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Future shape of international law to address pollution of global significance affecting the Earth's ecosystems:

Consolidated report of initial consideration by experts

Contents

I. Introduction

1. In the recommendations submitted to the second session of the United Nations Environment Assembly from a meeting of senior government officials held in Montevideo in September 2015 concerning the midterm review of the fourth Programme for the Development and Periodic Review of Environmental Law (widely known as "Montevideo Programme IV"), it was emphasized that a more holistic approach would be necessary in international law to address global environmental issues. In particular, "pollution of global significance" was identified as an important area where there were gaps in the existing international legal instruments, and a more holistic approach would be required at the global level.

2. In accordance with United Nations Environment Assembly resolution 2/19 on the midterm review of Montevideo Programme IV and in pursuance of the above subject, the secretariat of the United Nations Environment Programme, through its Law Division, convened an informal brainstorming meeting of eminent experts in the field of international environmental law at the Palais des Nations in Geneva on 2 and 3 May 2016, and an informal meeting of experts at the same venue on 27 and 28 October 2016.

3. The purpose of those meetings was to consider the future shape of international law that enables the international community to address more holistically pollution of global significance affecting planetary ecosystems and human health, including through emission or release of harmful anthropogenic substances, with a view to enhancing effectiveness of and synergy among the existing international legal instruments and international processes, and filling gaps in the existing instruments to address such pollution. The initial segment of the May 2016 brainstorming meeting was to provide also an opportunity to informally interact with members of the International Law Commission to address this subject.

4. At each of those meetings, with the facilitation by the Deputy Director of the Law Division representing the secretariat, eminent experts, invited in their personal capacities, exchanged their views and opinions on various aspects of the subject in an informal and constructive atmosphere. The issues discussed during the respective meetings included the following:

(a) The role of, and gaps in, international law to address pollution of global significance affecting the Earth's ecosystems;

(b) Ways and means to fill gaps in and strengthen the existing international legal instruments and international processes to address pollution of global significance affecting the Earth's ecosystems;

(c) A future shape of international law that helps countries to improve their response to pollution of global significance affecting Earth's ecosystems, including international legal instruments and international processes in the field of chemicals.

5. The highlights of the views, opinions and observations expressed by the experts during the meetings are presented below. It should be noted that those experts participated in their personal capacities and their contribution to the meetings should be considered as such.

6. The list of participants is contained in annex I to the present report. Some experts attended both meetings, while some others attended one of those meetings only.

7. Updates on certain issues arising from relevant developments during the ensuing period from November 2016 to December 2017 are contained in footnotes to the pertinent points.

II. Conceptual basis for the consideration of the future shape of international law to address pollution of global significance affecting the Earth's ecosystems

8. For the consideration of the future shape of international law to address pollution of global significance affecting the Earth's ecosystems, the following serves as a conceptual basis:

(a) "International law" should be understood to address systems of international treaties, principles (as source of customary law), non-legally binding international instruments, and other relevant international processes (such as decision-making processes of the governing bodies of the treaties concerned).

(b) By making an approach "holistic", it means to:

(i) Address pollution affecting the entirety of planetary ecosystems, and through them, affecting human health. The concept of "planetary boundaries", as highlighted by scientists, provides a scientific basis to identify clusters of planetary-scale issues (e.g. atmosphere, oceans, biodiversity, chemicals) to be taken into account in addressing pollution of global significance.

(ii) Include horizontal inter-relationships among different international treaties and other instruments in the field of the environment, as well as between international environmental law and international law in other fields (such as human rights, trade, investment, etc.); and vertical inter-relationships at global, regional and national levels.

(iii) Address States and non-state actors (including business, industry and citizens).

9. For the purpose of this report, a "gap" means a system where there is no or inadequate international law, and/or lack of, or inadequate implementation of the obligations and/or commitments under the existing international legal instruments or international processes.

III. The role of, and gaps in, international law to address pollution of global significance affecting the Earth's ecosystems

A. Overview

10. Over the past five decades, international concern over a range of global and/or transboundary environmental problems, especially those related to pollution, has grown considerably. To address those problems, many international treaties and other instruments have been adopted, and international processes established.

11. Approaches taken to develop the existing international legal instruments have often been fragmented, because each responded to a specific environmental problem. They resembled patchworks. Consequently, there was fragmentation of international environmental law. The existing international treaties in the field of the environment (often cited as multilateral environmental agreements) each established its own governing system, and it often contributed to further fragmentation in international processes and institutional arrangements.

12. Although a growing body of scientific evidence revealed the need to address pollution affecting the entirety of planetary ecosystems in a more holistic manner, international law at present falls short of it. The gap between science and law is quite significant, resulting in the law lagging behind and not being able to respond to the current challenges.

13. The present gaps in international law in addressing pollution of global significance might be generally clustered as follows:

(a) Subject matters;

(b) Scope;

(c) Effectiveness;

(d) Global architecture.

B. Atmosphere

14. Among the pollution of international concern affecting the atmosphere, the destruction of the ozone layer and climate change have been progressively addressed by global treaties, namely the 1985 Vienna Convention for the Protection of the Ozone Layer and the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer; and the 1992 United Nations Framework Convention on Climate Change, the 1997 Kyoto Protocol and the 2015 Paris Agreement.

15. Transboundary air pollution has been addressed at the regional level. The 1979 Convention on Long-range Transboundary Air Pollution and related protocols, developed under the auspices of the United Nations Economic Commission for Europe, provide a legally binding regime to govern transboundary air pollution in Europe and North America. The 2002 Association of Southeast Asian Nations Agreement on Transboundary Haze Pollution addresses haze pollution in that region.

16. However, despite important progress has been made in advancing knowledge and information on the protection of the atmosphere, significant gaps exist in regulating global air quality.[1] Time is ripe to consider the development of an international regime on air pollution at the global level.

17. In the absence of a universal treaty governing the protection of the atmosphere, some thoughts should be put into developing norms. In this regard, the ongoing work of the International Law Commission, through its special rapporteur on the protection of the atmosphere, should be recognized and further carried forward.[2]

18. In addition, there is the need to address pollution associated with atmospheric and ocean currents in a more integrated manner, noting a dynamic interface between them.

C. Marine environment

19. Since the late 1960s, a large number of international conventions and protocols have been developed to address certain aspects of the protection of marine and coastal environment from pollution, including those at the global and regional levels. The 1982 United Nations Convention on the Law of the Sea, in articular its part XII concerning the marine environment, provides, among other things, general obligation of States to develop laws, regulations and other measures to control marine pollution from various sources.

