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ENVIRONMENTALLY SOUND MANAGEMENT - TOWARDS A COHERENT FRAMEWORK BRIDGING THE BASEL, THE ROTTERDAM, AND THE STOCKHOLM CONVENTIONS

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ABSTRACT

The objective of reducing the environmental footprint and adverse health effects of the materials we use and leave behind every day has been addressed with different policies and regulatory frameworks. These efforts can be subsumed under the overarching concept of “environmentally sound management” (ESM), a guiding principle of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal. However, based on the understanding that the notion of “waste” generally consists of a mixture of materials and substances, the concept of ESM is deemed appropriate for a wider scope of applications. From a policy as well as a legal perspective, the principles of ESM should therefore link the different legal frameworks which are applicable, i.e. in addition to the Basel Convention particularly the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, and the Stockholm Convention on Persistent Organic Pollutants. Such a multilateral ESM policy framework could provide the foundation for the development of important cornerstones to ensure an international level regulatory playing field and for the enhancement of proper waste management globally. Its goal is to protect and secure both the environment as well as human health in the long run.

I. OVERVIEW

The generation of wastes has overshadowed economic growth and development throughout history. Vast production and unsustainable consumption patterns and the particularly fast growing waste quantities have led to the widely shared realization that modern society is facing a waste crisis. Economic globalization additionally challenges the handling of increased flows of materials crossing borders. In order to lead the management of wastes into the right channels, the guiding objective has repeatedly been framed as the reduction of the environmental footprint and of adverse health effects which such materials potentially leave behind during their lifecycle. This goal has been aimed at through minimizing waste generation as such, as well as by managing inevitable wastes in a way that enables the re-introduction of usable materials into the production cycle (thus reducing disposable wastes as a consequence). This strategy facilitates the final treatment and disposal of residual waste materials in an environmentally compatible manner.

Such an approach is conceptualized under the notion of “environmentally sound management” (ESM) and represents the fundamental principle of the *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal*.¹ Additional ESM frameworks encompass, *inter alia*, the Organization for Economic Co-operation and Development (OECD) Recommendation C(2004)100 on the Environmentally Sound Management of Waste. Furthermore, non-binding, voluntary agreements have been established both by the International Standards Organization with the ISO 14000 series and by the European Union with the EMAS standards for organizations. ESM has also been framed as an overall objective and guideline for current attempts to address ship dismantling. However, ESM is a broad framework concept in the existing normative structure. In order to enable the concept’s effective implementation, a further elaboration of this substantive principle is necessary to provide for a starting point in improving the coherence between the different existing and emerging legal regulations. In terms of a second step, a new approach for the future could be provided by the introduction of an international ESM framework to enhance proper waste management globally. Such an approach would unhinge ESM from its somewhat conceptual regulatory origins and acknowledge ESM as an overarching core principle for the management of potentially harmful and polluting materials.

In framing the subject of ESM, particular attention should be given to the fact that wastes generally consist of a heterogeneous mixture of materials. Environmentally sound waste management encompasses the process of products’ reduction to their individual components, in order to separate reusable resources from disposable wastes. Such a complex undertaking reveals the problematic of referring to “wastes” as a uniform and apparently clear term, since wastes consist of diverse materials (products or substances) that call for specific treatments. The growing use of chemicals in production processes generates special challenges at the end of products’ usefulness, particularly when hazardous components are involved. Persistent Organic Pollutants (POPs) for instance are organic compounds that resist environ-

¹ Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, in U.N.T.S., vol. 1673; I.L.M., vol. 28, 125, 657 (1989).
<http://www.basel.int/text/con-e-rev.pdf>

mental degradation and possess toxic properties. In light of these considerations, it makes sense to apply the concept of ESM broadly by striving towards improved coherence between the different frameworks. In light of the hazards of the substances in question, this implies an approach linking the applicable legal frameworks, i.e. the *Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade* (hereinafter: RC),² the *Stockholm Convention on Persistent Organic Pollutants* (hereinafter: SC),³ and the *Basel Convention* (hereinafter BC). Such an approach would facilitate the concrete implementation of ESM, beyond the materials' classification under the Conventions, with a view to covering the entire life-cycle of harmful chemicals.

The elaboration of an international ESM framework could improve the implementation of such core standards globally. Since waste management operations are carried out at a national level, the developing and issuing of domestic legislation become an essential prerequisite for effective waste management schemes. Furthermore, the increased flow of materials across borders calls for more certainty, transparency, predictability and traceability worldwide. Enhanced transparency in particular improves predictability and thereby will help to build a coherent regulatory framework that is an essential precondition for international cooperation. An internationally harmonized legal framework is indispensable for the implementation of a level playing field of regulations and helps ensure that facilities which have invested in environmentally sound technologies maintain their competitiveness; it would also prevent the use and abuse of lower and less stringent waste management standards as pollution havens. Since effective legal frameworks for the protection of the global environment cannot be confined to national borders, the consolidation of domestic regulations and the eventual establishment of a comprehensive international legal framework represent a necessity for safety and sustainability.

Before addressing possible steps towards the development of a coherent international ESM framework, this contribution shall initially outline the concept of ESM within the existing regulations on an international level. After such a delineation of the concept's contents, the rationale for improving a linkage between the Basel, the Rotterdam, and the Stockholm Conventions shall be examined in more detail. Finally, the study is rounded off with a focus on important criteria that need particular consideration in view of the development of a coherent international ESM framework as well as with a conclusion.

II. ESM IN EXISTING LEGAL FRAMEWORKS

1. The Basel Convention Framework

The *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal* (hereinafter: BC)⁴ has become the central international legal framework addressing hazardous and other wastes. The BC regulates transna-

² Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, in U.N.T.S., vol. 2244; I.L.M., vol. 38, 337; 1734 (1998).
<http://www.pic.int/en/ConventionText/ONU-GB.pdf>

³ Stockholm Convention on Persistent Organic Pollutants, in I.L.M., vol. 40, 532 (2001).
http://www.pops.int/documents/convtext/convtext_en.pdf

⁴ See supra note 1.

tional movements of hazardous and other wastes with the general objective of reducing the generation of hazardous wastes to a minimum and to regulate transnational shipments of wastes when unavoidable. The Convention's guiding principle is the protection of the environment and human health.⁵ The BC does not ban the export of hazardous wastes completely – indeed the entry into force of the Ban Amendment⁶ is rather uncertain at present – but rather introduces the criterion of ESM as an underlying principle and benchmark for regulating transnational waste trade.⁷ Article 2(8) of the Convention introduces the concept of “environmentally sound management” and defines it as

“taking all practicable steps to ensure that hazardous wastes or other wastes are managed in a manner which will protect human health and the environment against the adverse effects which may result from such wastes.”

The Preamble to the Convention holds that transboundary movements of hazardous wastes, especially to developing countries, establish a high risk of not constituting an environmentally sound management of hazardous wastes as required by the Convention (Preambular paragraph 7bis). As a consequence, transboundary movements of wastes should be reduced to a minimum by disposing of them within the states where they were generated, as far as this ensures an environmentally sound and efficient waste management (Preambular paragraph 8; Article 4(2.b) and 4(2.d)), and by enhancing the control over the international wastes' movements (Preambular paragraph 10). The responsibility to ensure the environmentally sound waste management is thus primarily incumbent on the waste generating state;⁸ only if the environmentally sound disposal is not possible in a generating state, the transboundary movement of such materials is allowed under the Convention (Article 4(9.a)).

Indeed, the environmentally sound transportation and disposal become a precondition for permitted transboundary movements of hazardous and other wastes under the BC (Preambular paragraph 23): The state parties to the Convention are obliged to prevent the importation or exportation of wastes if they have reasons to believe that the wastes in question will not be managed in an environmentally sound manner (Article 4(2.e), (2.g), and 4(8), as well as Article 6(3.b) and para. 20 of Annex V A). As a consequence, a duty to re-import exported waste arises if the transboundary movement cannot be completed in accordance with the agreement concluded

⁵ On the elaboration and guiding principles of the Basel Convention see KATHARINA KUMMER, *International Management of Hazardous Wastes. The Basel Convention and Related Legal Rules*, New York 1995, 38-77.

