Export its Environmental Values', 37 *Air and Space Law* (2012) 4/5, 287; S. M. Dejong, 'Hot Air and Hot Heads: An Examination of the Legal Arguments Surrounding the Extension of the European Union's Emissions Trading Scheme to Aviation', 3 *Asian Journal of International Law* (2013) 1, 163. See also V. M. Tunteng *et al.*, 'Legal Analysis on the Inclusion of Civil Aviation in the European Union Emissions Trading Scheme', 24 *Environmental Law and Management* (2012) 3, 119; M. W. Gehring & C. A. R. Robb, 'Addressing the Aviation and Climate Change Options: A Review of Options', *ICTSD Publications No. 7* (2013); V. Schade, *The Inclusion of Aviation in the European Emission Trading Scheme: Analyzing the Scope of Impact on the Aviation Industry* (2013); V. Correia, *L'Union européenne et le droit international de l'aviation civile* (2014); R. Abeyratne, *Aviation and Climate Change: In Search of a Global Market Based Measure* (2014); J. R. Thompson, 'Return to Your Seats and Fasten Your Seatbelts: The European Union Encounters Turbulence in the Application of Its Airline Emissions Trading System', 47 *George Washington International Law Review* (2015) 2, 383; A. Piera Valdés, *Greenhouse Gas Emissions from International Aviation: Legal and Policy Analysis* (2015).

12 *Convention on International Civil Aviation*, 7 December 1944, 15 UNTS 295, Annex 16, Vol. I (Aircraft Noise, 6th ed. 2011) & Vol. II (Aircraft Engine Emissions, 3rd ed. 2008). See P. H. Sand, 'Lessons Learned in Global Environmental Governance', 18 *Boston College Environmental Affairs Law Review* (1991) 2, 213, 244-246; P. Davies & J. Goh, 'Air Transport and the Environment: Regulating Aircraft Noise', 18 *Air and Space Law* (1993) 3, 123; International Civil Aviation Organization (ICAO), *Environmental Report* (2013), 10; and *Resolution 17/2* of the 38th ICAO Assembly, 4 October 2013, ICAO Doc A38-WP/430 (2013), 17-7-17-8, para. 17.3.48.

13 World Health Organisation (WHO), *Air Quality Guidelines: Global Update 2005* (2006); and WHO, *Guidelines for Indoor Air Quality: Selected Pollutants* (2010). For background, see S. Shubber, 'The Role of WHO in Environmental Pollution Control', 2 *Earth Law Journal* (1976) 4, 363; A. M. Abdelhady, *L'action juridique internationale contre la pollution*

same year, the International Labour Organization (ILO) adopted a *Convention Concerning the Protection of Workers Against Occupational Hazards in the Working Environment Due to Air Pollution, Noise and Vibration*.[14] Basic standards for protection against atmospheric nuclear radiation had already been set since 1961 by the International Atomic Energy Agency (IAEA),[15] consolidated in its 1994 *Convention on Nuclear Safety*,[16] complementing the 1963 and 1986 *Conventions on Liability for Nuclear Damage and on Transboundary Notification of Nuclear Accidents*,[17] and supplemented by the independent global monitoring work of the UN Scientific Committee on the Effects of Atomic Radiation (UNSCEAR).[18] Air pollution from ships is regulated since 1997 by the International Maritime Organization (IMO) under Annex VI of the 1973/1978 *MARPOL Convention*,[19] with maritime waste incineration already prohibited under the revised 1972/1996

atmosphérique (1981), 277-413; and H. F. French, 'Clearing the Air: A Global Agenda', *Worldwatch Paper No. 94* (1990), 8-12; and H. G. Post, *The Protection of Ambient Air in International and European Law* (2009).

14 *Convention (No. 148) Concerning the Protection of Workers Against Occupational Hazards in the Working Environment due to Air Pollution, Noise and Vibration*, 20 June 1977, 1141 UNTS 106. See also *Convention (No. 115) Concerning the Protection of Workers Against Ionizing Radiations,* 22 June 1960, 431 UNTS 41; *Convention (No. 136) Concerning Protection Against Hazards of Poisoning Arising From Benzene*, 23 June 1971, 885 UNTS 45; and the comparative analysis by V. A. Leary, 'Working Environment', in P. H. Sand (ed.), *The Effectiveness of International Environmental Agreements: A Survey of Existing Legal Instruments* (1992), 362.

15 International Atomic Energy Agency (IAEA), *Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards* (2014). See P. C. Szasz, 'The IAEA and Nuclear Safety', 1 *Review of European Community and International Environmental Law* (1992) 2, 165.

16 *Convention on Nuclear Safety*, 20 September 1994, 1963 UNTS 293. See M. T. Kamminga, 'The IAEA Convention on Nuclear Safety', 44 *International and Comparative Law Quarterly* (1995) 4, 872.

17 *Vienna Convention on Civil Liability for Nuclear Damage*, 21 May 1963, 1063 UNTS 265, supplemented by the *Joint Protocol to the Application of the Vienna Convention and the Paris Convention*, 21 September 1988, 1672 UNTS 302; the *Convention on Early Notification of a Nuclear Accident*, 26 September 1986, 1439 UNTS 275; and a series of implementing bilateral treaties.

18 Established by GA Res. 913 (X), UN Doc A/RES/913(X), 3 December 1955 (operative part 1), and now operating under United Nations Environment Programme (UNEP) auspices in Vienna. See Scientific Committee on the Effects of Atomic Radiation, *Sources and Effects of Ionizing Radiation* (2010), and GA Res. 69/84, UN Doc A/RES/69/84, 16 December 2014, 3 (operative part 15).

19 Adopted by the 1997 *Protocol to Amend the 1973 International Convention for the Prevention of Pollution From Ships*, 26 September 1997 (not officially published), periodically amended by the IMO Marine Environment Protection Committee (MEPC).

London Dumping Convention.[20] Air pollutant emissions from motor vehicles have been regulated since 1958 by uniform transnational standards initially adopted under a regional agreement of the United Nations Economic Commission for Europe (UNECE),[21] and since 1998 by worldwide technical regulations.[22]

Under the auspices of the United Nations Environment Programme (UNEP), provisions for cooperation between States on weather modification were adopted in 1980,[23] after the *ENMOD Treaty* of 1977 prohibited "hostile" environmental modification.[24] These steps were followed by several global instruments covering atmospheric releases of hazardous chemicals, including ozone-depleting substances (1985/1987),[25] persistent organic pollutants (2001),[26]

20 *Convention on the Prevention of Marine Pollution by Dumping of Waste and Other Matter*, 29 December 1972, 1046 UNTS 120 (as revised by *Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Waste and Other Matter* of 7 November 1996, 36 ILM 7).

21 *Agreement Concerning the Adoption of Uniform Conditions of Approval and Reciprocal Recognition of Approval for Motor Vehicles Equipment and Parts*, 20 March 1958 , 335 UNTS 211 (rev. 1995); with technical regulations Nos 40, 41, 47, 49, 51, 83.

22 *Agreement Concerning the Establishing of Global Technical Regulations for Wheeled Vehicles, Equipment and Parts Which Can Be Fitted and/or Be Used on Wheeled Vehicles*, 25 June 1998, 2119 UNTS 129.

23 UNEP Governing Council, *Decision 8/7/A*, UN Doc A/35/25 (1980), 117-118. See R. J. Davis, 'Atmospheric Water Resources Development and International Law', 31 *Natural Resources Journal* (1991) 1, 11; L. L. Roslycky, 'Weather Modification Operations With Transboundary Effects: The Technology, the Activities and the Rules', 16 *Hague Yearbook of International Law* (2003), 3, 25-26; J. L. J. Reynolds, 'Climate Engineering Field Research: The Favorable Setting of International Law', 5 *Journal of Energy, Climate, and the Environment* (2014) 2, 417, 471-472.

24 *Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques*, 10 December 1976, 1108 UNTS 151. See R. A. Falk, 'Environmental Disruption by Military Means and International Law', in A. H. Westing (ed.), *Environmental Warfare: A Technical, Legal and Policy Appraisal* (1984), 33.