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[1] The United Nations Environment Assembly, in its resolution 3/8 of 6 December 2017, entitled "preventing and reducing air pollution to improve air quality globally ", among other things, called on member States to pursue a shared response and to identify solutions to address air pollution, including, inter alia, by strengthening intergovernmental cooperation to address and reduce the negative impacts of air pollution, and promoting increased cooperation between the United Nations Environment Programme and relevant international organizations in order to strengthen the actions of those organizations on air quality.

[2] The International Law Commission of the United Nations, at its sixty-ninth session in 2017, made further progress to prepare the draft guidelines on the protection of the atmosphere, building upon the fourth report by the special rapporteur on the subject. The outcome of its work was subsequently considered by the Sixth Committee of the General Assembly at its seventy-second session later in 2017. The Commission, at its seventieth session in 2018, is expected to further elaborate the draft guidelines on the basis of the fifth report of the special rapporteur.

20. Regional seas conventions have been progressively developed to protect the marine and coastal environment of the respective regions. Those include: the 1976 Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean; the 1978 Kuwait Regional Convention for Co-operation on the Protection of the Marine Environment from Pollution; the 1981 Convention for Co-operation in the protection and Development of the Marine and Coastal Environment of the West and Central African Region; the 1981 Convention for the Protection of the Marine Environment and Coastal Area of the South-East Pacific; the 1982 Regional Convention for the Conservation of the Red Sea and Gulf of Aden Environment; the 1983 Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region; the 1985 Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern Africa Region; the 1986 Convention for the Protection of Natural Resources and Environment of the South Pacific Region; the 1992 Convention on the Protection of the Black Sea Against Pollution; the 1992 Convention on the Protection of the Marine Environment of the Baltic Sea Area; the 1992 Convention for the Protection of the Marine Environment of the North-East Atlantic; the 2003 Framework Convention for the Protection of the Marine Environment of the Caspian Sea.

21. Regarding marine pollution from vessels and dumping, the relevant international treaties include: the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter and its 1996 London Protocol; and the 1973 International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto and by the Protocol of 1997. In addition, under the auspices of the International Maritime Organization, the following international treaties concerning certain types of marine pollution have been concluded: the 1969 International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties; the 1990 International Convention on Oil Pollution Preparedness, Response and Co-operation; the 2000 Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances; the 2001 International Convention on the Control of Harmful Anti-Fouling Systems on Ships; the 2004 International Convention for the Control and Management of Ships' Ballast Water and Sediments; the 2007 Nairobi International Convention on the Removal of Wrecks; the 2009 Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships.

22. With regard to international non-legally binding instruments, the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, adopted in November 1995 by the Intergovernmental Conference which met for that purpose in Washington D.C., provides a international policy framework to address marine pollution from land-based activities.

23. However, there are significant gaps in a global framework on the marine environmental protection.

24. In particular, there are gaps in the following areas where there is no comprehensive global regulatory regime or otherwise inadequate international law to control pollution:

(a) Marine plastic debris;

(b) Eutrophication of oceans;

(c) Ocean acidification;

(d) Marine spatial planning;

(e) The protection of the marine environment in areas beyond national jurisdiction.

Consideration should be given as to what strategic work would be required in those areas.[3]

[3] The General Assembly of the United Nations, in its resolution 71/312 of 6 July 2017, endorsed the declaration entitled "Our ocean, our future: call for action" adopted by the United Nations Conference to Support the Implementation of Sustainable Development Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development. Paragraph 13 of the declaration called on all stakeholders, among other things,

25. With regard to marine spatial planning, the guidance document developed under the auspices of the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization (such as the document entitled "Step-by-Step Approach for Marine Spatial Planning toward Ecosystem-based Management 2009") could be further developed into principles.

26. It should be noted that the 2013 Amendment to the Protocol to the London Convention on marine geo-engineering addressed, among other things, ocean fertilization as a means to addressing climate change mitigation.

D. Chemicals and wastes

27. In the field of chemicals and wastes, there has been progressive development of international legal instruments particularly since the late 1980s. At the global level, after the adoption of the Vienna Convention and the Montreal Protocol to regulate certain chemical substances for the protection of the ozone layer (which are normally placed in its own category as "ozone treaties"), international treaties focusing specific problems of chemicals and wastes have been adopted, namely the 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, the 1998 Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, the 2001 Stockholm Convention on Persistent Organic Pollutants and the 2013 Minamata Convention on Mercury.

28. With regard to transboundary movements of hazardous wastes, there are a number of regional conventions and protocols, including the1991 Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa, the 1992 Regional Agreement on the Transboundary Movement of Hazardous Wastes (adopted in Panama), the 1995 Convention on the Ban of the Import into the Forum Island Countries and the Control of Transboundary Movement and Management of Hazardous Wastes within the South Pacific Region (Waigani Convention), the 1996 Protocol on the Prevention of Pollution of the Mediterranean Sea by Transboundary Movements of Hazardous Wastes and Their Disposal and the 1998 Protocol to the Kuwait Regional Convention on the Control of Marine Transboundary Movements and Disposal of Hazardous Wastes and Other Wastes.

29. Under the auspices of International Labour Organization, the conventions to set out international labour standards on chemicals have been developed, including the conventions concerning chemicals at work (1990) and major industrial accidents (1993), in addition to the earlier conventions concerning the use of specific chemicals at work, including the use of white lead in painting (1921); protection against hazards of poisoning arising from benzene (1971); prevention and control of occupational hazards caused by carcinogenic substances and agents (1974); and safety in the use of asbestos (1986).

30. Also, the conventions and protocols governing the control of pollution from ships and dumping at sea, including those developed under the auspices of the International Maritime Organization, cover a range of chemicals and wastes related issues which are of direct relevance to the marine environment. Furthermore, the regional seas conventions and protocol address certain types of chemicals and waste related pollution in the marine and coastal areas in a number of regions.

31. Regarding international non-legally binding instruments, the Strategic Approach to International Chemicals Management, adopted by the International Conference on Chemicals Management at its first session in February 2006, provides a time-bound international policy framework for Governments and all other stakeholders for achieving the sound management of chemicals throughout their lifecycles by 2020

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to accelerate actions to prevent and significantly reduce marine pollution of all kinds, particularly from land-based activities, including marine debris, plastics and microplastics, nutrient pollution, untreated wastewater, solid waste discharges, hazardous substances, pollution from ships and abandoned, lost or otherwise discarded fishing gear, as well as to address, as appropriate, the adverse impacts of other human-related activities on the ocean and on marine life, such as ship strikes, underwater noise and invasive alien species.

consistent with the Johannesburg Plan of Implementation.