⁶ The Ban Amendment is contained in the Conference Decision II/12, adopted at the Second Conference of the Parties to the Basel Convention (COP2), 25 March 1994, Geneva, Switzerland. Once the decision was adopted, the next step would have been to include a new provision in the text of the Convention. Therefore it was proposed that the ban be incorporated in the Basel Convention as an amendment with the Conference Decision III/1, adopted at the Third Conference of the Parties to the Basel Convention (COP3), 22 September, 1995, Geneva, Switzerland. For further information see <http://www.basel.int/pub/baselban.html>.

⁷ PIERRE PORTAS, *From Makers to Breakers: A New Dimension in World Wide Waste Management*, in *Sustainable Waste Management*, Ravindra K. Dhir/Moray D. Newlands/Tom D. Dyer (eds.), London 2003, 1-7, 1; see also *Basel Declaration on Environmentally Sound Management* printed in Annex II of UNEP, *Report of the Fifth Meeting of the Conference of the Parties to the Basel Convention*, 10 December 1999, UNEP/CHW.5/29, para. 3 (p. 85).

⁸ KUMMER, *supra* note 5, 56.

between the parties, and if alternative arrangements securing an environmentally sound disposal are not possible (Article 8). Furthermore, the Convention calls for the cooperation between the parties to improve the environmentally sound waste management (Article 4(2.h), Article 10 and Article 16). In particular, in cases of illegal waste traffic under Article 9 of the Convention, the states concerned are required to ensure the environmentally sound disposal of the waste in question; all the parties are held to cooperate to this end (Article 9(3) and (4)).

The BC constitutes a legally binding agreement for its state parties and firmly roots ESM as a necessary condition to fulfill parties' obligations under the Convention. Nonetheless, the concrete content of the concept requires further clarifications. For example, the manner in which the state of export can verify the importing state's waste management scheme is not described by the BC. Indeed, the general principle of state sovereignty in international law and the principle of territorial integrity limit the extent of a state's permitted survey over a foreign state – over which it has no jurisdiction – to the verification of documentation and materials that the importing state provides by itself.⁹ Furthermore, the BC does not stipulate a unique ESM standard. For this reason, every exporting state will rely on its own appreciation on what environmentally sound management means. Nevertheless, the BC has encouraged the use of standardized documents, which contain the information necessary under the Convention, such as the movement document for example, which is required to accompany waste shipments up to their disposal.¹⁰ The ESM concept has been further advanced by technical guidelines adopted by the Conferences of the Parties which provide clear direction and assistance for states to regulate operations based on standards that are in accordance with the provisions of the BC.¹¹ Furthermore, generally accepted and recognized international rules and standards in the field of packaging, labeling, and transport, as well as internationally recognized practices associated with the materials in question may also provide for valuable approaches (see Article 4(7.b)).

The management of wastes entails many different operational methods. According to the waste strategy hierarchy, preference is given to waste minimization and avoidance. The second-best solutions of final disposal, re-use, recycling and re are recommended mechanisms, preferable to landfilling or incineration.¹² ESM should be a guiding principle at every stage of the waste strategy hierarchy, with the objective that the products attain the longest life possible and cause minimum environmental impacts when reused and disposed of. However, the concrete measures that should be adopted to achieve the ESM objective are dependent on very different parameters: On the one hand the available local technical facilities have to be taken into account as well as the storage possibilities available. On the other hand, the storing or disposing state's climate will need particular consideration. Waste management operations will further depend greatly on the waste material in question. In

⁹ Ibid., 22, 57.

¹⁰ See Article 4(7.c) and Article 6(9) as well as Annex V B on the information to be provided on the movement document.

¹¹ See also KUMMER, *supra* note 5, 56-60.

¹² PAUL T. WILLIAMS, *Waste treatment and disposal*, 2nd ed., Chichester 2005, 10; see also Basel Convention, *Guidance Document on Transboundary Movements of Hazardous Wastes destined for Recovery Operations*, in *Basel Convention series / SBC No 02/02, 2002*, para. 32-33; see Article 3 Directive 2006/12/EC of the European Parliament and of the Council of 5 April 2006 on waste, OJ L 114, 27.4.2006, p. 9-21.

order to tackle such challenges, the *Technical Guidelines* established by the Technical Working Group of the Basel Convention provide the tools to aim for achieving ESM: Technical Guidelines focus on waste streams such as wastes from the production and use of organic solvents, waste oils, wastes comprising or containing Polychlorinated Biphenyls (PCBs), Polychlorinated Terphenyls (PCTs), and Polybrominated Biphenyls (PBBs), as well as POPs, wastes collected from households, used tires, biomedical and healthcare wastes, waste lead-acid batteries, waste metals and metal compounds, etc. Additionally, Technical Guidelines have been elaborated on waste management operations such as landfill, incineration on land, oil re-refining, dismantling of ships etc.¹³ The guidelines are intended to provide for a more precise approach to ESM in the context of specific waste streams including appropriate recommendations on treatment and disposal methods.

The Technical Guidelines form part of the overarching *Guidance Document on the Preparation of Technical Guidelines for the Environmentally Sound Management of Wastes Subject to the Basel Convention*,¹⁴ which was accepted as the “*Framework Document*” by Decision I/19 of the first meeting of the Conference of the Parties to the Basel Convention in December 1992.¹⁵ It follows the purposes of (i) providing information on waste avoidance and the management of wastes, (ii) guiding the national competent authorities in making the decision whether a proposed transboundary movement of waste should be consented to or rejected, and (iii) providing a framework for the further preparation of technical guidelines for the wastes subject to the Basel Convention. On this note, the Document provides some specifics on different elements of an environmentally sound waste management scheme. It addresses the wastes subjected to the Basel Convention,¹⁶ the responsibilities of the concerned parties,¹⁷ the elements of the Technical Guidelines,¹⁸ strategic guidelines,¹⁹ a comprehensive control system for ensuring the environmentally sound waste management,²⁰ the possibility of interim measures,²¹ and further hazardous waste management options and good management practices.²² According to the Framework Document, national legislation as well as a statutory regulatory framework is seen as an essential prerequisite for controlling the transboundary movements and the disposal of wastes²³. Furthermore, the Document sets up criteria to help assess ESM²⁴ and

¹³ The Basel Convention Technical Guidelines are available at <http://www.basel.int/meetings/sbc/workdoc/techdocs.html>.

¹⁴ UNEP, *Guidance Document on the Preparation of Technical Guidelines for the Environmentally Sound Management of Wastes Subject to the Basel Convention*, Basel Convention Working Documents, Secretariat of the Basel Convention, available at <http://www.basel.int/meetings/sbc/workdoc/techdocs.html> (hereinafter: Framework Document).

¹⁵ See UNEP, *Report of the First Meeting of the Conference of the Parties to the Basel Convention*, 5 December 1992, UNEP/CHW.1/24.

¹⁶ Framework Document, *supra* note 14, para. 11 and 12.

¹⁷ *Ibid.*, para. 12-13.

¹⁸ *Ibid.*, para. 13-18.

¹⁹ *Ibid.*, para. 19-22.

²⁰ *Ibid.*, para. 23-25.

²¹ *Ibid.*, para. 31-32.

²² *Ibid.*, para. 33-43.

²³ *Ibid.*, para. 7 and 8.

²⁴ *Ibid.*, para. 9(a-e). These include: An existing regulatory infrastructure and enforcement mechanism that ensures compliance with applicable regulations; sites and facilities that are authorized and equipped with adequate standards for technology and pollution control to deal with the haz-

lists principles that should be considered in the development of waste and hazardous waste strategies, which stem from different countries' national regulations.²⁵ They encompass the *source reduction principle*, the *integrated life-cycle principle*, the *precautionary principle*, the *integrated pollution control principle*, the *self-sufficiency principle*, the *proximity principle*, the *polluter pays principle*, as well as the *least transboundary movement principle*. The Framework Document explicitly emphasizes that these principles are not absolute and shall not be applied as definitions going beyond helpful guidance.

