Assessing the Effectiveness of International Environmental Agreements (IEAs): Demystifying the Issue of Data Unavailability

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Assessing the Effectiveness of International Environmental Agreements (IEAs): Demystifying the Issue of Data Unavailability

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Abstract

It is commonly claimed that assessing the effectiveness of International Environmental Agreements (IEAs) from the environmental problem-solving perspective is challenging because environmental data are not available. However, not much research has been done on the characterization of the nature and causes of such data unavailability. This article analyzes the term "data unavailability" and provides three typologies for data unavailability: (a) "true unavailability," where data collection complexities and resource constraints limit data collection and analysis; (b) "false unavailability," which refers to the existence of relevant data, but failure to report due to various causes; and (c) "external availability," which refers to the existence of relevant data in several organizations and research institutions, but with no established networks for data sharing between such institutions and the IEA institutions. This article discusses the causes for the various types of data unavailability and makes recommendations for promoting data availability.

Keywords

effectiveness, international environmental agreements, environmental treaties, assessment, data availability

Introduction

Within the environmental regimes literature, an evaluation of the effectiveness of International Environmental Agreements (IEAs) from the environmental problem-solving or IEA goal attainment perspective is commonly deemed to be challenging. There is a general perception among scholars that assessing environmental conditions is not the "most methodologically manageable" means of determining IEA effectiveness (Vogler, 1995, p. 179). The methodological challenges associated with the environmental problem-solving or goal attainment perspective are often associated with the longtime lag between entry into force of IEAs and observable impacts (DeSombre, 2000; Helm & Sprinz, 2000; Underdal, 2002; Young & Levy, 1999), man's incomplete understanding of the environmental problems (Young, 1999a), difficulties associated with differentiating between IEA impacts and other confounding factors such as natural variability and weather fluctuations (R. R. Bauer, 1997), and the existence of diffuse sources of pollution or multiple causes of environmental degradation (DeSombre, 2000; Heyes, 2000).

It seems therefore that it is difficult to measure the environmental impacts of environmental regimes or of obtaining reliable and consistent data (Greene, 1996; Sprinz & Vaahtoranta, 1994; Vogler, 1995; Young, 1997). Indeed, environmental data unavailability is in fact often evoked as one of the main reasons for privileging institutional indicators (e.g., the behavior modification of actors) over environmental indicators for assessing IEA effectiveness (e.g., Andresen & Ostreng, 1989; Breitmeier, Underdal, & Young, 2011; Chayes & Chayes, 1993; Greene, 1996; Levy, Keohane, & Haas, 1993; Levy & Young, 1994; Mitchell, 1994a; Vogler, 1995; Wettestad, 2001; Young, 1999b; Young & Levy, 1999).

However, despite this general suggestion of data unavailability in IEA effectiveness studies, not much has been written on the nature of such data unavailability or its causes. How true is it that there is no environmental data? And in cases when such is indeed the case, what are the factors for the lack of environmental data? These are important questions to answer if we want to engage in evidence-based global environmental policymaking. Data availability is the foundational premise for

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the enunciation of management strategies for global environmental governance and international environmental accountability. As is widely recognized by many of the IEA institutions, environmental monitoring and data analysis are crucial for the determination of the environmental assimilative and carrying capacity, the wise management of environmental resources, and the formulation of effective strategies for ensuring current and future global environmental sustainability (see, for example, Convention on Biological Diversity [CBD] Secretariat, 2009; de Mora, 2004; Law et al., 2010; Leadley et al., 2010; United Nations Environment Programme [UNEP], 1985, 2009; UNEP/Mediterranean Action Plan [MAP], 2012a).

This article examines the issue of environmental data unavailability in terms of its typology and the causes for a report of lack of data from IEA institutions (e.g., Secretariats, Conference of Parties [COPs], Scientific Committees, Councils, etc.), which are often the first source researchers interested in the environmental problem-solving or goal attainment perspective turn to in their quest for IEA-related environmental data. A greater understanding of the nature of environmental data (un)availability will help strengthen endeavors geared toward linking IEA effectiveness with their environmental impacts or goal achievement, for example, through Kutting's (2000, p. 36) notion of "environmental effectiveness," or Seelarbokus's (2005) concept of "effectiveness as environmental modification." Moreover, a greater grasp of the nature of environmental data (un)availability will help bridge the gap between the policy-science interface by opening up avenues for incorporating environmental assessments in international environmental policy-making and policy evaluation.

Part of the discussions in this article draws on an earlier study of the effectiveness of selected global IEAs from the environmental modification perspective, which incorporated the administration of a survey instrument to selected IEA Secretariats requesting for, inter alia, IEA-related environmental data (Seelarbokus, 2005). That earlier experience informs the typology being proposed for environmental data unavailability, as well as the discussions pertaining to some of the causes for such data unavailability. This article also discusses the longstanding efforts of the IEA institutions in the field of environmental monitoring and IEA effectiveness evaluations—an element that is often not considered when the effectiveness of IEAs is discussed in the existing literature, or when the policy usage of environmental indicators is discussed in a global context (e.g., de Sherbinin, Reuben, Levy, & Johnson, 2013; Hovi, Sprinz, & Underdal, 2003).