32. However, there are gaps in addressing certain emerging issues, such as in the areas of:

(a) Lead in paint;[4]

(b) Nanomaterials;

(c) Chemicals in products;

(d) Persistent pharmaceuticals;

(e) Endocrine disrupting chemicals; and

(f) Cadmium.

33. It is noted that the Strategic Approach to International Chemicals Management has provided a venue for discussing emerging issues, such as health and chemicals and endocrine disrupting chemicals, where science-policy interface could be pursued. The existing emerging policy issues being addressed under it should be recalled. It should get inputs from and cooperation of wider communities, for instance the Convention on Biological Diversity.

34. Regarding the "science-policy" linkage, consideration of new and emerging issues should be done in a more systematic way. Since the existing bodies, such as the Chemicals Review Committee of the Rotterdam Convention and the Persistent Organic Pollutants Review Committee of the Stockholm Convention have a narrow scope defined by the mandate of the respective conventions, the establishment of an international body (e.g. an intergovernmental panel) in the field of chemicals, similar to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services and inspired also by the Intergovernmental Panel on Climate Change, would deserve due consideration, in order to bring it to more institutional approach.

35. While emphasizing the importance of national level implementation, it should be noted that chemicals itself is a complex subject which requires scientific knowledge about chemicals, health and the environment, and relevant knowledge needs to be made accessible. Different sectors would each need knowledge of effects of chemicals. In that context, there is the need for strengthening national capacities, including legal structures.

36. There is the need to link institutions with those who are at the "lower level of economic ladder" who need to know threats posed by chemicals. The existing information platforms, such as Infomea and ECOLEX, should be recalled in that context.

37. The relevance of a Pollutant Release and Transfer Register to chemicals management (particularly as it relates to discharge of chemicals) should be noted. In that context, the Organisation for Economic Co-operation and Development Guidelines for Pollutant Release and Transfer Register may be recalled.

[4] The United Nations Environment Assembly, at its third session, adopted resolution 3/9 entitled "Eliminating exposure to lead paint and promoting environmentally sound management of waste lead-acid batteries", and among other things, encouraged Governments that have not yet done so and in the light of national circumstances to develop, adopt and implement legislation or regulations and to support the development of private sector strategies to eliminate lead paint, and to undertake actions throughout the value chain, including disposal, in order to remove the risks such paints pose, especially to vulnerable groups including pregnant women, infants and children.

E. Antimicrobial resistance and pollution

38. There has been growing concern on antimicrobial resistance and its linkage to environmental pollution, and there is the need to clarify how it works in the environment. [5]

F. Pollution-biodiversity linkage

39. Because pollution poses threats to biological diversity, pollution should be considered also from the perspective of conservation of biological diversity and the framework of the Convention on Biological Diversity. Also, the impact of pollution to migratory species of wild animals and the role of the Convention for the Conservation of Migratory Spices of Wild Animals should be noted. Further improvement would be necessary to ensure coherence of policies among pollution and biodiversity related international legal instruments and international processes.[6]

G. Procedural aspects

40. Inadequate implementation of environmental impact assessment and the procedural rights under Principle 10 of the Rio Declaration on Environment and Development as well as inability to take into account the socio-economic considerations of the impacts of pollutants also reflect critical gaps.

41. Consideration should be given to further developing an international regime on environmental impact assessment and strategic environmental assessment in a transboundary context.

42. States' obligations to protect the environment in a transboundary context also need to be further clarified.

H. Implementation and effectiveness

43. There is a gap in the implementation of multilateral environmental agreements. The implementation rate of the existing international legally binding instruments has been low, and more action is needed for enhancing national implementation, including by strengthening national legislation.

44. It is difficult to identify indicators for measuring success, which is important to address implementation gaps. More clarity is needed as to what "effectiveness" would mean. For instance, with regard to effectiveness concerning international legal instruments in the field of chemicals, there should be more clarity as to how to determine whether chemicals risks are reduced.

45. It would be necessary to take into account how work on chemicals and wastes would be carried out in developing countries, including, for instance, informal sectors involving used products and e-wastes. It is necessary to address also "social-policy" interface, such as consideration of what divides people to put them in difficulties concerning poverty, inequality or gender. There is the need for different

[5] The United Nations Environment Assembly, at its third session adopted resolution 3/4 entitled "Environment and health", and in its section IV concerning antimicrobial resistance. among other things, underlined the need to further understand the role of environmental pollution in the development of antimicrobial resistance, the limited availability, tools for and use of environmental surveillance of anthropogenic antimicrobials, and the limited understanding of the long-term effects of antimicrobials in the environment to the health of humans, animals, plants and ecosystems.

[6] The Conference of the Parties to the Convention on Biological Diversity, in its decision XIII/10 adopted at its thirteenth meeting held in Cancun, Mexico, from 4-17 December 2016, addressed impacts of marine debris and anthropogenic underwater noise on marine and coastal biodiversity. The annex to that decision contained the Voluntary Practical Guidance on Preventing and Mitigating the Impacts of Marine Debris on Marine and Coastal Biodiversity and Habitats. The Conference of the Parties to the Convention on the Conservation of Migratory Species of Wild Animals, at its twelfth meeting held in Manila in October 2017, adopted a resolution concerning adverse impacts of anthropogenic noise on cetaceans and other migratory species, a resolution on the management of marine debris, and a resolution on oil pollution and migratory species.

kind of capacity-building, which would not be just for funding but include also training at high level. The level of non-compliance has been very broad.

46. With regard to the question of "effectiveness" concerning chemicals and wastes related conventions, there is a view that "it is far from upholding what we have". Because of the differences in those conventions each focusing on a specific approach, it has not been easy to make those conventions "effective" even under the efforts to advance synergy among them. Moreover, it has been hard to raise funds for the operations of those conventions. The proponent of that view suggests therefore that before creating new conventions, those difficult issues should be addressed.

47. While multilateral environmental agreements are each intended to set norms within their scope, consensus decision-making sometimes made it difficult to reach agreement on such matters. In this context, there is a view that the effectiveness of the Rotterdam Convention has been challenged by the inability to list chrysotile asbestos in its annex because the Rotterdam Convention, unlike other instruments, requires consensus among the Parties, instead of voting, to list that chemical.