The Framework Document supports the understanding of hazardous waste management as an integrated activity connecting different players such as waste generators, carriers, disposers and other handlers, which all share the responsibility for ensuring environmentally sound management.²⁶ This approach acknowledges the fact that ESM may call for actions necessary prior to final waste disposal. For example, the proper waste classification is crucial for its environmentally sound management and relies primarily on the waste generators, which usually possess the necessary information and are in a position to properly separate waste materials. Furthermore, environmentally sound waste management also encompasses the transportation and storage of waste materials. The proper implementation of ESM therefore requires a multi-stakeholder approach, which takes into account the different stages from waste production until final waste disposal. An illustrative example for such a "cradle to grave approach" is given by the International Maritime Organization's (IMO) current undertaking to develop an international convention on the safe and environmentally sound recycling of ships, which will regulate, *inter alia*, the design, construction, and preparation of the ships, so that their safe and environmentally sound recycling is facilitated at the end of their life-cycle. Similarly, the Basel Convention Technical Guidelines for the Environmentally Sound Management of the Full and Partial Dismantling of Ships²⁷ lists preparatory procedures that should be implemented on the vessel prior to its voyage, as well as key tasks carried out by the ship dismantling facilities, the implementation of an Environmental Management Plan (EMP) that includes a mechanism on Environmental Impact Assessment (EIA) and an Environmental Management Scheme (EMS). The Guidelines thus address very different actors concerned with ESM issues in the lifecycle of a vessel.

The "International Strategy and Action Programme for the Environmentally Sound Management of Hazardous Wastes," an initiative undertaken by the Preparatory Committee to the United Nations Conference on Environment and Development (UNCED)²⁸ together with the Basel Convention Technical Working Group on Environmentally Sound Management, was influenced by the elaboration of Chapters 20

ardous wastes, in particular taking into account the level of technology and pollution control in the exporting country; sites' or facilities' operators at which wastes are managed are required to monitor the effects of those activities; appropriate action is taken in cases where monitoring gives the indication that the management of hazardous wastes have resulted in unacceptable emissions or in cases of accidental spillage; as well as adequate training of persons involved in the management of hazardous wastes.

²⁵ Ibid., para. 10.

²⁶ Ibid., para. 13 and 24.

²⁷ Basel Convention Technical Guidelines for the Environmentally Sound Management of the Full and Partial Dismantling of Ships, 2002, UNEP/CHW.6/23.

²⁸ The UNCED took place in Rio de Janeiro in 1992 under the name of the "Earth Summit".

and 21 of *Agenda 21*.²⁹ The chapters' overall objective can be summarized as the prevention to the extent possible and the minimization of the generation of hazardous wastes, as well as the management of those wastes in such a way that they do not cause harm to human health and the environment.³⁰ Accordingly, the Chapters 20 and 21 further develop the fundamental principles contained in the notion of ESM (by outlining overall targets), the basis of actions and furthermore, propose effective activities and means of implementation.

At the fifth meeting of the Conference of the Parties of the Basel Convention in December, 1999, the *Basel Declaration on Environmentally Sound Management* was adopted together with its enabling *Decision V/33*, pursuing the objective to move towards concrete implementation of the ESM concept.³¹ Activities were proposed to achieve ESM in the fields of (i) prevention, minimization, recycling, recovery and disposal of wastes, (ii) active promotion of cleaner technologies, (iii) reduction of transboundary movements of wastes, (iv) prevention and monitoring of illegal traffic, (v) improvement and promotion of institutional and technical capacity-building, and development as well as transfer of environmentally sound technologies, (vi) development of regional and subregional centers for training and technology transfer, (vii) enhancement of information exchange, education and awareness-raising, (viii) cooperation and partnership at all levels between countries, public authorities, international organizations, the industry sector, non-governmental organizations and academic institutions, and (ix) development of mechanisms for compliance with and the monitoring and effective implementation of the Convention and its amendments.³² By focusing on the implementation through specific actions and by emphasizing a broad scope of application of ESM, this agenda provides for valuable inputs towards an ESM framework.

2. Bilateral, Multilateral and Regional Frameworks Adhering to ESM

According to Article 11 BC, ESM implies an overarching instrument crucial for the admissibility of legal agreements: Parties to the Convention are allowed to enter into bilateral, multilateral and regional agreements and arrangements regarding transboundary movements of hazardous and other wastes with individual parties or non-parties to the BC, provided that they respect the concept of ESM and do not conclude provisions which are less environmentally sound than those under the BC. As their names imply, such frameworks' applicability is limited to the geographical scope of their region and involved states' territories. Nevertheless, valuable inputs can be deduced from such approaches for a more coherent ESM concept.

An example for the incorporation of ESM as an overall objective in bilateral agreements is given by the *Bilateral Agreement between the Netherlands and the*

²⁹ UN Conference on Environment and Development, *Agenda 21: Programme of Action for Sustainable Development*, UN Doc. A/CONF. 151/26 (1992); see KUMMER, supra note 5, 56-60.

³⁰ Chapter 20 of *Agenda 21*, supra note 29, para. 20.6.
<http://www.un.org/esa/sustdev/documents/agenda21/english/agenda21toc.htm>

³¹ The text of Decision V/33 is found in Annex I to the UNEP, Report of the Fifth Meeting, supra note 7; the text of the Basel Declaration on ESM is found in Annex II of UNEP; Report of the Fifth Meeting, supra note 7.

³² See Decision V/33 para. 1 (a)-(i), reiterated in Basel Declaration on ESM.

*Netherlands Antilles concerning Transboundary Movements of Hazardous Wastes.*³³ The agreement was established in 2005 and allows the imports of wastes into the Netherlands, in order to ensure a more efficient and environmentally sound waste management scheme than is to be expected by the only available land filling methods applied in the Netherlands Antilles.

On 30 January, 1991, the *Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement of Hazardous Wastes within Africa*³⁴ was adopted and entered into force in 1994. Although this regional Convention adopted a more trade-restrictive approach, its concrete form was strongly influenced by the BC.³⁵ Indeed, the Bamako Convention refers to the overall objective of the protection of human health and the environment and adheres to “environmentally sound management” in the context of different waste management activities³⁶ by adopting the same definition of ESM as the BC in its Article 1(10). The *Convention to Ban the Importation into Forum Island Countries of Hazardous and Radioactive Wastes and to Control the Transboundary Movement and Management of Hazardous Wastes within the South Pacific Region (Waigani Convention)*,³⁷ adopted in 1995, also adheres to the ESM definition as provided by the BC (see Article 1 Waigani Convention) and implements it as an overall objective (see Article 4(4.c) Waigani Convention). Furthermore, the *Centroamerican Agreement on Transboundary Movements of Hazardous Wastes*³⁸ adopted on 11 December, 1992, has also incorporated Article 4(2.e) of the Basel Convention by not allowing hazardous waste exports into countries which have prohibited such imports by national law or international agreements, or if the exporting party has reasons to believe that the wastes in question will not be treated in an environmentally sound manner according to the policies and principles adopted by the United Nations Environment Programme (UNEP) (Article 3(4) Centroamerican Agreement).

The concept of ESM has also become a fundamental principle for waste management in the European Union’s secondary legislation:³⁹ Although the European Union has established a considerable legal framework related to waste, it has not elaborated further on ESM within a separate legal instrument. Nevertheless, many EC Directives and Regulations adhere to environmental protection and the protection of human health as underlying principles for waste management, and thereby apply ESM schemes. For example, directives on different waste streams, such as the Directive 94/62/EC of 20 December, 1994, on packaging and packaging wastes⁴⁰ as

³³ Available at <http://www.basel.int/article11/frsetmain.php>.

³⁴ Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa, adopted 30 January 1991, available at <http://www.basel.int/article11/multi.html>.

³⁵ For more information on the Bamako Convention see KUMMER, supra note 5, 99-107.

³⁶ Such as transport and transboundary movements of hazardous wastes from the contracting parties (Article 4(3.k) and (3.o)), as well as in the context of the notification procedures (Article 6(3.b)), the duty to re-import (Article 8), the intra-African cooperation (Article 10 (2.c and d)), as well as the international cooperation in bilateral, multilateral and regional agreements (Article 11).

³⁷ Available at <http://www.basel.int/article11/frsetmain.php>.

³⁸ Acuerdo Centroamericano sobre Movimiento Transfronterizo de Desechos Peligrosos, available at <http://www.basel.int/article11/centroamerican.pdf>.

³⁹ On EU legislation as a regional “arrangement” under Article 11 BC see KUMMER, supra note 5, 149-151.