25 *Vienna Convention for the Protection of the Ozone Layer*, 22 March 1985, 1513 UNTS 293; and Montreal Protocol on Substances that Deplete the Ozone Layer, 16 September 1987, 1522 UNTS 3 (as amended). See K. M. Sarma et al., 'Ozone Layer: International Protection', in R. Wolfrum (ed.), *The Max Planck Encyclopedia of Public International Law*, Vol. VII (2012), 1139.

26 *Stockholm Convention on Persistent Organic Pollutants*, 22 May 2001, 2256 UNTS 119, Preamble (referring to atmospheric transport and deposition) and Annex C (ibid., 246-249) on control of combustion/incineration facilities. See P. L. Lallas, 'The Stockholm Convention on Persistent Organic Pollutants', 95 *American Journal of International Law* (2001) 3, 692.

and mercury (2013).[27] Pollutant discharges to the oceans "from or through the air" – addressed by Articles 212 (3) and 222 of the 1982 *United Nations Convention on the Law of the Sea* (UNCLOS)[28] – are the subject of 1985 UNEP *Guidelines for the Protection of the Marine Environment Against Pollution From Land-Based Sources*,[29] a related 1995 global programme of action,[30] and a series of UNEP-sponsored conventions and protocols for twelve marine regions of the world.[31] Meanwhile, the Intergovernmental Panel on Climate Change (IPCC), jointly established by UNEP and the World Meteorological Organization (WMO) in 1988,[32] provides technical input to the Conference of the Parties to the 1992 UN *Framework Convention on Climate Change* (UNFCCC) and its 1997 *Kyoto Protocol* which have sought global agreement on the control of

27 *Minamata Convention on Mercury*, 10 October 2013, Preamble (para. 1), available at https://treaties.un.org/doc/Treaties/2013/10/20131010%2011-16%20AM/CTC-XXVII-17.pdf (last visited 4 August 2015), 1 (on long-range atmospheric transport) and Art. 8 (ibid., 13-17) (emissions to the atmosphere). See H. H. Eriksen & F. X. Perrez, 'The Minamata Convention: A Comprehensive Response to a Global Problem', 23 *Review of European, Comparative and International Environmental Law* (2014) 2, 195.

28 *United Nations Convention on the Law of the Sea*, 10 December 1982, 1833 UNTS 3, Arts 212 (3) & 222 [UNCLOS].

29 Cf. UNEP Governing Council, *Decision 13/18/II*, UN Doc A/40/25, 51 & 53. See P. Széll, 'The Montreal Guidelines for the Protection of the Marine Environment against Pollution from Land-Based Sources', 37 *International Digest of Health Legislation* (1986) 2, 391; and Q.-N. Meng, *Land-Based Marine Pollution: International Law Development* (1987).

30 *Global Programme of Action for the Protection of the Marine Environment From Land-Based Activities*, UN Doc UNEP(OCA)/LBA/IG.2/7, 5 December 1995 [UNEP Global Programme]. See T. A. Mensah, 'The International Legal Regime for the Protection and Preservation of the Marine Environment From Land-Based Sources of Pollution', in A. Boyle & D. Freestone (eds), *International Law and Sustainable Development: Past Achievements and Future Challenges* (1999), 297, esp. 307 *et seq.*; D. L. VanderZwaag & A. Powers, 'The Protection of the Marine Environment from Land-Based Pollution and Activities: Gauging the Tides of Global and Regional Governance', 23 *International Journal of Marine and Coastal Law* (2008) 3, 423.

31 Texts in P. H. Sand, *Marine Environment Law in the United Nations Environment Programme: An Emergent Eco-Regime* (1988). For an update, see Y. Tanaka, 'Regulation of Land-Based Marine Pollution in International Law: A Comparative Analysis Between Global and Regional Frameworks', 66 *Zeitschrift für ausländisches öffentliches Recht und Völkerrecht* (2006) 3, 535.

32 Endorsed by GA Res. 43/53, UN Doc A/RES/43/53, 6 December 1988. On the continuing work of the Intergovernmental Panel on Climate Change (IPCC), see IPCC, *Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (AR5) (2014), available at http://ipcc.ch/ (last visited 23 October 2015).

greenhouse gases.[33] At a regional level, the 1979 UNECE *Convention on Long-Range Transboundary Air Pollution* (LRTAP Convention) in Europe and North America, with eight implementing protocols adopted to date (1984-2012),[34] has since been followed by corresponding instruments in Asia and Africa.[35]

33 *United Nations Framework Convention on Climate Change*, 9 May 1992, 1771 UNTS 107; and *Kyoto Protocol*, 11 December 1997, 2303 UNTS 162. See C. P. Carlarne, K. R. Gray & R. Tarasofsky (eds), *Oxford Handbook of International Climate Change Law* (2015). The IPCC has depicted the regime complex for climate change at multiple transnational scales in R. Stavins *et al.*, 'International Cooperation: Agreements and Instruments', in IPCC, *Climate Change 2014: Mitigation of Climate Change: Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (O. Edenhofer *et al.* (eds), 2014), 1001, 1012-1013.

34 *Convention on Long-Range Transboundary Air Pollution,* 13 November 1979, 1302 UNTS 217 [LRTAP Convention]. See P. H. Sand, 'Regional Approaches to Transboundary Air Pollution', in J. L. Helm (ed.), *Energy: Production, Consumption, and Consequences* (1990), 246; R. Lidskog & G. Sundqvist (eds), *Governing the Air: The Dynamics of Science, Policy, and Citizen Interaction* (2011); and A. Byrne, 'The 1979 Convention on Long-Range Transboundary Air Pollution: Assessing its Effectiveness as a Multilateral Environmental Regime after 35 Years', 4 *Transnational Environmental Law* (2015) 1, 37. – On bilateral arrangements in North America, see the *U.S.–Mexico Agreements* of 14 August 1983 (22 ILM 1025), 29 January 1987 (26 ILM 33) and 3 October 1989 (29 ILM 29); and the *U.S.–Canada Agreement on Air Quality* of 13 March 1991 (30 ILM 676), with a supplementary protocol and annex on ground-level ozone of 7 December 2000 (text in U.S. Environmental Protection Agency (International Joint Commission), *Air Quality Agreement: 2002 Progress Report* (2002), 47-55). For proposals of a wider trilateral approach to long-range hemispheric air pollution, see A. Szekely, 'Establishing a Region for Ecological Cooperation in North America', 32 *Natural Resources Journal* (1992) 3, 563, 592-595.

35 Including the *Malé Declaration on Control and Prevention of Air Pollution and its Likely Transboundary Effects for South Asia* (22 April 1998), available at http://www.rrcap.ait.asia/male/ (last visited 4 August 2015); of the South Asia Cooperative Environment Programme, the Association of South East Asian States' *Agreement on Transboundary Haze Pollution* (10 June 2002), available at http://haze.asean.org/?wpfb_dl=32 (last visited 4 August 2015); and the 2010 intergovernmental agreement for an Acid Deposition Monitoring Network in East Asia (EANET). See generally W. Takahashi, 'Formation of an East Asian Regime for Acid Rain Control: The Perspective of Comparative Regionalism', 1 *International Review for Environmental Strategies* (2000) 1, 97; N. Silva-Send, *Preventing Regional Air Pollution in Asia: The Potential Role of the European Convention on Long Range Transboundary Air Pollution in Asian Regions* (2007); and S. Jayakumar *et al.* (eds), *Transboundary Pollution: Evolving Issues of International Law and Policy* (2015). Between 2008 and 2011, four sub-regional intergovernmental 'framework policy agreements on air pollution' were adopted under UNEP auspices for Southern Africa, Eastern Africa, Central and Western Africa, and North Africa. See generally L. Nordberg, *Air Pollution: Promoting Regional Cooperation* (2010).