48. There are more meetings of multilateral environmental agreements, and from the perspectives of developing countries, there is not enough capacity to prepare for and participate meaningfully in those meetings. This aspect should be taken into account in improving the effectiveness of the operation of the relevant conventions.

I. Regional vs. global approach

49. The past experience in the Asian region shows that countries in the region did not like legally binding approach to handle environmental matters and preferred a "soft" (i.e. non-legally binding) approach, although activities of those countries could have a global implication. Hence, it had been difficult to develop a regional agreement in the region. Rather, a global convention, or a "universal structure" was needed in order to get more ambitious commitments for those countries.

J. Industry and business

50. In addressing gaps in the existing regimes, it is necessary to take into account the role of industry. However, it has been difficult regulating individual businesses and companies given that international law largely governs relations between States and do not directly involve them.

K. Other relevant issues

51. Other relevant issues which require due consideration in addressing pollution of global significance include the following:

(a) Soil (including through the Convention on Biological Diversity and the United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa);

(b) Freshwater ecosystems, including international watercourses and river basins (including through the 1997 United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses and regional agreements on transboundary watercourses and river basins);

(c) Pesticides (while noting the FAO Code of Conduct on the Distribution and Use of Pesticides);

(d) Noise (such as the impact of underwater noise to marine biodiversity);

(e) Human rights and pollution;

(f) Outer space (e.g. moon);

(g) International aviation (under the International Civil Aviation Organization);

(h) Arctic area (including shipping and the Arctic Mining Assessment programme);

(i) Geo-engineering;

(j) Regional agreements in the relevant fields;

(k) Ten-year framework on sustainable consumption and production.

IV. Ways and means to fill gaps in and strengthen the existing international legal instruments and international processes to address pollution of global significance affecting the Earth's ecosystems

A. Addressing fragmentation

52. In order to understand the magnitude of fragmentation of the existing instruments, it would be useful to consider both international environmental legal structures and the structures of other legal systems. By recognizing international environmental law as part of the "big" legal system of international law, a way to handle the question of fragmentation would be revealed.

53. In the path for working towards a more holistic approach to pollution of global significance, there is the need to provide a clearer overview of the inter-linkages of related subjects, such as chemicals management and health issue, climate change and the ozone layer protection.

54. To address the question of fragmentation of international environmental law, such as those instruments in the field of chemicals, it would be necessary to take into account the existing global action plans and regional agreements, before considering an approach to develop a new global framework agreement.

55. For advancing a holistic approach in international law to address pollution of global significance, the catalytic role of the United Nations Environment Programme and the United Nations Environment Assembly should be recognized.[7]

B. Guiding principles and concepts

56. Internationally agreed principles and concepts, such as the Rio Principles and the environmental rule of law, would provide a normative umbrella under which a more holistic approach could be undertaken. "Circular economy" should be taken into account as an important concept underpinning a lifecycle approach to address pollution of global significance.

C. Ways to handle emerging issues

57. There is a view that a Paris Agreement type instrument might be useful for handling emerging issues. Such instrument would need a follow up mechanism, and it would be softer but internationally

[7] The United Nations Environment Assembly held its third session in Nairobi from 4-6 December 2017 with the overarching theme of pollution. Through its resolutions, the Environment Assembly called on States and other relevant entities and stakeholders to take appropriate action to prevent and mitigate pollution, in such areas as: air pollution; marine litter and microplastics; water pollution; soil pollution; environment and health (including the environment-health linkage in relation to chemicals and wastes, climate, biodiversity, antimicrobial resistance, and sustainable consumption and production); lead paint and waste lead-acid batteries; pollution mitigation by mainstreaming biodiversity into key sectors; and pollution mitigation and control in areas affected by armed conflict or terrorism.

agreed. In that context, a "national implementation plan" approach might be also considered. It would be founded upon an international framework for national implementation plans.

58. To address emerging issues, it would be necessary to consider who should be in charge of such matters. It is noted that the United Nations Environment Programme, as a global environmental authority, has been catalyzing consideration of those issues.

59. There is a view that while the Strategic Approach to International Chemicals Management could identify what would be emerging issues, ensuing political process should be carried out at the United Nations Environment Programme. It might be recalled also that some guidelines developed under the auspices of the United Nations Environment Programme were the pretext for developing the Basel Convention and the Rotterdam Convention.

D. Global governance of chemicals and wastes beyond 2020

60. Regarding global governance of chemicals and wastes beyond 2020:[89]

(a) A Nordic Study was undertaken to address issues associated with a future global governance regime on chemicals and wastes beyond 2020, building upon the experience in implementing the Strategic Approach to International Chemicals Management and recent developments in the relevant fields.

(b) Basic elements of the consideration of a "future platform" that follows the Strategic Approach to International Chemicals Management might include: a vision (e.g. linkage to Sustainable Development Goals and the 2030 Agenda for Sustainable Development); a scope; a governance model; financial aspects; and science-policy interface.

(c) The approaches taken by the Paris Agreement and the Arctic Council might inspire the future debate on possible options regarding global governance of chemicals and wastes beyond 2020.

(d) With regard to elements of governance, the role of civil society should be recognized.

(e) Due consideration should be given to the need of science-policy interface. The Intergovernmental Panel on Climate Change and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services might provide insights on that matter.

(f) Recalling the process to enhance synergy among the Basel, Rotterdam and Stockholm Conventions, the approach of "form follows functions" should be followed.

(g) While the overall synergy process of the Basel, Rotterdam and Stockholm Conventions

[8] The first meeting of the intersessional process considering the Strategic Approach and the sound management of chemicals and waste beyond 2020 was held in Brasilia, Brazil from 7-9 February 2017. The discussions during the meeting, as highlighted in the Co-Chairs summary, covered such areas as the vision for a future platform for the sound management of chemicals and waste beyond 2020, its possible scope, and ways in which the future platform could be realized including governance, new and emerging issues, the science-policy interface, financing, sustainable and green chemistry and national implementation.

[9] The United Nations Environment Assembly, in section I of resolution 3/4 of 6 December 2017, among other things, urged member States to intensify efforts to achieve by 2020 the goal for the environmentally sound management of chemicals and all wastes throughout their life cycle, underlining the importance of the Strategic Approach to International Chemicals Management and the overall orientation and guidance for achieving the 2020 goal of sound management of chemicals, taking into account national capacities, and encouraged Governments and relevant actors that have not yet done so and in the light of national circumstances to develop, adopt and implement effective measures and, as appropriate, national legislation or regulations aimed at minimizing the risks posed by chemicals, including heavy metals, endocrine disruptors and pesticides, in particular to pregnant women, infants and children.

has been under review, in order to address "life-cycle approach", those three conventions would need to count on the Strategic Approach to International Chemicals Management as an overall framework.