⁴⁰ European Parliament and Council Directive 94/62/EC of 20 December, 1994, on packaging and packaging waste, OJ L 365, 31.12.1994, p. 10-23.

well as Directive 2000/53 of 18 September, 2000, on end-of life vehicles⁴¹ use the notion of environmentally sound waste management.⁴²

The more recently enacted Regulation No. 1013/2006 of the European Parliament and of the Council of 14 June, 2006, on shipments of waste⁴³ explicitly refers to Article 4(2.d) of the BC requiring that “shipments of hazardous waste are to be reduced to a minimum, consistent with environmentally sound and efficient management of such waste.”⁴⁴ The regulation defines the principle of ESM in accordance with Article 2(8) of the BC,⁴⁵ however, applying a broader scope by referring to a definition of wastes according to Article 1(1.a) of Directive 2006/12/EC and not differentiating between “hazardous wastes” and “other wastes”. In this regulation ESM is applied as a fundamental principle, particularly with regard to waste shipments within, exports from and imports into the European Community. In particular, Article 49 indicates that the necessary steps are to be taken to ensure that any waste shipped is managed “without endangering human health and in an environmentally sound manner throughout the period of shipment and during its recovery and disposal.” Furthermore, the export of wastes to third countries is prohibited if there are reasons to believe that the waste will not be managed in accordance with ESM. The Regulation finally enumerates specific guidelines on ESM in its Annex VIII; this list includes references to the Technical Guidelines adopted under the BC as well as Guidelines established by the OECD on specific waste streams. Furthermore, it refers to IMO’s Guidelines on ship recycling⁴⁶ as well as the International Labour Organization’s (ILO) Guidelines on safety and health in shipbreaking for Asian countries and Turkey.⁴⁷ Furthermore, the EU has applied ESM as a decisive element in its more recent approach regarding waste management and recycling strategies.⁴⁸

ESM has also been addressed by the OECD in 2004 with the adoption of the Council Recommendation C(2004)100.⁴⁹ The objective of this recommendation is to

⁴¹ Directive 2000/53/EC of the European Parliament and of the Council of 18 September 2000 on end-of life vehicles, OJ L 269, 21.10.2000, p. 34 with several amendments.

⁴² Directive 94/62/EC refers to ESM in its Preamble as well as in Article 5. Directive 2000/53/EC mentions environmentally sound treatment in its preambular paragraph 10, Article 2(13), and Article 9(2).

⁴³ EC Regulation No 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste, OJ L 190, 12.7.2006, p. 1-98.

⁴⁴ Ibid., Preambular Paragraph 8.

⁴⁵ Ibid. Article 2(8) which states: “environmentally sound management means taking all practicable steps to ensure that waste is managed in a manner that will protect human health and the environment against adverse effects which may result from such waste.”

⁴⁶ IMO Guidelines on Ship Recycling, adopted at the 23rd Assembly in November-December 2003, A.962(23) and amended in 2005 by Resolution A. 980(24) of the IMO Assembly, available at <http://www.basel.int/ships/compilation.html>.

⁴⁷ ILO, Safety and Health in Shipbreaking: Guidelines for Asian Countries and Turkey, adopted at the 289th session of the ILO Governing Body in 2004, available at <http://www.basel.int/ships/compilation.html>.

⁴⁸ See for example Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions, Taking sustainable use of resources forward: A Thematic Strategy on the prevention and recycling of waste, 21.12.2005, COM(2005) 666 final.

⁴⁹ OECD Recommendation of the Council on Environmentally Sound Management of Waste, 9 June 2004, C(2004)100, as amended by C(2007)97. The OECD Council therewith built upon the Basel Convention framework as well as other OECD Council Acts related to transboundary movements

provide for a level playing field for ESM among the OECD member countries, by providing for a clear definition and a common understanding of ESM.⁵⁰ This recommendation provides for valuable inputs when tackling an international normative ESM framework and will be of importance for the subsequent outline. A further advancement can be expected from the IMO International Convention for the Safe and Environmentally Sound Recycling of Ships, which shall presumably be adopted in Hong Kong in May 2009.⁵¹

III. RATIONALE FOR IMPROVING COHERENT AND EFFECTIVE LINKAGES BETWEEN THE BASEL, THE ROTTERDAM, AND THE STOCKHOLM CONVENTIONS

Chemicals and wastes can have the same harmful effects on human health and the environment. A hazardous waste can be a harmful chemical that has been used or discarded; end-of-life equipment containing toxic chemicals is characterized as a hazardous waste. Indeed, in many instances, it is not possible to distinguish between “chemicals” and “wastes” with regard to the chemical or physical properties. Without carefully linking hazardous waste issues with harmful chemical issues, it is unlikely that the quantity and hazardousness of wastes generated can be reduced. In light of these considerations, it makes sense to apply ESM practices broadly by trying to optimize coherence as a first step, before trying subsequently to introduce a comprehensive international ESM framework for addressing the proper management of waste materials potentially contaminated with POPs or other chemical substances. Such an approach would imply joining together the three Conventions addressing hazardous wastes in these terms, i.e. the *Basel Convention*, the *Rotterdam Convention*, and the *Stockholm Convention*.

The establishment of an ESM framework, sustained by binding legal rules, would represent an important step towards creating a level playing field of high environmental standards for the sound and safe management of the flow of wastes and recyclables worldwide and would help regulators address the implementation of ESM in a coordinated way, particularly avoiding contradictions or duplications between the three international Conventions. Furthermore, a comprehensive regulation of ESM can foster competition between the concerned enterprises,⁵² and an ESM framework could constitute the backbone for a global ESM scheme, including, for example, ESM certification, international ESM standards, or traceability systems in order to strive toward improved implementation of ESM on a global scale.

of wastes, which had previously already referred to ESM (see C(83)189/FINAL, C(85)100, C(86)64/FINAL, C(90)178/FINAL, C(92)39/FINAL, and C(2001)107/FINAL). On the question whether the OECD Council Decision C(92)39/FINAL could be qualified as an “arrangement” under Article 11 BC see KUMMER, *supra* note 5, 165-168.

⁵⁰ For an overview on the background of the OECD Recommendation C(2004)100 see OECD, *Guidance Manual on Environmentally Sound Management of Waste: Guidance Manual for the Implementation of the OECD Recommendation C(2004)100 on Environmentally Sound Management (ESM) of Waste*, 2007, 6.

⁵¹ IMO, *Draft International Convention on the Safe and Environmentally Sound Recycling of Ships*, Annex 1 to the Report of the Third Intersessional Meeting of the Working Group on Ship Recycling, MEPC 57/3, 25 January 2008.

⁵² See also OECD Council Recommendation C(2004)100, and its list of its three main objectives.

A comprehensive legal framework should capitalize on the existing approaches undertaken so far, *inter alia*, by the Parties to the Basel Convention, the OECD members, or the Bureau of International Recycling.⁵³ The Basel Convention as well as the OECD Recommendation C(2004)100 pursue the overall objectives of enhancing the sustainable use of natural resources and the general aim of minimizing waste generation.⁵⁴ In addition, regarding wastes that cannot be avoided, the concept of ESM stipulates the protection of human health and the environment from adverse effects that may result from waste substances. This definition can be seen as an underlying principle, linking the Basel, the Rotterdam, as well as the Stockholm Convention.⁵⁵ All three Convention frameworks apply such a concept of ESM one way or another:

The RC was adopted and opened for signature on 10 September 1998; it entered into force on 24 February 2004. The Convention's elaboration has to be seen in light of accelerating growth in the production and trade of chemicals, which raised concerns about risks due to hazardous chemicals and pesticides. The Convention's objective is to promote shared responsibility and cooperative efforts among the parties with regard to international trade in certain hazardous chemicals in order to protect human health and the environment from potential harm. For this purpose, the Convention focuses on the information exchange between the parties. Informed decisions on import regulations based on the chemicals' characteristics are considered as important conditions for their environmentally sound use. Furthermore, the environmentally sound application is enhanced by the provision of a national decision-making process on the chemicals' import and export and by the dissemination of such decisions to the Convention parties (Article 1 RC). An initiative which had started as a voluntary information-exchange program promoted by UNEP and the Food and Agriculture Organization of the United Nations (FAO) in the 1980s was developed to constitute a binding legal framework on the Prior Informed Consent (PIC) procedure, applicable to banned or severely restricted chemicals and severely hazardous pesticide formulations listed in Annex III of the Convention (Article 3(1) RC).⁵⁶

The SC was adopted on 22 May 2001 and entered into force on 17 May 2004. Its objective is to protect human health and the environment from persistent organic pollutants (so-called "POPs") (Article 1 SC). POPs are organic compounds that resist environmental degradation for long time periods and are widely distributed geographically through air, water and migratory species. The accumulation of POPs in the fatty tissue of human beings and wildlife can lead to serious health effects, such as cancer, birth defects, or dysfunctional immune and reproductive systems.⁵⁷ The SC establishes different measures to minimize and eventually eliminate specific releases of POPs. Furthermore, provisions are applied to prohibit and eliminate the im-

⁵³ <http://www.bir.org/>

⁵⁴ See Article 4(2.a) BC, Preambular paragraph 3 BC; see also Preamble of the OECD Council Recommendation C(2004)100, listing its three main objectives.