While some scholarly observers view the resulting proliferation and fragmentation of international law-making as an unavoidable and largely harmless side-effect of the growing demand for technical specialization,[36] or even a welcome "beneficial prologue to a pluralistic community",[37] others caution that fragmentation in regulatory institutions and competition among multiple different sub-regimes works systematically to the overall advantage and interests of the most powerful States, whose consent is essential for the functioning of the system.[38] Moreover, fragmentation can lead specialized institutions to adopt narrow decisions that induce adverse side effects ('countervailing risks') in other domains, especially afflicting weaker or disenfranchised community members due to their 'omitted voice'.[39]

There have been a number of attempts at identifying cross-cutting international legal rules and principles, with a view to overcoming excessive fragmentation in this field:

– In 1966, the 7th International Congress of Comparative Law in Uppsala considered reports on 'protection of the atmosphere in international law', which sought to identify common elements in available case law and State practice.[40]

36 M. Koskenniemi, 'The Fate of Public International Law: Between Technique and Politics', 70 *Modern Law Review* (2007) 1, 1, 2; M. Koskenniemi & P. Leino, 'Fragmentation of International Law? Postmodern Anxieties', 15 *Leiden Journal of International Law* (2002) 3, 553.

37 M. Koskenniemi, 'What Is International Law For?', in M. D. Evans (ed.), *International Law*, 4th ed. (2014), 29, 47. See also the apologist conclusions of the ILC Study Group on *Fragmentation of International Law: Difficulties Arising From the Diversification and Expansion of International Law*, UN Doc A/CN.4/L.682,13 April 2006, 248-249, para. 492.

38 E. Benvenisti & G. D. Downs, 'The Empire's New Clothes: Political Economy and the Fragmentation of International Law', 60 *Stanford Law Review* (2007) 2, 595, 597 & 608; R. B. Stewart, 'Remedying Disregard in Global Regulatory Governance: Accountability, Participation, and Responsiveness', 108 *American Journal of International Law* (2014) 2, 211, 230.

39 See J. B. Wiener & J. D. Graham, 'Resolving Risk Tradeoffs', in J. D. Graham & J. B. Wiener (eds), *Risk vs. Risk: Tradeoffs in Protecting Health and the Environment* (1995), 226.

40 See P. de Visscher, 'La protection de l'atmosphère en droit international', in A. Malmström & S. Strömholm (eds), *Rapports généraux au VIIe Congrès International de Droit Comparé* (1968), 338; and A.-C. Kiss, 'La protection de l'atmosphère en droit international', in Centre Français de Droit Comparé (ed.), *Études de droit contemporain* (1966), 369. In contrast to A.-C. Kiss (*op. cit.*, 374), however, P. de Visscher expressed the view that national legislation for the prevention of air pollution did not *eo ipso* apply to transfrontier pollution damage abroad (*op. cit.*, 339 (note 4)). See P. H. Sand, 'The Role of Domestic

– In 1974, the Council of the Organisation for Economic Cooperation and Development (OECD) recommended a set of 'principles concerning transfrontier pollution', later followed by recommendations on equal rights of access in transfrontier pollution disputes.[41]
– In 1978, the UNEP Governing Council adopted its 'shared natural resources (SNR) principles', subsequently endorsed by UN General Assembly *Resolution 34/186* of 18 December 1979.[42] In 1982, the Governing Council called for the preparation of a global code of conduct with respect to transboundary air pollution, drawing upon existing regional and bilateral experience".[43] Yet, that recommendation was never followed up, and the 1992 UN Rio Conference on Environment and Development (UNCED) decided instead, in Chapter 9 of its *Agenda 21*, "[t]o encourage the establishment of new and the implementation of existing *regional* agreements for limiting transboundary air pollution",

Procedures in Transnational Environmental Disputes', in Organisation for Economic Co-operation and Development (OECD) (ed.), *Legal Aspects of Transfrontier Pollution* (1977), 146, 166 (note 1).

41 *Principles Concerning Transfrontier Pollution*, OECD Doc C(74)224 annex (1974), 14 ILM 242 [OECD Principles Concerning Transfrontier Pollution]; OECD Council, *Recommendation C(76)55*, OECD Doc C(76)55(Final) (1976); and OECD Council, Recommendation C(77)28, OECD Doc C(77)28 (1977). The texts are reprinted in OECD (ed.), *supra* note 40, 11, 19 & 29. The 'principles' annexed to the recommendations used the definition of pollution coined by the Joint Group of Experts on the Scientific Aspects of Marine Pollution (GESAMP) established by FAO, IAEA, IMO, UNEP, UNESCO, WHO and UNEP (in UN Doc A/7750 (1969) (copy on file with authors)).

42 The *Principles of Conduct in the Field of the Environment for the Guidance of States in the Conservation and Harmonious Utilization of Natural Resources Shared by Two or More States* (reprinted in 17 ILM 1097) were adopted by UNEP Governing Council Decision 6/14, UN Doc A/33/25 (1978), 154-155. According to the consultant report submitted in preparation of the principles, the natural resources considered susceptible of sharing include "air [...] when it acts as vehicle for the transport of wastes beyond national jurisdiction"; J. Mayda, 'Definition of Internationally Shared Resources', *UNEP Draft Working Paper* (January 1978), 22. See also J. A. Barberis, *Los recursos naturales compartidos entre estados y el derecho internacional* (1979), 113-139.

43 UNEP Governing Council, *Decision 10/21*, UN Doc A/37/25 (1982), 108-109 (operative part 2), adopting the 'Programme for the Development and Periodic Review of Environmental Law' based on the recommendations of an Ad Hoc Meeting of Senior Government Officials Expert in Environmental Law (Montevideo, 6 November 1981), UN Doc. UNEP/GC.10/5/Add.2 (1982), 6 (copy on file with authors); and UN Doc UNEP/GC.10/14 (1982), 100 (copy on file with authors). See also A.-C. Kiss, 'La protection de l'atmosphère: un exemple de la mondialisation des problèmes', 34 *Annuaire Français de Droit International* (1988), 701.

with a focus on developing countries in particular.[44] As a result, UNEP's revised *Montevideo Programme* since 1993 reoriented the organization's work in this field towards replicating the LRTAP model in other regions and sub-regions.[45]

– The International Law Association (ILA), when adopting its 1982 Montreal Rules of International Law Applicable to Transfrontier Pollution, deferred the legal aspects of long-distance air pollution to subsequent work by a different committee.[46] After several preliminary/interim reports between 1984 and 1994, however, the committee was dissolved without conclusions in 1996.
– In 1987, the Cairo session of the Institut de Droit International adopted a resolution on Transboundary Air Pollution.[47]
– In 1989, an International Legal Meeting of Legal and Policy Experts at Ottawa adopted a statement on 'protection of the atmosphere'

44 UN, *Report of the United Nations Conference on Environment and Development* (Rio de Janeiro, 3-14 June 1992), UN Doc A/CONF.151/26/Rev.1, Vol. I (1993), 120-121, para. 9.27 (emphasis added). For background, see the *Report of the Preparatory Committee on its Third Session* (Geneva, 12 August - 4 September 1991), UN Doc A/CONF.151/PC/59 (28 June 1991), 10 (copy on file with authors). The UNEP/WMO follow-up report on *Protection of the Atmosphere*, submitted by the UN Commission on Sustainable Development in preparation of the 2002 Johannesburg Summit, singled out South-East Asia as a priority region. See Commission on Sustainable Development, *Protection of the Atmosphere: Report of the Secretary-General*, UN Doc E/CN.17/2001/PC/12, 2 March 2001, 4, para. 19.

45 See Nordberg, *supra* note 35; and Silva-Send, *supra* note 35. In implementation of section F (a) of the fourth 'Montevideo Programme' adopted by UNEP, *Governing Council Decision 25/11/I*, UN Doc UNEP/GC.25/17, 26 February 2009, 28-29, a seminar organized by UNEP at Osaka/Japan in June 2015 addressed current problems of "law to regulate air pollution and protect the Earth's atmosphere".

46 International Law Association (ILA), *Report of the 60th Conference* (1982), 1-3. See D. Rauschning, 'Report of the Committee on Legal Aspect of the Conservation of the Environment', in ILA, *supra* this note, 159. See also ILA, 'Resolution 2/2014: Declaration on Legal Principles Relating to Climate Change' (11 April 2014), available at http://www.ila-hq.org/en/news/index.cfm/nid/8E6750D9-F999-4396-B3C56C8110A5A523 (last visited 4 August 2015). The resolution was adopted by the 76th Biennial ILA Conference at Washington/DC, drafted in 2008-2014 by the Committee on Legal Principles Relating to Climate Change, chaired by Shinya Murase.