(h) By reviewing the synergy process, there is the need for overall coherence as well as practical coordination at the national level.

(i) Other relevant issues which might be addressed by the post 2020 framework would include, but not limited to, synthetic biology, antimicrobial, pharmaceutical residues, lead, cadmium and heavy metals.

E. Marine plastic debris

61. The problem of marine plastic debris arouse from the amount of plastics produced and used. Marine plastic debris, including those in the form of marine litter, have been generated largely from land-based activities. It would be important to stop chemicals becoming wastes, and in that context, the problem of microplastics might be addressed. Consideration might be given as to whether the problem of marine plastics could be addressed under the post 2020 framework for global governance of chemicals and wastes.[10]

62. There is a question as to the feasibility of developing an international treaty governing plastics, which could respond to the underlying causes of the problem of plastics becoming a source of pollution.

F. Policy and/or legal frameworks

63. There is the need to develop a framework to monitor progress towards realization of commitments related to the protection of the environment. The Sustainable Development Goals or the planetary boundaries approach could provide a framework for monitoring progress. The framework should also provide for a periodic review of progress towards realization of internationally agreed environmental goals.

64. A future framework should create avenues for dealing with new and emerging issues and creating possibilities of linkages with other areas of law, such as the regulation of synthetic biology and the recognition of the rights of nature.

65. There is the need for an innovative approach. It is necessary to examine the existing international legal instruments and international processes. For instance, the Sustainable Development Goals are considered as a kind of a platform on which the existing bodies act, while there is a question as to whether there is enough legal structure under each target and sub-targets. It is suggested that other legal structures be examined as well.

66. It is noted that at the national level, most countries have different environmental laws. It would be politically difficult to codify such laws at the international level. A framework convention would set up common norms for different countries with respect to basic principles, implementation, information and holistic coordination.

67. Regarding the question as to whether or how a framework convention on chemicals would work,

[10] The United Nations Environment Assembly, in its resolution 3/7 of 6 December 2017, entitled "marine litter and microplastics", inter alia, stressed the importance of long-term elimination of discharge of litter and microplastics to the oceans and of avoiding detriment to marine ecosystems and the human activities dependent on them from marine litter and microplastics; urged all 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 and nutrient pollution", and decided to convene (subject to the availability of resources) meetings of an open-ended ad hoc expert group to further examine the barriers to and options for combating marine plastic litter and microplastics from all sources, especially land-based sources.

there is a view that such a convention might establish a general principle or provide coordinating functions.

G. Legal hub for countries

68. It might be worth considering a "legal hub" for countries by which the problem of fragmentation of international legal instruments could be addressed and a more holistic approach applied. In that context, for instance in the field of oceans, the existing legal systems, such as those under the United Nations Convention on the Law of the Sea and the International Maritime Organization, should be noted.

69. Ecosystem-based approach required countries to develop science-law linkages and it has been proved challenging. In that regard, consideration might be given as to whether the experience in chemicals synergy could work in undertakings of ecosystem-based approach, possibly through a legal hub of related international legal instruments and international processes.

70. The work underway on the post 2020 framework for global governance of chemicals and wastes following the Strategic Approach to International Chemicals Management is a good example in addressing a range of relevant legal systems.

H. Review and further development of international environmental law

71. With regard to the further development of international environmental law, it would be helpful to take a three-steps approach, addressing "what", "how" and "who". Regarding the question of what should be addressed, it is noted that science provides the foundation for identifying them: they might include, for instance, air pollution, plastics and debris, and water issues. Considering how they should be addressed, it would need mapping of institutional landscapes, especially if a framework convention, such as that on chemicals, would be considered, or if the consideration of synergy would be merged with the discussions on the post 2020 framework for global governance on chemicals and wastes. With regard to the question of who should take the lead, there is a view that, in the field of chemicals and wastes, the United Nations Environment Programme should take the lead, together with the World Health Organization.

72. By reviewing existing conventions and protocols, it might become possible to consider ways by which the needs for addressing inefficiency or new emerging issues are built in new mechanisms. The instruments concerning certain pollution concluded under the relevant organizations should be considered.

73. The existing international legal instruments could be revived by possible amendments, developing new protocols or working through synergy, rather than negotiating new conventions. The Kigali Amendment to the Montreal Protocol, which addressed synergy among the Montreal Protocol and the United Nations Framework Convention on Climate Change and the Kyoto Protocol, is such an example.[11]

74. It is noted that measures at the national and international levels are not exclusive, like the Paris Agreement. It may be noted that some countries have established national measures to implement international measures, not necessarily involving all countries concerned.

75. It would be necessary to consider who should trigger the process to develop guidelines, norms and standards concerning pollution and to develop a comprehensive regime on pollution, and, provided that there is a political will, who should take the first step to legislate "a convention on pollution" in a holistic way. For instance, a declaration could be a source of action in that context.

[11] The amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, adopted in Kigali on 15 October 2016, had been ratified by 20 parties as of 17 November 2017, by which the threshold for the amendment to enter into force was met: it will enter into force on 1 January 2019.

I. Implementation and effectiveness

76. Improved implementation of the existing conventions has remained a huge challenge. If there were more coherence at the international level, it would be easier to implement. The cost and benefit of a "coherent project" might be examined.

77. It would be necessary to address details regarding the implementation of conventions which could be enhanced through synergy between them. For instance, there is the inter-linkage of priority issues between the Stockholm and the Basel Convention, such as on persistent organic pollutants wastes.

78. When examining the question of effectiveness of international legal instruments, the experience of implementing the Montreal Protocol should be recalled, including such aspects as compliance, monitoring of phase out, and funding for capacity building and technology transfer. The Montreal Protocol has added new chemicals under its regulation by listing of such new chemicals through amendments which are legally binding. Decision-making for listing new chemicals by the Parties to the Montreal Protocol had been done by consensus though the convention and the rule of procedure provided for voting.