⁵⁵ See Preambular paragraph 4 BC, Article 2(8) BC; Preambular paragraph 1 RC, Article 1 RC; Preambular paragraph 5 SC, Article 1 SC.

⁵⁶ See the official website at <http://www.pic.int>; see also URS P. THOMAS, *The International Management of Risk: An Overview of the Basel, Rotterdam and Stockholm Conventions, EcoLomic Policy and Law, Journal of Trade & Environment Studies* 5 (1) 2008, 11-13. http://www.ecolomics-international.org/headg_ecolomic_policy_and_law.htm

⁵⁷ For further information see the official website at <http://www.pops.int>; see also THOMAS, *supra* note 56, 14-15.

port and export of such specific chemicals. The Convention adheres to the notion of “environmentally sound management,” however, without providing for a definition of the term. In similar ways as the BC, the SC allows the import and export of chemicals that should be eliminated or restricted according to the Annexes A and B for the purpose of their environmentally sound disposal.⁵⁸ Furthermore Article 6 SC establishes provisions to reduce or eliminate releases from stockpiles and wastes, with the overall objective of ensuring that they “are managed in a manner protective of human health and the environment,” drawing on the concept of “environmental soundness” for the management of stockpiles (Article 6(1.c)), the handling, collection, transportation, storage and disposal of such wastes and materials becoming wastes (Article 6(1.d)), and the remediation of sites contaminated by chemicals listed in the Annexes A, B, or C (Article 6(1.c)). To determine whether a method is considered as compatible with principles of environmentally sound disposal, the Conference of the Parties is held to cooperate with the appropriate bodies of the Basel Convention (Article 6(2)).

In a nutshell, the BC has clearly influenced the chosen wording of the RC and the SC. Their purposes are very similar to those of the Basel Convention’s; indeed, Article 1 RC and Article 1 SC reiterate Article 2(8) BC by emphasizing the same objectives. Furthermore, justification for the linkage of the three frameworks could stem from the associational elements inherent in all of them: For example, the SC explicitly refers to the pertinent provisions of RC and BC including the regional agreements developed under Article 11 BC. Similarly to the RC, the BC has also adopted a PIC-procedure (see Article 6 and 7 BC) for the transnational movements of hazardous wastes and other wastes. Additionally, the SC also enhances information exchange according to its Article 9. Furthermore, chemicals subject to Annex III of the RC and Annexes A, B and C of the SC are partly also contained in Annex VIII of the BC, thus implying hazardous characteristics of the wastes in question, for example, Polychlorinated biphenyls (PCBs) are covered by all three Conventions.

Indeed, the Conventions’ wording and contents do not forbid the implementation of an overarching ESM framework. The combination of their regulative elements seems appropriate in view of the fact that often enough the hazardousness of wastes can be traced back to the chemicals inherent in the materials disposed of. Since every imaginable substance is basically a chemical composition, a clear separation between waste materials possessing chemical elements, and chemicals is neither possible nor suggestive.⁵⁹ All three Conventions are administered under the auspices of UNEP, except for the RC which is administered jointly by FAO and UNEP. This organizational aspect additionally enhances coordination. Moreover, a harmonized course of action between the three legal frameworks in the field of ESM also corresponds to international attempts to enhance cooperation between the different instruments. When applying the concept of “environmental soundness,” the SC already stipulates the close coordination between the SC Conference of the Parties and the appropriate bodies of the BC to determine the methods considered as ensuring environmentally sound disposal (Article 6(2.b) SC). In fact, the three conventions’ Conferences of the Parties have established the Ad Hoc Joint Working Group (AHJWG),

⁵⁸ See Article 3(2.a.i), Article 3 (2.b.i), Article 3(2.c.), and Annex A Part II (c) and (d).

⁵⁹ See also the Updated General Technical Guidelines for the Environmentally Sound Management of wastes consisting of, containing, or contaminated with Persistent Organic Pollutants (POPs), adopted at the Eight Conference of the Parties to the Basel Convention (COP8), available at <http://www.basel.int/techmatters/code/techguid.php>.

with the purpose of preparing joint recommendations on enhanced cooperation and coordination among the three legal frameworks.⁶⁰ However, attempts to enhance coherence between the three Conventions are challenged particularly by the different application fields they cover.

The BC has a very broad scope: It defines “wastes” as substances or objects which are disposed of or are intended or required to be disposed of by the provisions of national law (Article 2(1)). Two categories of wastes define the scope of the Convention according to Article 1 and the definition of ESM according to Article 2(8): “hazardous wastes” and “other wastes.”⁶¹ The applicability of the BC is fundamentally dependent on the classification and characterization of the wastes in question according to the Conventions’ Annexes I, III, VIII, and IX; thereby the Convention draws on criteria regarding the intrinsic properties of waste.⁶² The BC’s scope of application encompasses waste pesticides and harmful chemicals, including POPs and doesn’t distinguish between wastes generated on land or at sea, or between civil and military wastes, a differentiation adopted for example by the EU Directive 2000/59/EC.⁶³ The RC’s field of application is limited to the hazardous chemicals and severely hazardous pesticide formulations contained in its Annex III. Article 3(2.c) RC explicitly excludes wastes from its application scope. The SC is applicable to the 12 POPs listed in its Annexes A and B.

Optimized coherence between the three Conventions is thus particularly challenged by the international “inter partes” principle, according to which a contract cannot create obligations or rights for a third state without that state’s consent.⁶⁴ As a consequence, the adoption of a new coherent international framework on ESM could be a feasible option.

⁶⁰ See the decision SC-2/15 of the Conference of the Parties to the Stockholm Convention, decision RC-3/8 adopted by the COP to the Rotterdam Convention and decision VIII/8 of the COP of the Basel Convention. For further information see the official website of AHJWG at <http://ahjwg.chem.unep.ch>.

⁶¹ “Hazardous wastes” are defined by the categories contained in Annex I, unless they do not possess any of the characteristics contained in Annex III. Furthermore, the Convention acts on the assumption of hazardousness if wastes that are not covered under the Convention are considered as hazardous by the domestic legislation of the party of export, import or transit. “Other wastes” according to the Convention have to belong to a category contained in Annex II.

⁶² See PIERRE PORTAS, *The Basel Convention and Environmentally Sound Management – a Global Concept with Concrete Applications*, Presentation held at the Second OECD Workshop on Environmentally Sound Management of Wastes Destined for Recovery Operations, Vienna 28-29 September 2000, Vienna, para. 7.

⁶³ See Directive 2000/59/EC of the European Parliament and of the Council of 27 November 2000 on port reception facilities for ship-generated waste and cargo residues, OJ L 332, 28.12.2000, p. 81-89, amended by Directive 2002/84/EC of the European Parliament and of the Council of 5 November 2002 amending the Directives on maritime safety and the prevention of pollution from ships, OJ L 324, 29.11.2002, p. 53-58 and Commission Directive 2007/71/EC of 13 December 2007 amending Annex II of Directive 2000/59/EC of the European Parliament and the Council on port reception facilities for ship-generated waste and cargo residues, OJ L 329, 14.12.2007, p. 33-36.

⁶⁴ Article 34 Vienna Convention on the Law of Treaties, United Nations Treaty Series (UNTS), vol. 1155, 331.