47 Institut de Droit International, *Resolution on Transboundary Air Pollution*, 62 *Annuaire de l'Institut de Droit International* (1987) 2, 296-307.

recommending an international convention or conventions with appropriate protocols on the topic.[48]

– In 2013, the ILC decided to include the topic 'Protection of the Atmosphere' in its current programme of work. But the Commission then quickly adopted a severely restrictive 'understanding', reading:

> "(a) Work on this topic will proceed in a manner so as not to interfere with relevant political negotiations, including on climate change, ozone depletion, and long-range transboundary air pollution. The topic will not deal with, but is also without prejudice to, questions such as: liability of States and their nationals, the polluter-pays-principle, the precautionary principle, common but differentiated responsibilities, and the transfer of funds and technology to developing countries, including intellectual property rights;
> (b) The topic will also not deal with specific substances, such as black carbon, tropospheric ozone, and other dual-impact substances, which are the subject of negotiations among States. The project will not seek to 'fill' the gaps in the treaty regimes;
> (c) Questions relating to outer space, including its delimitation, are not part of the topic;
> (d) The outcome of the work on the topic will be draft guidelines that do not seek to impose on current treaty regimes legal rules or legal principles not already contained therein.
> The Special Rapporteur's reports would be based on this understanding."[49]

C. Analytic Problems of the ILC 'Understanding'

In the face of the restrictions so imposed by his peers, the ILC Special Rapporteur was compelled to substantially modify his approach. Instead of the ambitious original vision of a 'Law of the (Protection of the) Atmosphere'

48 International Legal Meeting of Legal and Policy Experts, *Ottawa Statement*, 22 February 1989, reprinted in 5 *American University Journal of International Law and Policy* (1990) 2, 529-542.

49 ILC, *Report of the Commission to the General Assembly on the Work of its 65th Session*, *supra* note 1, 115, para. 168. See also S. D. Murphy, 'Immunity Ratione Personae of Foreign Government Officials and Other Topics: The Sixty-Fifth Session of the International Law Commission', 108 *American Journal of International Law* (2014) 1, 41, 56.

outlined in the 2011 syllabus[50] – also presented in a thirty-minute video in the UN Legal Office's Audiovisual Library of International Law[51] – his two first reports submitted to the ILC in 2014 and 2015 had to acknowledge and accommodate the 'leash' tightly constraining the scope of his project to the narrow residual range that remains after the 'understanding'.[52]

Not surprisingly, that change of course provoked consternation and instant reactions from academic commentators. In a widely posted blog of Amsterdam University's SHARES project,[53] Ilias Plakokefalos concludes that the Commission effectively watered down the initial proposal, "offering a mandate to the Special Rapporteur that provides for very little room to produce a meaningful result." In essence, he continues, it would have been more plausible for the ILC either not to embark on the project at all or to revert to the original version.[54]

It is of course difficult for outside observers to gauge the rationale behind the Commission's motives for this turn of events, given that much of the internal ILC decision-making process is anything but transparent.[55] On the one hand, there is the notorious reluctance of the Commission to tackle interdisciplinary

50 *Supra* note 2.

51 The video is available at http://legal.un.org/avl/ls/Murase_EL.html (last visited 4 August 2015).

52 Murase, *First Report*, *supra* note 3, 4-5, 7-8 & 15-16, paras 5, 12-14 & 27; and S. Murase, *Second Report on the Protection of the Atmosphere*, UN Doc A/CN.4/681, 2 March 2015, 3, para. 1 (note 2) [Murase, Second Report].

53 I. Plakokefalos, 'International Law Commission and the Topic "Protection of the Atmosphere": Anything New on the Table?' (1 November 2013), available at http://www.sharesproject.nl/international-law-commission-and-the-topic-protection-of-the-atmosphere-anything-new-on-the-table/ (last visited 4 August 2015).

54 *Ibid.* See also the critical appraisal by A. V. Kodolova & A. M. Solntsev, 'Perspektivy kodifikatsii i progressivnogo razvitiya mezhdunarodnogo prava v sfere okhrany atmosfery' [Perspectives of the Codification and Progressive Development of International Law in the Area of Protection of the Atmosphere], 12 *Evrazijskij juridičeskij žurnal/Eurasian Law Journal* (2014) 1, 60.

55 See M. El-Baradei, T. M. Franck & R. Trachtenberg, *The International Law Commission: The Need for a New Direction* (1981), 11 (referring especially to the "private" deliberations of the Planning Group created in 1975). See also the critical comments by S. Rosenne, 'Codification Revisited After 50 Years', 2 *Max Planck Yearbook of United Nations Law* (1998), 1 (on the internal fragmentation of ILC decision-making).

areas,[56] let alone "multi-interdisciplinary" projects (in Shabtai Rosenne's terms[57]: that is, involving other branches of science and human activity), which tend to get dismissed as "too technical" and "more suited for discussion among specialists".[58] Moreover, as one Commission member cautioned, "a one-size-fits-all approach to the topic, which wrongly presupposed that all problems related to the atmosphere were of a similar nature and aimed to develop uniform legal rules to harmonize disparate regimes, was bound to be problematic".[59]

On the other hand, there are the serious political cleavages that manifest themselves most bluntly in the annual governmental comments on ILC reports in the UN General Assembly's Sixth Committee.[60] As the summary records show, the major world powers – in particular, the five permanent Security Council members – simply do not want the ILC to get into the way of any

56 El-Baradei, Franck & Trachtenberg, *supra* note 55, 11: "The Commission's reluctance to tackle topics which, though legal in nature, include, to a greater or lesser extent, issues concerning other disciplines is an ingredient in the decline of the Commission from its central position in the law-making process.". Note, however, with regard to the current topic of protection of the atmosphere, the continuous efforts of the Special Rapporteur to consult with scientists and experts of other institutions (including UNEP, WMO and UN/ECE). See Murase, *Protection of the Atmosphere* (Syllabus), UN Doc A/66/10 (2011), *supra* note 2, 323, para. 28; Murase, *First Report*, *supra* note 3, 5 & 10-11, paras. 7 (note 13) & 19; and Murase, *Second Report*, *supra* note 52, 5, para. 7.

57 Rosenne, *supra* note 55, 20.

58 See also, *inter alia*, the comments (in the GA Sixth Committee discussion of the ILC report in 2011) by France (GA (Sixth Committee), *Summary Record of the 20th Meeting*, UN Doc A/C.6/66/SR.20, 23 November 2011, 9, para. 48), Iran (GA (Sixth Committee), *Summary Record of the 27th Meeting*, UN Doc A/C.6/66/SR.27, 8 December 2011, 8, para. 52), and the Netherlands (GA (Sixth Committee), *Summary Record of the 28th Meeting*, UN Doc A/C.6/66/SR.28, 2 December 2011, 11, para. 64).

59 Statement by S. D. Murphy, in ILC, *Summary Record of the 3211th Meeting*, UN Doc A/CN.4/SR.3211, 20 June 2014, 5. See also J. C. I. Kuylenstierna *et al.*, 'Atmosphere', in UNEP (ed.), *Global Environmental Outlook 5: Environment for the Future We Want* (2012), 31, 57 (citing M. A. Levy, R. O. Keohane & P. M. Haas, 'Improving the Effectiveness of International Environmental Institutions', in P. M. Haas, R. O. Keohane & M. A. Levy, *Institutions for the Earth: Sources of Effective International Environmental Protection* (1993), 397).