This article is organized in three sections. The first part of this article presents the typology of data unavailability, the second part discusses some of the causes for the lack of data, and finally, the third part makes some recommendations for strengthening environmental databases and data-sharing networks to facilitate a greater understanding of the effectiveness of IEAs in improving global environmental conditions.

A Typology of Data Unavailability

Generally speaking, when faced with a response of "no data available," there is an implicit assumption that this necessarily equates to "no data *exist.*" However, the phrase of "no data available" needs to be further qualified as it does not necessarily always connote *complete absence of data*. In fact, a response of "no data available" can be further categorized as follows: (a) *true unavailability*, (b) *false unavailability*, and (c) *external availability* (see Figure 1).

Instances of "true unavailability" of data refer to the real absence of data due primarily to (a) the difficulties of data collection, data analysis and interpretation, and data compilation; or (b) the absence of any policies or mandates for such data collection. Data collection and analysis can be an impossible undertaking in situations where there are serious scientific, technical, or technological limitations of data collection processes and/or data analysis, inadequate or lack of qualified personnel, insufficient financial resources for data collection and analysis, or lack of a political/institutional mandate for data collection and analysis. True unavailability of data may occur in the case of a newly negotiated IEA, for example. It is likely that when an issue is new on the international agenda, there may not be sufficient baseline data, and collecting such data may be a difficult enterprise due to lack of scientific know-how or the other above-mentioned resource constraints.

"False unavailability" of data relates to those instances where IEA institutions report "lack of data" despite internal publications (e.g., Secretariat brochures, reports of the COPs, and national reports by party members, inter alia) attesting otherwise. In this case, "lack of data" does not necessarily signify *absence* of data; rather, it is mostly a case of *non-reporting* of data. In these instances, the relevant data are available, albeit often in an unprocessed or non-consolidated format, which might render their reporting problematic for a resource-constrained Secretariat, for example. In Seelarbokus's (2005) earlier study, for example, the Helsinki Commission (HELCOM), the OSPAR Commission, and the UNEP (with regard to its MAP) did not report any requested data, though further research into their various publications revealed that the solicited data were available—although in a disaggregated format.

"External availability" of data occurs when IEA Secretariats report having no data, even though the relevant data may be available at external sources such as research institutions, non-governmental organizations (NGOs), governmental institutions, or independent researchers and consultants. In some of these cases, the IEA Secretariats seem to be cognizant of the existence of these external sources. In its