IV. TOWARDS A COHERENT INTERNATIONAL ESM FRAMEWORK BASED ON PRECAUTION AND RISK ASSESSMENT

A coherent international ESM framework should adhere to the Conventions' shared objective of protecting human health and the environment from adverse impacts stemming from waste generation and management. This entails a *preventive approach*, which can be perceived as a fundamental principle in environmental law.⁶⁵ As a golden rule for the protection of the environment in view of the impossibility to remedy numerous instances of environmental damages, and given the prohibitive costs of rehabilitation, the preventive principle tries to anticipate damage, and in cases where damage has already occurred, it tries to ensure it does not spread.⁶⁶ Whilst prevention is based on the comprehension of an existing certain risk, the *precautionary approach* goes a step further in cases where no definitive scientific evidence or proof exists of any probabilities that a threat will materialize. In response to such situations the precautionary approach stipulates measures based on anticipation.⁶⁷ In light of the acknowledged risks inherent in the handling of hazardous materials, all three Conventions can be interpreted as essentially sharing a preventive approach.

Article 4(2.c) of the BC stipulates that persons involved in the management of wastes under the Convention are to take the steps which are necessary to prevent pollution and, in case such pollution does occur, to minimize its impact on human health and the environment. The principle of prevention is also mentioned by the Framework Document on ESM as a possible strategy to be considered in the context of waste management. It reads:

whereby preventive measures are taken, considering the costs and benefits of action and inaction, when there is a scientific basis, even if limited, to believe that release to the environment of substances, waste or energy is likely to cause harm to human health or the environment.⁶⁸

Additionally, a preventive approach can be seen in the PIC procedure stipulated both by the RC and the BC.⁶⁹ A particularly preventive approach is applied to transnational movements by the three Conventions: Article 4 BC stipulates that Convention parties are held to ensure the availability of adequate disposal facilities, "for the environmentally sound management of hazardous wastes and other wastes, that shall be located to the extent possible, within it, whatever the place of their disposal" (Article 4(2.b)). Transboundary movements of wastes are only permitted as an option in

⁶⁵ See also Chapter 20 of Agenda 21, *supra* note 29. See also Article 174 (2) of the Treaty establishing the European Community, as in force from 1 February 2003 (Nice Treaty consolidated version), OJ L 325, 24.12.2002, p. 33-159 framing the European environmental policy as adhering to a high level of environmental protection, thereby, "based on the precautionary principle and on the principles that preventive action should be taken..."

⁶⁶ ALEXANDRE CHARLES KISS/DINAH SHELTON, *International environmental law*, 2nd ed., New York 2000, 263.

⁶⁷ On the precautionary principle see NICOLAS DE SADELEER, *Environmental Principles. From Political Slogans to Legal Rules*, New York 2002, 91-223, see especially the section on distinguishing between Prevention and Precaution p. 74-75.

⁶⁸ Framework Document, *supra* note 14, para. 10.

⁶⁹ See KUMMER, *supra* note 5, 34.

terms of a second step, “reduced to the minimum consistent with the environmentally sound and efficient management of such wastes” and if “conducted in a manner which will protect human health and the environment against adverse effects which may result from such movement” (Article 4(2.d)). These two provisions are referred to as an application of the *self-sufficiency principle* and the *proximity principle*. The former is considered to imply that countries should ensure that the disposal of the wastes generated within their territory is also undertaken there, corresponding to ESM criteria.⁷⁰ The latter principle is understood as stipulating that the disposal of hazardous wastes must take place as close as possible to their point of generation.⁷¹ This corresponds to a broad comprehension of the *polluter pays principle* as reaffirmed by the preamble of the SC, which refers to Principle 16 of the Rio Declaration.⁷² Accordingly, the polluter should generally bear the costs of the pollution he causes, by implementing a calculation which internalizes the environmental costs the pollution entails. In terms of pollution prevention, this principle stipulates that the potential polluter must actively endeavor to prevent pollution.⁷³

Both the self-sufficiency principle as well as the proximity principle have been subjected to criticism in their absolute form.⁷⁴ This has led to an interpretation which recognizes that the management of some wastes may be more environmentally sound outside national territories, particularly depending on the availability of specialized facilities, even though they might be located at greater distances from the point of generation.⁷⁵ In a nutshell, the two principles could be summarized as a “*least transboundary movement principle*”, according to which transboundary movements of wastes should be reduced to a minimum consistent with efficient ESM.⁷⁶ Such an approach constitutes another facet of the preventive approach and enables its application as a guiding element for consolidating different ESM approaches that are not without controversy.

The precautionary principle whose scope of application includes more uncertain forms of risk materialization is explicitly mentioned in Article 1 SC, which refers to Principle 15 of the Rio Declaration on Environment and Development. The objective of the SC is thus to protect human health and the environment from POPs in an anticipatory manner, i.e. independent of acknowledged hazards, thus addressing problems of irreversibility and scientific uncertainties.⁷⁷ Such a precautionary approach is also applied by the Bamako Convention, which provides for precautionary measures in its Article 4(3). Within the legal framework of international trade agreements this principle is adopted, for example, in the context of the provisional adoption of sanitary

⁷⁰ See definition in Framework Document, *supra* note 14, para. 10.

⁷¹ See definition in *ibid.*, para. 10.7.

⁷² UN Declaration on Environment and Development, Rio de Janeiro, 14 June 1992 (Rio Declaration on Environment and Development), see Preambular paragraph 17 SC. See also Chapter 20 of Agenda 21, *supra* note 29, para. 20.38 (b).

⁷³ See wording in Framework Document, *supra* note 14, para. 10.

⁷⁴ Amongst others see for example ELLI LOUKA, *Overcoming National Barriers to International Waste Trade: A New Perspective on the Transnational Movements of Hazardous and Radioactive Wastes*, Dordrecht/Boston 1994, 3-6, 24-29; see also Framework Document, *supra* note 14, para. 39.

⁷⁵ See corresponding supplementary formulation of the two principles in Framework Document, *supra* note 14, para. 10.

⁷⁶ See *ibid.*, para. 10.

⁷⁷ KISS/SHELTON, *supra* note 66, 265.

or phytosanitary measures on the basis of available pertinent information, in cases where relevant scientific evidence is insufficient. For a subsequent and more objective assessment of the risks in question, the parties are asked to seek to obtain the additional information necessary within a reasonable period of time (Article 5.7 of the WTO Agreement on the Application of Sanitary and Phytosanitary Measures [SPS Agreement]⁷⁸). Appropriate risk assessment⁷⁹ entails the taking into account of (i) available scientific evidence, (ii) relevant processes and production methods, (iii) relevant inspection, sampling and testing methods, (iv) prevalence of specific diseases or pests, (v) existence of pest- or disease-free areas, (vi) relevant ecological and environmental conditions, and (vii) quarantine or other treatment.⁸⁰

Since risk is a relative factor with changing perceptions on its extent, it is important to provide for a stable approach based on the intrinsic properties of the waste in question. As a consequence, the environmental conventions establish catalogues of hazardous substances. With this approach, the conventions base their classification of materials and their treatment on deliberations and on risk assessment: under the RC, banned or severely restricted chemicals have to be notified to the Convention's Secretariat. The information requirements for notifications made pursuant to Article 5 RC include the indication whether the national regulatory action was taken on the basis of a risk or hazard evaluation. Furthermore, the hazards and risk to human health or the environment presented by the chemicals in question are summarized as part of the notification.⁸¹ The criteria for listing banned or severely restricted chemicals encompass a review mechanism ensuring that the final regulatory action has been taken as a consequence of a risk evaluation and an assessment whether the regulatory action actually leads to risk reduction.⁸²

The SC establishes certain information requirements and screening criteria for chemicals that are to be listed in the Annexes A, B and/or C of the Convention which specify the chemicals that are to be eliminated or restricted and that encompass chemicals which are subjected to measures to reduce or eliminate releases from their unintentional production. The criteria shall include information on the chemical's identity, its persistence, its bio-accumulation, its potential for long-range environmental transport, as well as its adverse effects.⁸³ The purpose of such a review is the evaluation whether the chemical is likely to lead to significant adverse human health and/or environmental effects so that global action is warranted. As a consequence, Annex E SC stipulates the development of a risk profile that further elaborates on the information and screening criteria provided by the party to the Convention.⁸⁴ Based on the risk profile as well as on the risk evaluation which includes an analysis of possible control measures for the chemical in question, the Persistent Organic Pollutants

⁷⁸ Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement), 15 April 1994, WTO Doc. LT/UR/A-1A/12.

http://trade.wto.org/english/tratop_e/sps_e/spsagr_e.htm

⁷⁹ The notion of „risk assessment“ is defined in Annex A para. 4 SPS Agreement.

http://www.wto.org/english/tratop_e/sps_e/spsagr_e.htm

⁸⁰ Art. 5.2 SPS Agreement.