60 See El-Baradei, Franck & Trachtenberg, *supra* note 55, 11; and B. G. Ramcharan, *The International Law Commission: Its Approach to the Codification and Progressive Development of International Law* (1977), 115-131. See generally M. Wood, 'The General Assembly and the International Law Commission: What Happens to the Commission's Work and Why?', in I. Buffard *et al.* (eds), *International Law Between Universalism and Fragmentation: Festschrift in Honour of Gerhard Hafner* (2008), 373.

ongoing or forthcoming diplomatic negotiations.[61] Hence their recurrent message to the ILC to keep out of their hair, articulated not only in the open Sixth Committee debates but also more subtly through Commission members who traditionally have had current or former foreign-ministry affiliations (it hardly is an exaggeration to observe that the ILC as an institution has from its beginnings been captive to the 'mandarins', the "seasoned lawyer-diplomats"[62] groomed in their respective foreign-office hierarchies).[63]

Other Commission members – from 'lesser' UN member countries – did not hesitate to criticize the rigid 2013 understanding as having "placed the Special Rapporteur in an untenable position", and suggested either to reconsider the understanding, or to agree on a flexible approach to its application.[64] It is indeed hard to imagine – with all due respect to the self-perceived global authority of the ILC – how mere study, conceptual analysis, and model drafting work in the Commission (which according to the Special Rapporteur's provisional schedule are not expected to be completed until 2020 at the earliest)[65] would "interfere with political negotiations on those subjects [air pollution, ozone depletion,

61 See the summary of Sixth Committee comments on the report of the 66th ILC session in 2014 by the Russian, French, UK, U.S. and Chinese delegations, in Murase, *Second Report*, *supra* note 52, 4-5, para. 5 (notes 10 & 11); e.g., the U.S. statement in GA (Sixth Committee), *Summary Record of the 24th Meeting*, UN Doc A/C.6/69/SR.24, 3 December 2014, 13, para. 66, cautioning against the "risk that it would complicate and inhibit ongoing and future negotiations on issues of global concern" (emphasis added). But see also the puzzled query by former ILC Chair L. Caflisch at the Commission's 66th session (28 May 2014), as to how the Commission could possibly anticipate the contents of any future negotiations. See ILC, *Summary Record of the 3212th Meeting*, UN Doc A/CN.4/SR.3212, 30 June 2014, 8 [ILC, Summary Record of the 3212th Meeting].

62 M. Koskenniemi, 'International Legislation Today: Limits and Possibilities', 23 *Wisconsin International Law Journal* (2005) 1, 61, 61.

63 On this sometimes problematic *dédoublement fonctionnel*, see M. Kamto, 'Choix de sujets pouvant être retenus par la Commission aux fins de la codification et du développement progressif et méthodes de travail de la Commission', in UN (ed.), *Making Better International Law: The International Law Commission at 50* (1998) [UN (ed.), Making Better International Law], 256, 270-271.

64 ILC, *Report of the Commission to the General Assembly on the Work of its 66th Session*, UN Doc A/69/10 (2014), 221, para. 87 [ILC, Report of the Commission to the General Assembly on the Work of its 66th Session]. In the view of German ILC member G. Nolte, however, "the understanding left a sufficient margin of manoeuvre to identify general principles of international environmental law and to say that they applied to the protection of the atmosphere". Statement by G. Nolte, in ILC, *Summary Record of the 3213th Meeting*, UN Doc A/CN.4/SR.3213, 16 July 2015, 10.

65 Murase, *Second Report*, *supra* note 52, 47, para. 79.

and climate change]",[66] in which governments might indeed "run the risk that the ILC could make a difference".[67] To be sure, while it is true of course that major preparatory work is currently ongoing for global arrangements to succeed the 1997 *Kyoto Protocol*, there are at this time *no* pending treaty (or treaty amendment) negotiations either on long-range transboundary air pollution or on ozone depletion.[68] Furthermore, the Commission's strict order to the Special Rapporteur *not to deal with* "liability of States and their nationals, the polluter-pays principle, the precautionary principle, and common but differentiated responsibilities [...]" is perplexing – to put it mildly[69] – for an expert body fully qualified to address such general legal questions. Equally unusual is the recommendation of the Drafting Committee in May 2015 to incorporate that categorical interdiction in the text of draft guideline 2 (scope of the guidelines).[70]

The apodictic exclusion of all liability issues is strangely reminiscent of the *travaux préparatoires* of the 1979 *LRTAP Convention*.[71] At that time, upon

66 See the summary of general comments in ILC, *Report of the Commission to the General Assembly on the Work of its 66th Session*, *supra* note 64, 220-221, para. 86.

67 G. Nolte, 'The International Law Commission Facing the Second Decade of the Twenty-First Century', in U. Fastenrath *et al.* (eds), *From Bilateralism to Community Interest: Essays in Honour of Judge Bruno Simma* (2011), 781, 783.

68 Unless these 'keep out – *chasse gardée*' orders were also intended to apply to all future deliberations of the treaties' governing bodies and their subordinate committees with regard to the continuous adjustment and amendment of technical annexes, which are part of their mandates for regular treaty implementation and review.

69 In the words of Argentine ILC member E. Candioti, the understanding was "a disgrace" to the Commission. Statement by E. Candioti, ILC, *Summary Record of the 3212th Meeting*, *supra* note 61, 7. Tanzanian member C. Peter called it a "sword of Damocles", wondering whether it had been "purposely designed to bog down the work on the topic". Statement by C. Peter, in ILC, *Summary Record of the 3247th Meeting*, UN Doc A/CN.4/SR.3247, 8 June 2015, 12 [ILC, Summary Record of the 3247th Meeting].

70 ILC, *Protection of the Atmosphere: Texts and Titles of Draft Guidelines 1, 2 and 5, and Preambular Paragraphs*, provisionally adopted by the Commission on 2 June 2015, with commentaries adopted at the 3287th and 3288th meetings of the Commission on 5 and 6 August 2015; see para. 2 of draft guideline 2 in Chapter V of the ILC *Report on the Work of its 67th Session* (Rapporteur: M. Vázquez-Bermúdez), UN Doc A/70/10 (2015), 32-33. See also generally P. N. Okowa, 'Responsibility for Environmental Damages', in M. Fitzmaurice, David M. Ong & P. Merkouris (eds), *Research Handbook on International Environmental Law* (2010), 303, 317 (noting the "extreme reticence [...] of States to commit to detailed rules governing issues of responsibility").

71 For background of the negotiations, see E. M. Chossudovsky, *"East-West" Diplomacy for Environment in the United Nations* (1988).

request by the United Kingdom,[72] a special footnote was inserted under Article 8 (f) of the treaty, reading: "The present Convention does not contain a rule on State liability as to damage". Legal interpretations of that disclaimer clause vary,[73] although most of the literature concurs that the sole intent of the footnote was "that any question of international responsibility or liability was to remain unaffected by the LRTAP Convention".[74] The primary concern of governments at the time was to reach urgent agreement on "such preventive principles as prior notification, exchange of information procedures for assessment of environmental impacts and legally binding consultations in cases of significant transboundary pollution", rather than liability for damage, which therefore could be neglected in the negotiations.[75] While that pragmatic approach may have been politically expedient to ensure rapid broad acceptance in the UNECE context of the 1970s,[76] it may be doubted whether it should also serve as a rationale for the drafting of future global guidelines in the ILC context.

72 Over the opposition of the Canadian and Yugoslav delegations, which had unsuccessfully proposed to include provisions on State responsibility in the Convention. See the reports of the 2nd and 4th meetings of the 'Special Group on LRTAP' of the UNECE Senior Advisers on Environmental Problems, UN Docs ENV/AC.9/4 annex II (1978), 3 & ENV/AC.9/8 (1978), 4 (copy on file with authors). See also M. Pallemaerts, 'International Legal Aspects of Long-Range Transboundary Air Pollution', 1 *Hague Yearbook of International Law* (1988), 189, 214-217.

73 The Belgian Government, in a 1982 explanatory memorandum to its Parliament, took the footnote to mean that "there will be no compensation for victim countries" (*le pays victime ne sera toutefois pas indemnisé*). Documents Parlementaires: Chambre des Représentants (1981-1982), No. 315/1, 5. See Pallemaerts, *supra* note 72, 215. Accordingly, some commentators concluded that the Convention also excludes liability claims based on general (customary) international law. See A.-C. Kiss, 'La Convention sur la pollution atmosphérique à longue distance', 5 *Revue juridique de l'environnement* (1981) 1, 30, 35; Statement by R. Quentin-Baxter, in ILC, *Report of the Commission to the General Assembly on the Work of its 34th Session*, UN Doc A/37/10 (1982), Yearbook of the International Law Commission (1982), Vol. II (2), 87, para. 119.