J. Synergy

79. It would be useful to examine the experience in creating synergy among the Basel, Rotterdam and Stockholm Conventions, and a way as to how to evaluate synergies in those conventions. There are some benefits in the arrangements of the secretariats and in budgeting due to synergy among those conventions. Also, by promoting synergy, the awareness of the three conventions has been increased. [12]

80. On the other hand, the issue of compliance at the Rotterdam Convention did not benefit from back-to-back meetings of the three Conferences of the Parties to the Basel, Rotterdam and Stockholm Conventions held in recent years. Also, there were some challenges in convening those meetings, including technical aspects of organizing the work of the respective meetings.

81. With regard to the Minamata Convention,[13] there is view that the United Nations Environment Programme should play a role to avoid overlapping with other conventions. There is the need for more integrated reporting and guidance for that purpose.

82. Regarding the inter-linkages between pollution and biodiversity, there is the need to integrate ecosystem consideration into each international instrument and to address the question of how it could be achieved. The Convention on Biological Diversity and other ecosystem-related instruments should be recalled in that context. In case of the London Dumping Protocol referring to the inter-linkages with biological diversity clusters and climate, it appears to be one-sided from the Convention on Biological Diversity. It may be recalled also that the Joint Liaison Group has been catalytic to promote integration of ecosystem approach by each convention.

83. What is missing is a strategic oversight. While expanding synergies might be supported, including by taking into account Sustainable Development Goals, there is the need for a strategic oversight.

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[12] The thirteenth meeting of the Conference of the Parties to the Basel Convention, the eighth meeting of the Conference of the Parties to the Rotterdam Convention and the eighth meeting of the Conference of the Parties to the Stockholm Convention were held in Geneva back to back from 24 April to 5 May 2017. Those three conferences of the parties adopted several identical decisions, such as those concerning enhancing cooperation and coordination among the three conventions and synergies in preventing and combating illegal traffic and trade in hazardous chemicals and wastes.

[13] The Minamata Convention on Mercury entered into force on 16 August 2017. The first meeting of the Conference of the Parties to the Convention was held in Geneva from 24–29 September 2017. A number of decisions for operations of the Convention were adopted during that meeting.

K. Further points for consideration

84. Implementation of Agenda 2030 for Sustainable Development and the Sustainable Development Goals provides an important opportunity to consider the future shape of international law concerning pollution of global significance. Forthcoming consideration of the post 2020 framework for global governance on chemicals and wastes also provides such an opportunity, noting a study on that subject commissioned by the Nordic Council of Ministers for the Environment and Climate. Further points for consideration might include the following:

(a) How existing instruments could be expanded;

(b) Need for higher level coordination, starting with synergy;

(c) Improving different regimes;

(d) Governance, especially for a strategic oversight; and

(e) The question of whether United Nations Environment Assembly/United Nations Environment Programme would have an overall lead role.

85. Regarding the Sustainable Development Goals, there is a view that it is necessary to be aware of potential gaps, and the need to take into account ecosystem services.

86. It would be necessary to map out existing international treaties, processes and arrangements for controlling pollution of global significance, with a view to identifying the strength and weakness.

V. Possible future shape of international law to address more holistically pollution of global significance affecting the Earth's ecosystems

A. Strategic oversight

87. A possible result of pursuing a holistic approach would be the creation of a strategic oversight.

88. In the past, there were successive ad hoc responses to certain pollution problems creating a patchwork of instruments through "silo responses". To overcome an ad hoc and fragmented approach, a strategic oversight would be needed. The question of creating a new institutional arrangement might be considered in that context. Should there be a need for a new organization that provides a strategic overshight, it would mean creating a new legal framework.

89. In order to consider how such a strategic oversight could be provided, it would be necessary to examine ways in which the existing international organizations and processes as well as multilateral environmental agreements and their organs work.

90. Emphasizing the need for strengthening a strategic oversight, there is an expectation that the United Nations Environment Programme / the United Nations Environment Assembly should carry out such oversight.

B. Improved arrangements among the existing international legal instruments and international processes

91. To consider how to improve arrangements among the existing international legal instruments and international processes to address pollution of global significance, the following points might be taken into account:

(a) Formalities provided by international legal instruments;

(b) Importance of science-policy interface, recognizing that science is the primary basis for action;

(c) Governance issues;

(d) Gaps in norms, scope and implementation;

(e) Coordinating process for revitalizing the existing instruments.

92. To strengthen the implementation of a range of multilateral environmental agreements, measures might be needed for sharing experiences, preparing legislation guidelines to implement multilateral environmental agreements and develop ways to finance multilateral environmental agreements.

93. Addressing institutional aspects, there is a view that the United Nations Environment Programme should take the lead and the United Nations Environment Assembly should set international scene and provide recommendations to multilateral environmental agreements, taking into account various mandates of multilateral environmental agreements, and to other international organizations.

94. There would be the question of how to ensure compliance with resolutions of the United Nations Environment Assembly by multilateral environmental agreements or by other international organizations. Noting the differences in the mandates of different organizations, there would also be a question as to how the mandate of the United Nations Environment Assembly would be considered or aligned with, for example, the mandate of the International Maritime Organization. In that context, there is a view that establishing a new organization might be considered as an alternative.

C. Further development of international legal instruments

95. There should be a legal system to address global change in the field of the environment and from the perspective of global benefits. [14] The Sustainable Development Goals would be considered a unifying factor to consolidate the existing legal systems. The Aichi Biodiversity Targets would be another example of a unifying factor. The environmental rule of law would be considered as an umbrella concept.

96. It would be necessary to consider the balance between "making new instruments" and "making existing instruments work".

97. It is considered important not only to address "implementation gap" in the existing international law but also "needs" for international law. The Montevideo Programme enabled the United Nations Environment Programme to take a strategic approach and guided the organization in the development of international law in the field of the environment, leading to policy-making process in the relevant fields. To address emerging issues, further development of international legal instruments might be necessary. It might be recalled that the protection of the marine environment from land-based activities, for instance, was an area where a strategic approach was to be taken.

98. The framework approach would have an added value to integrate areas of action where the existing instruments may not work, and to provide a basis for further development of international legal instruments. For example, the United Nations Convention on the Law of the Sea sets out general obligation, and left the details to be developed through subsequent actions. As another example, the Bali Guidelines on Rio Principle 10 had enabled Asian countries to develop national law in the related fields. Certain type of "framework approach" would be needed for a strategic oversight.

[14] There is the initiative by the Government of France proposing the development of a "Global Pact on the Environment" under the auspices of the General Assembly of the United Nations, following a summit on the subject held in New York on 19 September 2017.

99. There is an opinion that extending the scope of the existing conventions could be considered to address emerging issues. For instance, according to that opinion, endocrine disrupters might be added to the Stockholm Convention, and lead and cadmium be added to the Minamata Convention.