⁸¹ Annex I RC.

⁸² Annex II RC.

⁸³ Annex D SC.

⁸⁴ Annex E SC.

Review Committee shall then recommend whether the chemical should be considered for listing in the Annexes A, B and/or C.⁸⁵

In sum, the risk evaluation in both Conventions is based on national standards; the impetus for amending the Convention's Annexes stems from the parties to the Conventions. The RC merely stipulates that the risk evaluation adopts a review of scientific data in the context of the conditions prevailing in the party to the Convention.⁸⁶ The SC provides for further information requirements for the establishment of a risk profile, including particular sources, such as production data, data on releases, hazard assessments, national and international risk evaluations etc.⁸⁷ It particularly does not stipulate full scientific certainty for considering a chemical's inclusion in its Annexes.⁸⁸

In order to ensure compatibility between a prospective ESM framework and international trade law, scientific know-how of the environmental and health impact of dangerous properties should be enhanced. Furthermore, the reliance on standardized, international corresponding risk assessment mechanisms would be an important asset. The adoption of an environmental impact assessment (EIA) procedure, for example, could seek to ensure the acquisition of information on environmental consequences that are likely to happen, on possible alternatives, and on measures to mitigate harm. In this function EIAs can provide for a valuable instrument for decision-making processes.⁸⁹ A science-based risk assessment mechanism could draw on the Conventions' Annexes for valuable indications on the substances' potential hazardousness, regardless of the classification of the substance in question as waste, as a chemical or as a POP. However, the risk assessment should go beyond the lists provided and further analyze parameters such as:

- Dose responses for the assessment of the concentration and the effect of the substances in question,
- Routes of exposure which effect the exposure of the hazardous substance,
- Estimations of risks, and
- Reductions of risks by substitution of the materials, by reduced generation, by different product designs, and/or cleaner production and/or processes.⁹⁰

Adherence to the integrated life-cycle principle could support such a mechanism, by stipulating that substances and products should be designed and managed in a manner enabling the longest product life possible and minimizing the environmental impact caused during their generation, use recovery, and disposal.⁹¹ An integrated life-cycle principle implies that ESM has to be a leading guideline adopting a preventive approach throughout the life of any product, including its "after-life" once turned

⁸⁵ Article 8 SC.

⁸⁶ The documentation provided shall demonstrate that "(I) Data have been generated according to scientifically recognized methods; (II) Data reviews have been performed and documented according to generally recognized scientific principles and procedures; (III) The final regulatory action was based on a risk evaluation involving prevailing conditions within the party taking the action."

⁸⁷ Annex E SC.

⁸⁸ Article 8 para. 7 (a) SC.

⁸⁹ On EIAs in general see, inter alia, KISS/SHELTON, supra note 66, 202-211.

⁹⁰ See PORTAS, supra note 62, para. 4.

⁹¹ See definition in Framework Document, supra note 14, para. 10 and 12.

to waste. A coherent assessment of these factors could be facilitated, for example, by data compilations and the monitoring of materials' imports and exports.⁹²

1. Scope of Application

An ESM framework, linking the three Conventions would need to apply a broad application scope, thus encompassing wastes independently of their physical form, based on their potential environmental or health risks, in order to take into account that the hazardousness of waste substances may be the consequence of contaminations with hazardous chemicals or POPs. On this note, the Basel Convention's ESM definition rightly addresses both waste objects as well as waste substances.⁹³ It should, however, be remembered that it is the intrinsic property of a material that will determine whether this material is a hazardous waste or not under the BC. A wide working definition of ESM has been applied by the OECD Council Recommendation C(2004)100. Accordingly ESM is defined as

a scheme for ensuring that wastes and scrap materials are managed in a manner that will save natural resources, and protect human health and the environment against adverse effects that may result from such wastes and materials.

The OECD definition therefore addresses *all wastes* including scrap materials (except radioactive waste).⁹⁴ This broad scope supports a holistic perception of materials and promises a most effective approach that does not stop at semantics but provides for a more appropriate conceptualization. The application of a wide scope generally allows all wastes to be assessed. It also permits to take into account the fact that wastes which are not considered as hazardous according to the BC can still pose a risk for the environment when not managed in an appropriate manner; used tires for example fall in this category.⁹⁵ The BC ESM Framework acknowledges that every waste has to be managed in a safe and sound way.

As a consequence, the OECD ESM Recommendation also addresses a broad scope of waste management activities, making sure that every step in the waste management hierarchy adheres to the ESM objective.⁹⁶ Where further international regulations exist on specific waste management operations, such provisions will need appropriate consideration.⁹⁷

⁹² See for example PORTAS, *supra* note 62, para. 9.

⁹³ See Article 2(1) BC.

⁹⁴ See also OECD, Guidance Manual on ESM, *supra* note 50, 11-15.

⁹⁵ See PORTAS, *supra* note 63, para 8.

⁹⁶ Such activities encompass disposal, collection, separation, transport, recovery such as reuse and recycling activities, as well as final disposal including the disposal of residues from recovery operations.

⁹⁷ See OECD Council Recommendation C(2004)100, which does not address waste transport, however, since transportation is subjected to regulations on the domestic and international level (see OECD, Guidance Manual on ESM, *supra* note 50, 15).

2. Public/Private Addressees

As international multilateral agreements, the BC, RC and SC primarily address the state parties to the Conventions. These are expected to implement the provisions provided for internationally on the national level. The Basel Convention Framework Document for example lists criteria to assess ESM at the national level, which include the existence of a stringent regulatory infrastructure and enforcement mechanisms.⁹⁸ The OECD ESM Recommendation provides for inputs for its member countries in its first part, to elaborate and implement ESM policies and/or programs.⁹⁹

Additionally, the importance of addressing the private sector and all of the stakeholders concerned with the complexities of implementing ESM criteria has been recognized: The Basel Convention has implemented a Partnership Program for improving cooperation with industry.¹⁰⁰ Furthermore, the OECD ESM Recommendation in its second part lists Core Performance Elements for the Environmentally Sound Management of Waste (CPEs) in its Annex I; the CPEs encompass six measures, which should be implemented at the facility level.¹⁰¹ The Recommendation specially addresses small and medium-sized enterprises (SMEs) in its Annex I, since most waste management activities are conducted by them.¹⁰² As a first core performance element according to the OECD ESM Recommendation, waste management facilities should have an applicable Environmental Management System (EMS) in place, certified by a recognized party.¹⁰³ CPE 1 refers to EMS systems as provided by the ISO

⁹⁸ Framework Document, *supra* note 14, para. 9.

⁹⁹ These include: (1) the establishment of an adequate regulatory and enforcement infrastructure at an appropriate governmental level, (2) the development and implementation of practices and instruments that facilitate the monitoring and implementation of the Core Performance Elements for the Environmentally Sound Management of Waste (CPEs) and control compliance, (3) the insurance that waste management facilities operate according to best available techniques, (4) the encouragement of information exchange between the different actors concerned, (5) the integration of the CPEs into national policies and/or programs, (6) the consideration of incentives and/or relief measures for facilities that fulfill the CPEs, (7) the implementation of technical guidance for ESM, (8) the movement towards internalization of environmental and human health costs in waste management, (9) the provision of incentives to take part in ESM schemes, (10) the encouragement of the development and implementation of an environmental liability regime, and (11) the insurance that the CPEs do not discourage recycling in OECD member countries.

¹⁰⁰ See COP6, “Partnership with Industry: Elements of a framework for cooperation with industry”, 31 October 2002, UNEP/CHW.6/32/Add.1, available at: <http://www.basel.int/meetings/cop/cop6/english/32a1e.pdf>.

¹⁰¹ These are: (i) The facility should have an applicable Environmental Management System in Place, (ii) the facility should take sufficient measures to safeguard occupational and environmental health and safety, (iii) the facility should have an adequate monitoring, recording and reporting program, (iv) the facility should have an appropriate and adequate training program for the personnel, (v) the facility should have an adequate emergency plan, (vi) the facility should have an adequate plan for closure and after-care.