74 See, e.g., J. G. Lammers, 'The European Approach to Acid Rain', in D. B. Magraw (ed.), *International Law and Pollution* (1991), 265, 304. See also Pallemaerts, *supra* note 72, 217; P. H. Sand, 'The Practice of Shared Responsibility for Transboundary Air Pollution', *SHARES Research Paper 69* (2015), available at http://www.sharesproject.nl/wp-content/uploads/2015/07/69.-Sand-Practice-vol..pdf (last visited 4 August 2015), 15 (forthcoming in A. Nollkaemper & I. Plakokefalos (eds), *The Practice of Shared Responsibility in International Law* (2016)).

75 See the *Report of the Executive Secretary*, UN Doc E/ECE/936 (1977), 7 (copy on file with authors); Chossudovsky, *supra* note 71, 41.

76 The Government of the Netherlands, in its explanatory report to Parliament in 1981, pointed out bluntly that some countries would have refused to sign the Convention "if

Equally unpersuasive is the explicit removal of 'black carbon' – that is, aerosol particles or 'fine particulate matter' ($PM_{2.5}$) such as soot from diesel engines, domestic combustion sources, and agricultural biomass burning – from the mandate of the project,[77] thereby effectively reducing the ILC definition of atmospheric pollution to gaseous emissions. Yet, exposure to ambient $PM_{2.5}$ was responsible for 3.2 million premature deaths in 2010 and is among the top ten leading risk factors for early death.[78] The fact that these emissions also happen to contribute to global warming – as 'short-lived climate pollutants' (SLCPs),[79] hence dual-impact or multiple-risk sources, whose reduction offers co-benefits that are important for health, environment, and the politics of national action – prompted the creation of an innovative transnational partnership of governments and civil society under UNEP auspices (the *Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants*, CCAC, launched in 2012). But these interrelated impacts in no way justify the exemption of such pollutants from

it had contained any provisions on liability"; *Tweede Kamer Zitting* [Second Chamber Session] 1980-1981, 16626 No. 5, 2 (translation by the authors). See Pallemaerts, *supra* note 72, 215.

77 Sub-paragraph (b) of the understanding, now incorporated in draft guideline 2 (3); see UN Doc A/70/10 (2015), 33, comment (no. 6) on draft guideline 2.

78 J. S. Apte *et al.*, 'Addressing Global Mortality from Ambient $PM_{2.5}$', 49 *Environmental Science and Technology* (2015) 13, 8057, 8057; S. E. Chambliss *et al.*, 'Estimating Source-Attributable Health Impacts of Ambient Fine Particulate Matter Exposure: Global Premature Mortality from Surface Transportation Emissions in 2005', 9 *Environmental Research Letters* (2014) 10 (10400), 1. See also R. T. Burnett *et al.*, 'An Integrated Risk Function for Estimating the Global Burden of Disease Attributable to Ambient Fine Particulate Matter Exposure', 122 *Environmental Health Perspectives* (2014) 4, 397; and N. A. H. Janssen *et al.*, *Health Effects of Black Carbon* (2012), WHO Regional Office. Climate change is predicted to further increase black carbon concentrations in some areas. See N. Watts *et al.*, 'Health and Climate Change: Policy Responses to Protect Health', 385 *Lancet* (forthcoming 2015), available at http://dx.doi.org/10.1016/S0140-6736(15)60854-6 (last visited 4 August 2015), 12.

79 With atmospheric lifetimes in the order of days or weeks, unlike long-term gaseous pollutants. See generally UNEP & WMO (eds), *Integrated Assessment of Black Carbon and Tropospheric Ozone* (2011); and Institute for Governance & Sustainable Development, *Primer on Short-Lived Climate Pollutants* (2013). See also World Bank & International Cryosphere Climate Initiative, *On Thin Ice: How Cutting Pollution Can Slow Warming and Save Lives* (2013); D. T. Shindell, 'The Social Cost of Atmospheric Release', 130 *Climatic Change* (2015) 2, 313 (estimating the combined damages from both global climate change impacts and air quality impacts, of emissions of black carbon and major greenhouse gases).

international legal analysis.[80] The refusal of the ILC to deal with this major new global health concern in the field of atmospheric pollution will only risk exposing the Commission, at best, to an unflattering public image of benign irrelevance, and at worst to outright ridicule in the scientific world.

Another key sentence of the understanding, which after review by the Drafting Committee also ended up in the 2015 draft guidelines as a preambular paragraph, raises a fundamental issue that touches on the very mandate of the Commission: "*The project will not seek to 'fill' gaps in treaty regimes*".[81] Historically, there has been extensive debate on the mandate of the ILC – based in turn on Article 13 (1) (a) of the *UN Charter* – for "promotion of the progressive development of international law and its codification".[82] And although the Commission itself never clarified the murky distinction between progressive development and codification,[83] it was recognized early on that "in any work of codification, the codifier inevitably has to fill in gaps [...] and amend the law in the light of new developments".[84] Accordingly, the Special Rapporteur – in what he termed a "middle-ground approach" – had emphasized in his two first reports that while the project was "not intended to fill the gaps in treaty regimes,

80 See B. Lode, 'The Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants', 17 *ASIL Insights* (2013) 20.

81 Chapter V of the ILC *Report on the Work of its 67th Session*, *supra* note 70, 21-22, and general commentary, *ibid.*, 24. On this sentence, see the skeptical comments by Caflisch (*supra* note 61).

82 *Charter of the United Nations*, 24 October 1945, Art. 13 (1) (a), 1 UNTS XVI. For a recent survey, see D. McRae, 'The Interrelationship of Codification and Progressive Development in the Work of the International Law Commission', 111 *Kokusaihō Gaikō Zasshi/Journal of International Law and Diplomacy* (2013) 4, 75. See also S. D. Murphy, 'Codification, Progressive Development, or Scholarly Analysis? The Art of Packaging the ILC's Work Product', in M. Ragazzi (ed.), *Responsibility of International Organizations: Essays in Memory of Sir Ian Brownlie* (2013), 29.

83 F. Berman, 'The ILC Within the UN's Legal Framework: Its Relationship With the Sixth Committee', 49 *German Yearbook of International Law* (2006), 107, 127.

84 ILC, *Report of the Committee on the Progressive Development of International Law and its Codification on the Methods for Encouraging the Progressive Development of International Law and its Eventual Codification*, UN Doc A/AC.10/51, 17 June 1947, para. 10, as quoted by H. W. Briggs, *The International Law Commission* (1965), 137-138 and by H. Owada, 'The International Law Commission and the Process of Law-Formation', in UN (ed.), *Making Better International Law*, *supra* note 63, 167, 168. The document is reprinted in 41 *American Journal of International Law* (1947) 3 (Supplement), 18-26. See also the UN Secretariat report (known as the 'Lauterpacht Memorandum') *Survey of International Law in Relation to the Work of Codification of the International Law Commission*, UN Doc A/CN.4/1 (1949), 65-66, para. 110, as quoted by R. P. Dhokalia, *The Codification of Public International Law* (1970), 208 ("filling gaps" under article 15 of the ILC Statute).

it would certainly identify such gaps".[85] Yet this 'relatively liberal interpretation' of the understanding continues to meet with irritated objections from more conservative members.[86]

D. Outlook

Following plenary discussions during the first part of the ILC's 67th session in May-June 2015, the Drafting Committee reviewed and provisionally adopted a set of preambular paragraphs and three draft guidelines.[87] In its deliberations on the preamble, the Committee abandoned the concepts of 'common heritage' and 'common concern of humankind', and instead settled for the seemingly innocuous term 'pressing concern of the international community as a whole', explaining the expression "as a factual statement, and not a normative statement".[88]

Political cleavages in the Commission surfaced, once again, with regard to the inclusion of the term 'energy' in draft guideline 1 (use of terms): Whereas

85 Murase, *First Report*, *supra* note 3, 4-5, para. 5 (note 10); and Murase, *Second Report*, *supra* note 52, 3-4, para. 3. See also the Special Rapporteur's summing-up of the debate, in ILC, *Summary Record of the 3214th Meeting*, UN Doc A/CN.4/3214, 14 July 2014, 3.