100. There is a view that in the context of discussions on the post 2020 framework for global governance on chemicals and wastes, a life-cycle approach should be considered. So far, the Minamata Convention has been the only convention which has adopted a life-cycle approach. To consider governance of all pollution, a life-cycle approach should be taken into account.

101. It is important to undertake a bottom-up approach based on science. In the field of chemicals, the establishment of an independent scientific body, modeled on the Intergovernmental Panel on Climate Change and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services might be considered.

102. Regarding the question as to whether a framework convention on chemicals should be developed, there is a view that the examination of the need for such convention should be accompanied by an analysis of the existing international legal instruments and global action plans.

103. There is an opinion that under a general framework convention, the existing conventions could be grouped and brought into certain types of institutional arrangements under its umbrella, including those in which the autonomy of governance of the respective conventions could be maintained.

104. Under the World Trade Organization, countries with gaps in trade rules resolved the matter by bilateral agreements, and the implication of applying such practice in the field of the environment might be examined.

D. Framework approach

105. There is a view that there should be a balance between a vision and pragmatism, and a vision should be developed first. In order to provide a vision, political will would be needed. Looking into what would be a vision and what would be achievable, a framework approach could be a compromise. There could be a couple of "frameworks" of international law to address pollution of global significance. State Parties might see such frameworks as a vision.

106. There is an opinion that a framework approach would have an advantage of being able to provide a strategic oversight. It would not overburden and leave rooms for more stringent measures to follow. It would help reduce fragmentation and proliferation of multilateral environmental agreements. It would also provide flexibility in developing new legal instruments or agreements. There would also be economy of scale, as, for instance, it would not be necessary to develop different procedures, such as the rules of procedure.

107. There are examples of framework agreements followed by further measures under protocols. The Vienna Convention for the Protection of the Ozone Layer is such an example. It provided the basis for conducting research, which prepared the ground for further action, including the adoption of the Montreal Protocol and subsequent amendments. The Convention on Long-range Transboundary Air Pollution, developed under the auspices of the United Nations Economic Commission for Europe, is another example. United Nations Economic Commission for Europe Executive Body has been undertaking an oversight of that Convention and providing integrated decision-making. Those conventions as well as the United Nations Framework Convention on Climate Change have shown what a "framework" could offer.

108. Significant amount of information concerning air pollution and marine pollution already exists, and a framework convention would trigger further action, on the basis of which further measures could be adopted. A framework convention could be supplemented by a protocol or amendments to it in order to make it comprehensive. It might eventually look like the United Nations Convention on the Law of the Sea. Furthering appropriate level of implementation under the framework agreement would be an issue to be addressed.

109. With regard to the question of retrofitting of the existing instruments into a new framework instrument or framework instruments, there are divergent views. One school of thoughts is that it would not be so much of problem, while another considers it difficult. As a practical example of retrofitting, it may be noted that the Canton of Geneva had a bilateral arrangement with the communities in France (namely, the Convention on the Franco-Swiss Genevois Aquifer), which provided a "framework" on the subject by which the requirements under the existing international instruments were retrofitted.

110. It would be useful if the "framework" could promote science-policy interface, and address also aspects of funding and stakeholders. It would be important to consider how to get best action from what could be offered by the "framework", for instance, on air pollution or chemicals.

111. There is a view that a framework approach might be considered in the context of the Strategic Approach to International Chemicals Management, which is time-bound, and the Basel, Rotterdam and Stockholm Conventions (including Global Environment Facility as a financial mechanism) which are not time-bound. The Strategic Approach to International Chemicals Management has provided a forum for broad political deliberations among stakeholders, including consideration of emerging policy issues, and non-state actors, along with States, are formal members, and there have been issues of being voluntary and of the balance between "light commitment" and the engagement of stakeholders. According to that view, there is the need for overall strategic oversight with regard to the relevant conventions related to chemicals and wastes and the Strategic Approach to International Chemicals Management.

E. Synergy

112. With regard to the question of things to be brought into synergy, there is a view that it might be worth considering moving procedural matters and arrangements to one institution, as the transaction cost for membership would be cheaper and more effective. One example of such procedural arrangements might be a "World Environment Court" placed in one basic structure.

113. The concept of planetary boundaries should be taken into account when considering how synergies among international legal instruments and international processes to address pollution of global significance could be enhanced.

114. There is a view that the United Nations Environment Assembly should be used to provide an opportunity to promote synergy among international legal instruments and international processes with respect to pollution of global significance, in line with its recent resolution on synergy among biodiversity related multilateral environmental agreements. An idea of clustering multilateral environmental agreements might be further pursued.

115. There is a proposal to examine the interface between human rights and the environment, including transboundary implications and human rights and in relation to business and trade. The issues relating to migration, especially internal displacement should be also considered.

F. Strengthening institutions

116. Consideration might be given as to what level of strengthening institutions would be required to address pollution of global significance. A door is open for debate on approaches to strengthen the existing institutions to address such issues as air pollution and marine plastic debris.

117. A future regime should harmonize environmental governance at the international level. For this purpose, possible measures might include the following:

(a) Establishing the United Nations Environment Assembly as a standard setting body for the environment similar to the role played by the World Health Organization as the standard setting body for matters on health;

(b) Creating an interface between regional and global agreements (in light of the fact that some regional instruments govern matters which transcend regional boundaries);

(c) Creating a mechanism for aligning activities of multilateral environmental agreements with those of the United Nations system organizations;

(d) Establishing a mechanism of bringing together all the important actors when developing a global instrument to avoid regime conflict;

(e) Harmonizing the divergent treaty regimes' decision-making processes and those of relevant intergovernmental bodies (e.g. United Nations Environment Programme, International Maritime Organization) in addressing pollution; and

(f) Creating modalities for addressing the consequences of inaction.

118. To overcome fragmentation, a vision of establishing a world environment organization might be revisited. Consideration of establishing a world environment organization might have two pillars. First pillar might be negotiating institutional architecture, and two might be how to coordinate multilateral environmental agreements that are independent and autonomous.

G. Possible future shape of international law

119. A future international framework (or frameworks) to address pollution of global significance could take any of the following forms:

(a) Existing conventions and other instruments on specific topics with enhanced arrangements to ensure synergies among them;

(b) A framework convention, with either existing conventions as its protocols or existing conventions brought into legal arrangements with the framework convention to make them mutually supportive;

(c) Integrating the existing conventions into a single umbrella convention, including in the form of a treaty establishing a world environment organization.