For an outline see also Bureau for International Recycling (BIR), Tools for Environmentally Sound Management, Version 7.0, 2006, available at <http://www.basel.int/industry/compartnership/GuideESMBIR.pdf>, 33-36.

¹⁰² OECD, Guidance Manual on ESM, *supra* note 50, 15.

¹⁰³ According to CPE 1 OECD Council Recommendation C(2004)100 such an EMS would include: “Measurable objectives for continual improvements in environmental performance, including periodic review of the continuing relevance of these objectives;

14001 Environmental Management or the European Community Eco-Management and Audit Scheme (EMAS) for example:¹⁰⁴ The ISO 14001 voluntary standards are the most widely accepted international standards for EMS. EMAS was established as a voluntary EU Program that provides for instruments helping to improve enterprises' environmental performances.¹⁰⁵

To conclude, such instruments enable ESM implementation for the private sector, thereby providing for individual but related approaches to ESM as an overarching concept. As a consequence, the expansion of the ESM concept towards an international framework seems achievable and appropriate. The development of a level regulatory or standard-setting playing field, encompassing public as well as private entities, would go a long way in ensuring the competitiveness of businesses adhering to environmental standards.¹⁰⁶ Indeed, the recognition of adhering to ESM principles would enhance the quality image of today's businesses. This objective can be enhanced, where necessary, by a coherent and stringent regulatory ESM mechanism, the main purpose being to facilitate, accompany and stimulate the corporate sector to improve its environmental performance. In certain situations, a flexible framework may be preferable to enable enterprises and other actors from different industry sectors and regions to apply adequate mechanisms for their individual businesses and to work together in public/private multi-stakeholder partnerships.¹⁰⁷

3. A Two-Tiered Mechanism

Environmentally Sound Management still is a concept that means different things to different people, depending on various factors such as geographical locations, the level of economic development, or the technologies and scientific disciplines involved. In order to establish a single international ESM framework bridging the BC, the RC and the SC, a design would be required which is comprehensive enough to accommodate different perceptions but also provides for a practical mechanism to ensure concrete, effective and efficient implementation.¹⁰⁸ For this purpose, a two-step approach could be outlined:

- The first part of such an ESM framework should stipulate the overarching objective of protecting human health and the environment from the adverse impacts stemming from hazardous waste materials, including waste pesticides and harmful chemicals such as POPs. The preventive approach should be implemented as a guiding principle for the environmentally sound management of the respective ma-

Regular monitoring and re-examination of progress toward environmental, health, and safety objectives;

Collection and evaluation of adequate and timely environmental, health and safety information regarding facility activities;

Provisions included in CPEs 2-6, and, Applicable ESM technical guidance.”

¹⁰⁴ On Environmental Management Systems (EMS), see for example BIR, Tools for ESM, supra note 101, 10-31.

¹⁰⁵ See Regulation (EC) No 761/2001 of the European parliament and of the council of 19 March 2001 allowing voluntary participation by organizations in a Community eco-management and audit scheme (EMAS), OJ L 114, 24.4.2001, p. 1-29.

¹⁰⁶ See OECD, Guidance Manual on ESM, supra note 50, 14-15.

¹⁰⁷ See also BIR, Tools for ESM, supra note 101, 37; PORTAS, supra note 63, para. 12-15.

¹⁰⁸ PORTAS, supra note 63, para. 11.

terials. Generally, this instrument would address all types of wastes and waste management operations on all levels of the waste hierarchy, providing for helpful guidance to all the stakeholders involved. By adopting a voluntary approach, such a framework could take account of the complexities and differences in geographical, social, economical and industrial specificities and situations within the countries or between countries or regions. As a first step, a guiding document could be issued to clarify the scope and content of the ESM framework.

- The second part of an ESM framework should be more specific and focus on the use of ESM norms. As an international regulatory framework, the state parties could consider a risk assessment mechanism, based on the intrinsic properties of the specific materials, as a first step. On one hand guidance towards the application of the appropriate waste management activities should be provided by the waste management steering bodies and on the other hand the emphasis should be placed on references to the different Technical Guidelines adopted by the Technical Working Group under the Basel Convention. Such an approach would lead to a better understanding on how ESM provisions should effectively be addressed nationally within a global context. Stipulating a risk assessment mechanism as a starting point could also endorse the preventive approach necessary for handling such hazardous materials in question. It would help industry to become more familiar with the ESM purpose.

Such a two-tiered framework corresponds to developing incentives and regulatory tendencies in international environmental law that substantiate non-legally binding, flexible framework conventions with subsequently adopted protocols.¹⁰⁹ The adoption of a flexible, non-binding and overarching framework as a first stage facilitates widespread acceptance and agreement by the state parties and their industries on the international level and enables the gradual development of equitable and fair basic mechanisms. The second stage which may imply the development of a regulatory mechanism would assist states to build their work on standards incorporated in specific guiding documents such as the Technical Guidelines. Through this mechanism states would be responsible and liable regarding the application of ESM obligations. The actual ESM operations would, however, be left to the different entities in charge, operating on a national level. By referring to existing Convention mechanisms, the establishment of a new competing instrument could be avoided and the present legal frameworks could be supported by consolidating common resources and approaches under a single roof.

V. CONCLUSION: MOVING FORWARD

Industry relies heavily on hazardous materials for its prosperity and has not yet undertaken a significant U-turn to move towards a world free of harmful chemicals. It may happen but when? Climate change disturbances, biodiversity loss, soil erosion, pollution of the oceans are common features of our way of life; we live with the risk of breathing polluted air and eating food contaminated with toxic chemicals. In a society often named a “throw-away society,” fed by products and substances that leave a

¹⁰⁹ This approach has been adopted particularly in the context of the United Nations Framework Convention on Climate Change (UNFCCC), which was further concretized by different protocols such as the Kyoto-Protocol for example.

negative environmental footprint, coherent and forward-looking action is necessary. Consequently, it is important to revisit existing successes such as the multilateral environmental agreements to see how to make them stronger and more forceful in their objectives through advocacy and by proposing workable and sustainable solutions. For this purpose, we have opened a discussion on the feasibility of enlarging the concept of Environmentally Sound Management to bridge, in an operational way, the chemicals and waste conventions. By addressing the entire lifecycle of harmful chemicals it is possible to improve the way such chemicals are handled and disposed of. The idea is to create a sense of solidarity between those responsible for the marketing and use of chemicals with those who treat, recycle or eliminate these chemicals at the end of their usefulness in a sound and safe manner.

We share the opinion that the three conventions could be implemented within a coherent common ESM framework that would enhance their effectiveness and make them stronger individually and together. Improving transparency, certainty, predictability and traceability are key factors when implementing ESM standards and also constitute important cornerstones for the functioning of international trade. Such an ESM approach could thus be forged into two phases: first, the development of the tools that could enable the waste operators to increase their environmental performance by a joint initiative of both governments and industry. Designing an international ESM standard supporting a certification scheme could be a possible option for the effective implementation of ESM practices. At a next stage, and in order to ensure a level playing field in the use of universal ESM norms, concrete rules and procedures could be enacted when needed to guide and monitor the process. Cooperation between the BC, RC and SC is an ongoing process that should not be limited to a certain time limit but should be linked to the ongoing negotiations on enhancing cooperation and coordination among the three Conventions through the Ad Hoc Joint Working Group (AHJWG) process.¹¹⁰ The broader implications that their strengthened coordination entails include a reformulation of the multilateral environmental system and the manner in which to address global environmental issues in general.

Tomorrow the Basel Convention might be weakened by short-sighted policies aiming at reducing its operational dimension. The Stockholm Convention could be blocked due to a push to include in its scope currently manufactured POPs. The Rotterdam Convention risks becoming irrelevant in a world where 83 000 chemicals are in use. Undermining one convention will negatively impact the others. The tool of ESM on the other hand could help nurture a solid base for implementation in which each convention will bring its added value, mutually reinforcing the others. The choice is evident.

¹¹⁰ The AHJWG has held three meetings in 2007/08, for further information please consult: http://ahjwg.chem.unep.ch/index.php?option=com_frontpage&Itemid=49