86 See the summary of comments at the 66th session of the ILC (ILC, *Report of the Commission to the General Assembly on the Work of its 66th Session*, *supra* note 64, 220-227, paras. 85-115) and at the 67th session in May 2015 (ILC, *Summary Record of the 3247th Meeting*, *supra* note 69). Some of the debate sadly illustrates the shrinking range of epistemic-semantic consensus among international lawyers, deplored by J. d'Aspremont, 'Wording in International Law', 25 *Leiden Journal of International Law* (2012) 3, 575.

87 Included, with commentaries, in Chapter V of the ILC *Report on the Work of its 67th Session*, *supra* note 70.

88 See the commentary (no. 4) on the third preambular paragraph, in Chapter V of the ILC *Report on the Work of its 67th Session*, *supra* note 70, 26-27. The expression had previously been used by the Commission as a criterion for determining which topics should be brought onto its programme of work (see ILC, *Report of the Commission to the General Assembly on the Work of its 49th Session*, UN Doc A/52/10, Yearbook of the International Law Commission (1997), Vol. II (2), 71-72, para. 238); and ILC, *Report of the Commission to the General Assembly on the Work of its 49th Session*, Yearbook of the International Law Commission (1998), Vol. II (2), 110, para. 553). According to the Chairman of the Drafting Committee (M. Forteau), "it was agreed among the members of the Committee that no legal consequences arise on their own" from its use in this context; ILC, *Summary Record of the 3260th Meeting*, UN Doc A/CN.4/SR.3260, 8 June 2015, 6 (copy on file with authors). But see the instant rejoinder by Commission member G. Nolte, stating that he had understood instead that while they had agreed to consider this formulation as not establishing a distinct legal obligation "as such", that did not exclude it from being taken into account as an expression of the object and goal of the draft guidelines. *Ibid.,* 7.

the 1979 *LRTAP Convention* had defined air pollution as "the introduction by man, directly or indirectly, of substances *or energy* into the air, resulting in deleterious effects [...]",[89] the 1991 *U.S.–Canada Agreement on Air Quality* had purposely deleted the words 'or energy' from its otherwise identical definition.[90] The difference had become an issue in the wake of the Chernobyl disaster in 1986, over whether or not the *LRTAP Convention* covered radioactive/radionuclide air pollution.[91] In view of strong divergent views among ILC

89 *LRTAP Convention*, Art. 1 (a), *supra* note 34, 219 (emphasis added). The explicit reference to energy goes back to the 1974 OECD *Principles Concerning Transfrontier Pollution* (*supra* note 41), which in turn served as a model for the definition of pollution in *UNCLOS*, Art. 1 (1) (4), *supra* note 28, 399), and in a total of 12 regional seas conventions between 1976 and 2003 (Baltic Sea, Black Sea, Caspian Sea, Gulf of Guinea, Mediterranean Sea, Northeast Atlantic, Northeast Pacific, Persian Gulf, Red Sea, Southeast Pacific, South Pacific, and West Indian Ocean). See A.-C. Kiss & D. Shelton, *International Environmental Law* (1991), 117; P. Birnie, A. Boyle & C. Redgwell, *International Law and the Environment*, 3rd ed. 2009), 390-398.

90 *U.S.–Canada Agreement on Air Quality* Art. 1 (1), *supra* note 34, 678-679. Furthermore, Art. 1 (2) exempts (unlike the LRTAP Convention) "effects of a global nature" from the definition of transboundary air pollution. For background, see M. L. Glode & B. N. Glode, 'Transboundary Pollution: Acid Rain and United States-Canadian Relations', 20 *Boston College Environmental Affairs Law Review* (1993) 1, 1; J. L. Roelofs, 'United States-Canada Air Quality Agreement: A Framework for Addressing Transboundary Air Pollution Problems', 26 *Cornell International Law Journal* (1993) 2, 421.

91 According to the German Government's explanatory memorandum to Parliament (*Denkschrift zu dem Übereinkommen vom 13. November 1979 über weiträumige grenzüberschreitende Luftverunreinigung*, Bundestags-Drucksache 9/1119, 2 December 1981, 14), "radioactive substances are not covered" (translation by the authors). See also A. Rest, 'Tschernobyl und die internationale Haftung', 37 *Versicherungsrecht* (1986) 25, 609, 612-613 (effects of radioactive air pollution "not contemplated at the time", translation by the authors). But see the Austrian Government's statement during the *travaux préparatoires* of the Convention in January 1979 (UN Doc ENV/AC.9/CRP.5/Add.3, 2-3, para. 31 (copy on file with authors) (suggesting that the scope of the Convention "should also include the study of possible negative effects resulting from the peaceful uses of nuclear energy on the environment of a State or States other than the State within which such activities are carried out"). See H. J. Heiss, 'Legal Protection Against Transboundary Radiation Pollution: A Treaty Proposal', 4 *Fordham Environmental Law Review* (2011) 2, 167, 193-194 (note 163). In this sense also D. Rauschning, 'Legal Problems of Continuous and Instantaneous Long-Distance Air Pollution: Interim Report', in ILA, *Report of the Sixty-Second Conference* (1987), 198, 219; and P. J. Sands, *Chernobyl: Law and Communication: Transboundary Nuclear Air Pollution – The Legal Materials* (1988), 163 (definition "clearly wide enough to bring radioactive fallout within the scope of the Convention"). See Murase, *First Report*, *supra* note 3, 50-51, para. 76. It is worth noting in this context that Chapter V of the 1995 *UNEP Global Programme* (*supra* note 30, 41-44, paras. 107-113), which operates under the similar *UNCLOS* definition of pollution (supra

members,[92] the Drafting Committee therefore decided to delete the term 'energy' and only refer to 'substances', subject to future explanation in the commentaries; ultimately, the commentary on draft guideline 1 now affirms that "it is the understanding of the Commission that, for the purposes of the draft guidelines, the word 'substances' includes 'energy'. 'Energy' is understood to include heat, light, noise and radioactivity introduced and released into the atmosphere through human activities".[93]

The Special Rapporteur's next (third) report in 2016 is scheduled to deal with the *sic utere tuo* principle; sustainable development (utilization of the atmosphere and environmental impact assessment); equity; special circumstances and vulnerability.[94] Subsequent reports in turn are to address the issues of prevention, due diligence, and precaution (2017); the interrelationship with other relevant fields of law (law of the sea, international trade law, and international human rights law, 2018); compliance, implementation and dispute settlement (2019). While it remains to be seen how much of the torso will undergo further amputations in light of the Commission's ominous 'understanding', the project now appears to be inexorably – if haltingly – on its way towards characterizing at least the broad contours of an international law of atmospheric resources.[95]

note 89), also covers emissions of radioactive substances. See VanderZwaag & Powers, *supra* note 30, 428.

92 During debates at the 66th and 67th sessions, some Commission members proposed deletion of the reference to radioactive/radionuclide emissions. See Murase, *Second Report*, *supra* note 52, 9-10, para. 13; and ILC, *Summary Record of the 3247th Meeting*, *supra* note 69.

93 *Summary Record of the Commission's 3288th meeting on 6 August 2015*, UN Doc A/CN.4/SR.3288 (22 September 2015), 4 (copy on file with the authors); and Chapter V of the ILC *Report on the Work of its 67th Session*, *supra* note 70, 30 (commentary no. 9 on draft guideline 1, sub-para. b).

94 See Murase, *Second Report*, *supra* note 52, 47, para. 78; and Chapter V of the ILC *Report on the Work of its 67th Session*, *supra* note 70, para. 47.