120. Science-policy interface would be important in any form of a future framework.

H. Enhanced engagement of non-State actors

121. In order to effectively address pollution of global significance, it would be important to engage non-state actors in the relevant processes of developing and implementing international legal instruments and international processes. In addition to specific expertise non-state actors might offer, it is associated with the issues of transparency of the process and accountability.

122. With regard to actual participation of non-state actors in the relevant forums and conferences, consideration should be given to according the right and ability to participate in such forums and conferences. For that purpose, there should be "common rules" for their participation. If citizen would have the rights to influence environmental negotiation, clarification would be necessary as to who are "interested citizen" and "his/her standing".

123. It is recalled that the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus Convention) set forth the provision for the participation of civil society. Under the Protocol on Pollutant Release and Transfer Registers to the Aarhus Convention, information on pollutants is to be recorded systematically, which might affect "branding" of private sector. The pollutant register is an example of civil society participation. With regard to the issue of "universalization" of the Aarhus Convention, it may be noted that countries outside of Europe were reluctant to join the Aarhus Convention.

124. It is noted that in certain countries, the governments often included non-state actors in its delegation for the past negotiating meetings. In those countries, it was found useful to have nongovernmental organizations as part of national delegation in advisory capacity. For example, regarding the Nagoya Protocol, there was the need for taking into account industry while ensuring participation of nongovernmental organizations. Governments should be each encouraged, at the national level, to include nongovernmental organizations before determining representation. In order to ensure transparent processes, access to documents should be guaranteed. Also, there would be issues of accreditation and actual participation.

125. There is a view that it would be useful to target specific non-state actors in some cases. United Nations Environment Programme financial initiative is such an example, which has been appreciated by industry in the Group of Twenty (G20) countries. Elements of environmental impact assessment envisage roles of such non-state actors.

126. With regard to corporate social responsibility, the Organisation for Economic Co-operation and Development guidelines on multinational corporations might be recalled.

Annex I. List of participants

Name/title	*Attendance*
Shinya Murase, Member of the International Law Commission of the United Nations, Special Rapporteur on the protection of the atmosphere	May brainstorming only
Loretta Feris, Professor of Law and Director, Institute of Marine and Environmental Law Faculty of Law, University of Cape Town, South Africa	May brainstorming and October meeting
Dinah L. Shelton, Professor, Emeritus of International Law George Washington University Law School, United States	May brainstorming only
Yukari Takamura, Professor of International Law Graduate School of Environmental Studies, Nagoya University, Japan	May brainstorming and October meeting
Daniel Magraw, Senior Fellow, Foreign Policy Institute, and Professorial Lecturer, Johns Hopkins University School of Advanced International Studies and President Emeritus, Center for International Environmental Law, United States	May brainstorming and October meeting
Alistair McGlone, Director of Alistair McGlone and Associates Ltd and member of the Aarhus Convention compliance committee and the Chair of the PRTR Protocol compliance committee, United Kingdom	May brainstorming and October meeting
Elvira Pushkareva, Professor, Russian Presidential Academy of National Economy and Public Administration, Russian Federation	May brainstorming only
Georg Karlaganis Senior Research Fellow, World Trade Institute, University of Bern, Switzerland, and Training Advisor, United Nations Institute for Training and Research (UNITAR)'s Chemicals and Waste Management Programme	May brainstorming and October meeting
Åsa Norrman, Deputy Director-General, Ministry for Environment and Energy, Sweden	May brainstorming and October meeting
Niko Urho, Senior Officer, Ministry of the Environment / Unit for International and EU Affairs, Finland	May brainstorming and October meeting
Anne Daniel, General Counsel, Constitutional, Administrative and International Law Section, Justice Canada	October meeting only
Florian Wild, Head, Legal Affairs Division, Federal Office for the Environment FOEN, Federal Department of the Environment, Transport, Energy and Communications DETEC, Switzerland	October meeting only
Marcus Schroeder, Federal Ministry for the Environment, Nature Conservation, Construction and Nuclear Safety, Division KI II 1, International Cooperation and International Legal Affairs, Germany	October meeting only
Vassilios Karavezyris, Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety, Division IG II 3, International Chemicals Safety, Sustainable Chemistry, Germany	October meeting only
Kerstin Stendahl, Deputy Executive Secretary, Secretariat of the Basel, Rotterdam and Stockholm Conventions	May brainstorming and October meeting

Name/title	*Attendance*
Juliette Kohler, Legal and Policy Advisor, Head of the Legal and Governance Unit, Secretariat of the Basel, Rotterdam, and Stockholm Conventions	May brainstorming and October meeting
Amelie Taoufiq, Legal Officer, Secretariat of the Basel, Rotterdam, and Stockholm Conventions	May brainstorming only
Gilbert Bankobeza, Chief, Legal Affairs and Compliance, Ozone Secretariat	October meeting only
Achim Halpaap Head, Chemicals and Waste Branch, Economy Division, United Nations Environment Programme	May brainstorming only
Jacob Duer, Principal Coordinator, SAICM Secretariat, Secretariat of the Minamata Convention, and the Special Programme, United Nations Environment Programme	May brainstorming only
Brenda Koekkoek, Programme Officer, SAICM Secretariat, United Nations Environment Programme	May brainstorming and October meeting
Claudia ten Have, Coordinator, Secretariat of the Minamata Convention	October meeting only
Meeting Secretariat	
Masa Nagai, Deputy Director, Law Division, United Nations Environment Programme	May brainstorming and October meeting
Barbara Ruis, Regional Environmental Governance Sub-Programme Coordinator & Legal Officer, Europe Office / Law Division, United Nations Environment Programme	May brainstorming and October meeting
Allan Meso, Legal Officer, Law Division, United Nations Environment Programme	May brainstorming only
Lara Ognibene, Legal Officer, Law Division, United Nations Environment Programme	October meeting only

Note: Key on attendance:

May brainstorming = Informal brainstorming meeting to consider the future shape of international law to address pollution of global significance affecting the Earth's ecosystems, held at the Palais des Nations, Geneva, Switzerland, on 2 and 3 May 2016.

October meeting = Informal meeting of experts to consider the future shape of international law to address pollution of global significance affecting the Earth's ecosystems, held at the Palais des Nations, Geneva, Switzerland on 27 and 28 October 2016.

The title of each participant is as at the time of the above-mentioned brainstorming meeting and the informal meeting held in 2016.