95 In his *First Report* (*supra* note 3, 15-16, para. 27), the Special Rapporteur modestly suggested that "it may be a little too ambitious to talk about the 'Law of the Atmosphere' just yet", while noting the mounting momentum for a comprehensive consideration of the topic. See, e.g., J. Bruce, 'Law of the Air: A Conceptual Outline', 18 *Environmental Policy and Law* (1988) 1-2, 5; B. P. Herber, 'The Economic Case for an International Law of the Atmosphere', 9 *Environment and Planning: Government and Policy* (1991) 4, 417; A. Najam, 'Future Directions: The Case for a "Law of the Atmosphere"', 34 *Atmospheric Environment* (2000) 23, 4047; Thornes *et al.*, *supra* note 4, 249; and F. Murray, 'The Changing Winds of Atmospheric Environment Policy', 29 *Environmental Science and Policy* (2013), 115.

The systemic risks of fragmentation noted in Section B. above counsel in favor of taking a broad holistic view, at least for the purpose of critical analysis. That need not lead directly to a monolithic merger of all of the disparate pieces of the fragmented regime complex into a single centralized Law of the Atmosphere and a single international institution charged with implementing this law. There are gains from specialization in skills and knowledge. Further, merging and centralizing institutions can pose new problems, such as bogging down information flow and decision making, magnifying the costs of errors, forgoing the learning arising from variation, and vesting too much power in centralized authority.

Thus, an optimal approach to a complex multifaceted problem like the atmosphere may be neither piecemeal fragmentation nor unified centralization, but rather a holistic analysis of system performance, coupled with the design of mechanisms for communicating and coordinating among the multiple specialized institutional actors, so as to correct the countervailing risks of omitted voice and disregard.[96] Such mechanisms might include, for example:

1. giving notice of each body's deliberations and actions to other relevant bodies, so that diverse voices can be heard on pending decisions and can be aware of potential impacts on their domains;
2. holding periodic joint meetings of key bodies, so that they can deliberate together on matters of shared interest;
3. assembling a comprehensive system of monitoring and data collection to assess the status and trends of atmospheric resources;[97] and
4. creating an atmosphere policy oversight or coordination body, authorized to assess the field broadly, and to review impact assessments prepared by the various specialized bodies, so that interactions, gaps, countervailing risks, co-benefits, and cumulative effects can be assessed and managed in concert, tradeoffs among regime components can be resolved, synergies can be pursued, priorities for future action can be charted, and learning can be shared across domains.[98]

In this perspective, *de lege aëris ferenda*, even with (or in spite of) the 'understanding', the ILC's project on protection of the atmosphere may still be

96 Stewart, *supra* note 38, 269; Wiener & Graham, *supra* note 39, 267.

97 J. B. Wiener, 'Toward an Effective System of Monitoring, Reporting and Verification', in S. Barrett, C. Carraro & J. de Melo (eds.), *Towards a Workable and Effective Climate Regime* (forthcoming 2015).

98 J. B. Wiener & D. L. Ribeiro, 'Impact Assessment: Diffusion and Integration', in F. Bignami & D. Zaring (eds), *Comparative Law and Regulation* (forthcoming 2015). The *UNFCCC* already calls for policy impact assessments in Article 4(1)(f).

able to develop a "realistic utopia"[99] – that is, a holistic analytic perspective, and an appraisal of the merits of various potentially constructive legal mechanisms to redress the dysfunctions of fragmentation.

[99] Cf. F. Francioni, 'Realism, Utopia, and the Future of International Environmental Law', in A. Cassese (ed.), *Realizing Utopia: The Future of International Law* (2012), 442, 443.

E. Additional Note by the Authors (August 2016)

At its 68th session (Geneva, 2 May-10 June and 4 July-12 August 2016), the ILC considered the Special Rapporteur's Third Report on the Protection of the Atmosphere[100] and on the basis of the report of the Drafting Committee provisionally adopted draft guidelines 3-7 and a preamble paragraph,[101] together with commentaries thereto. In its report to the UN General Assembly[102], the Commission reiterated its request to States for comments and further information.

The Special Rapporteur (Prof. Shinya Murase) indicated that in 2017 the Commission could deal with the question of the interrelationship of the law of the atmosphere with other fields of international law (such as the law of the sea, international trade and investment law and international human rights law), and in 2018 with the issues of implementation, compliance and dispute settlement relevant to the protection of the atmosphere, with the intention of completing the first reading of the topic that year.

The text of the draft guidelines, together with the preamble, as provisionally adopted so far is reproduced below.

Preamble[103]

...

Acknowledging that the atmosphere is essential for sustaining life on Earth, human health and welfare, and aquatic and terrestrial ecosystems,

Bearing in mind that the transport and dispersion of polluting and degrading substances occur within the atmosphere,

Recognizing therefore that the protection of the atmosphere from atmospheric pollution and atmospheric degradation is a pressing concern of the international community as a whole,

100 *Third report on the protection of the atmosphere*, UN Doc. A/CN.4/692, 25 February 2016.

101 *Titles and texts of draft guidelines 3, 4, 5, 6 and 7 together with a preambular paragraph*, UN Doc. A/CN.4/L.875, 10 June 2016.

102 *Official Records - 71st Session*, Chapter VIII, UN Doc. Suppl. No. 10, A/71/10, 18 August 2016.

103 Some other paragraphs may be added and the order of paragraphs may be coordinated at a later stage.

Aware of the special situation and needs of developing countries,

Recalling that these draft guidelines are not to interfere with relevant political negotiations, including those on climate change, ozone depletion, and long-range transboundary air pollution, and that they also neither seek to "fill" gaps in treaty regimes nor impose on current treaty regimes legal rules or legal principles not already contained therein,

...

Guideline 1: Use of terms

For the purposes of the present draft guidelines,

(a) "Atmosphere" means the envelope of gases surrounding the Earth;

(b) "Atmospheric pollution" means the introduction or release by humans, directly or indirectly, into the atmosphere of substances contributing to deleterious effects extending beyond the State of origin of such a nature as to endanger human life and health and the Earth's natural environment;

(c) "Atmospheric degradation" means the alteration by humans, directly or indirectly, of atmospheric conditions having significant deleterious effects of such a nature as to endanger human life and health and the Earth's natural environment.

Guideline 2: Scope of the guidelines[104]

1. The present draft guidelines [contain guiding principles relating to] [deal with] the protection of the atmosphere from atmospheric pollution and atmospheric degradation.

2. The present draft guidelines do not deal with, but are without prejudice to, questions concerning the polluter-pays principle, the precautionary principle, common but differentiated responsibilities, the liability of States and their nationals, and the transfer of funds and technology to developing countries, including intellectual property rights.

3. The present draft guidelines do not deal with specific substances, such as black carbon, tropospheric ozone and other dual-impact substances, which are the subject of negotiations among States.

4. Nothing in the present draft guidelines affects the status of airspace under international law nor questions related to outer space, including its delimitation.

[104] The alternative formulations in brackets will be subject to further consideration.

Guideline 3: Obligation to protect the atmosphere
States have the obligation to protect the atmosphere by exercising due diligence in taking appropriate measures, in accordance with applicable rules of international law, to prevent, reduce or control atmospheric pollution and atmospheric degradation.

Guideline 4: Environmental impact assessment
States have the obligation to ensure that an environmental impact assessment is undertaken of proposed activities under their jurisdiction or control which are likely to cause significant adverse impact on the atmosphere in terms of atmospheric pollution or atmospheric degradation.

Guideline 5: Sustainable utilization of the atmosphere
1. Given that the atmosphere is a natural resource with a limited assimilation capacity, its utilization should be undertaken in a sustainable manner.
2. Sustainable utilization of the atmosphere includes the need to reconcile economic development with protection of the atmosphere.

Guideline 6: Equitable and reasonable utilization of the atmosphere
The atmosphere should be utilized in an equitable and reasonable manner, taking into account the interests of present and future generations.

Guideline 7: Intentional large-scale modification of the atmosphere
Activities aimed at intentional large-scale modification of the atmosphere should be conducted with prudence and caution, subject to any applicable rules of international law.

Guideline 8: International cooperation
1. States have the obligation to cooperate, as appropriate, with each other and with relevant international organizations for the protection of the atmosphere from atmospheric pollution and atmospheric degradation.
2. States should cooperate in further enhancing scientific knowledge relating to the causes and impacts of atmospheric pollution and atmospheric degradation. Cooperation could include exchange of information and joint monitoring.