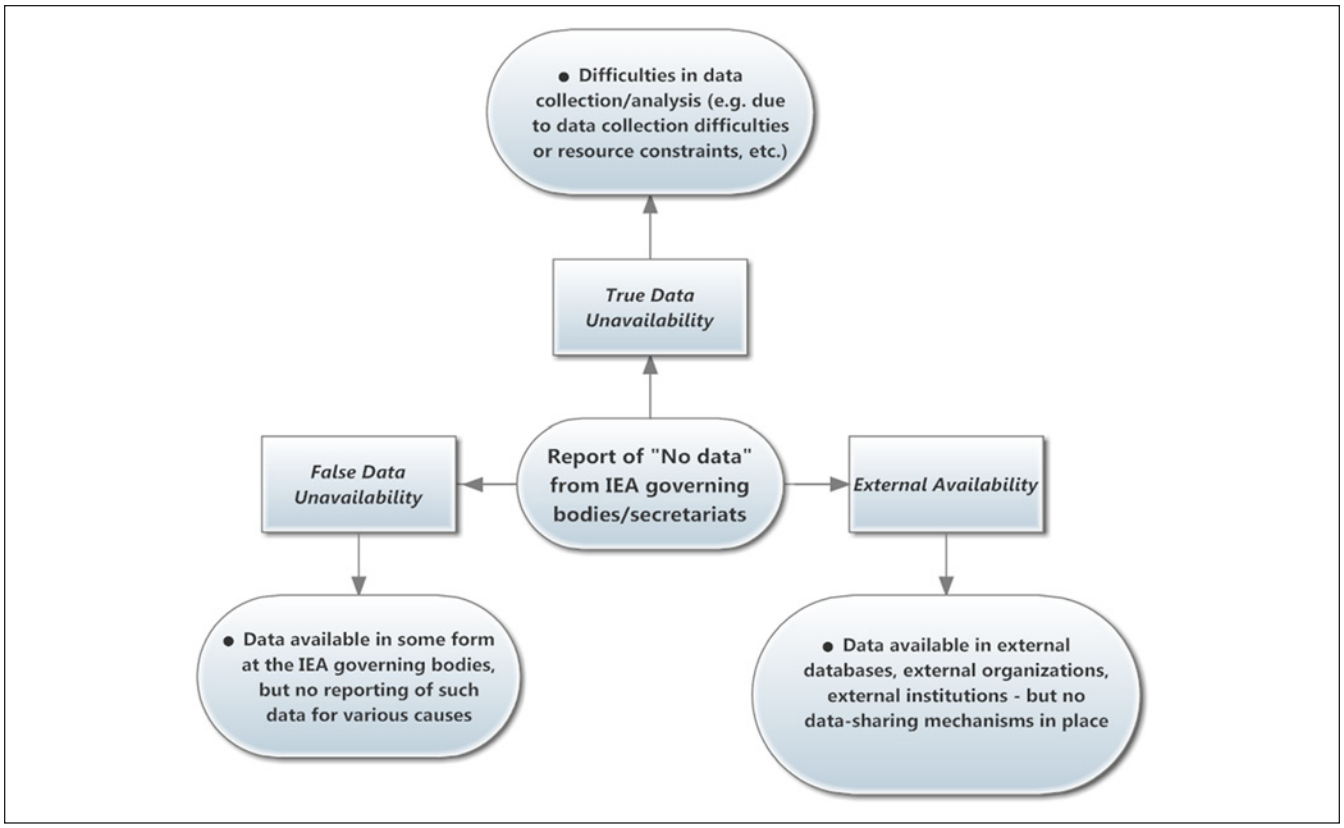

Figure 1. A typology of data unavailability.

survey response, for example, the Ramsar Bureau (i.e., the Secretariat to the Convention on Wetlands of International Importance Especially as Waterfowl Habitat—Ramsar Convention) alluded to Wetlands International and to the World Conservation Union (IUCN) for data on waterfowl population (Seelarbokus, 2005). The 1973 Agreement on the Conservation of Polar Bear referred to the World Wildlife Fund (WWF) and to several independent publications dealing with polar bears—such as Prestrud and Stirling (1994) and Baur (1996). Similarly, the International Maritime Organization (IMO) pointed to the following organizations for data on oil discharged from ships into the sea: the U.S. Coast Guard and the U.S. National Academy of Sciences; the United Nations Group of Experts on the Scientific Aspects of Marine Pollution (GESAMP); the International Tanker Owners Pollution Federation (ITOPF); and the Lloyd's List (Seelarbokus, 2005). Unfortunately, the data available from these external sources remain as external data—they are neither integrated with the operation of the IEAs nor compiled in a global database of IEA-relevant data.

As is obvious from the above, data unavailability is not always a case of true unavailability; in some instances, false unavailability or external availability of data may be masked under the guise of true unavailability. Thus, depending on the type of data unavailability we are dealing with, in some instances, *absolute* data unavailability can be a "myth"—the more so when we consider the existence of numerous projects to develop environmental indicators and create environmental data repositories (Environment Canada, 2012; Environmental Protection Agency, 2012; European Environment Agency, 2012; Organisation for Economic Co-Operation and Development [OECD], 2008; United Nations Statistical Division [UNSD], 2013), NGO publications, the research conducted by scientists and independent researchers, and global environmental monitoring systems such as UNEP's Global Environment Monitoring System (GEMS) (Gwynne, 1982), the Integrated Global Observing Strategy (IGOS; and its associated Global Ocean Observing System [GOOS]; Global Climate Observing System [GCOS]; and the Global Terrestrial Observing System [GTOS]), the World Weather Watch (WWW), OBIS-SEAMAP,[1] the World Water Assessment Program (WWAP), the Global International Waters Assessment (GIWA), the Global Atmosphere Watch (GAW), and the ongoing efforts toward the construction of a Global Earth Observation System of Systems (GEOSS), inter alia).

What can be the reason for the various types of data unavailability described above? Why do IEA Secretariats not report the requested environmental data? This article identifies three main causes for data unavailability: (a) lack of an

official mandate for data collection, (b) IEA management challenges, and (c) perception issues. These points are elaborated below.

Causes for Data Unavailability

Lack of Official Mandate for Data Collection, Compilation, and Reporting

Analysis of the response of some of the IEA Secretariats in Seelarbokus (2005), in tandem with the perusal of the relevant IEA texts, reveals that many of the Secretariats cannot be faulted for not reporting data. Most of the IEA Secretariats are *not officially and legally mandated* to either assess the state of the environment or to compile and report on environmental data. The responsibilities assigned to the Secretariats normally resort to routine secretarial duties such as organizing meetings, preparing the agenda, producing reports, and transmitting communication to party members, inter alia. For example, based on the text of the Ramsar Convention, the Ramsar Bureau is bestowed with the typical responsibilities of convening meetings of the COP, maintaining and updating the list of wetlands of international importance, and acting as a communication link among party members, inter alia.[2] The Ramsar Bureau's responsibility is "to be *informed* by the Contracting Parties of any changes in the ecological character of wetlands,"[3] and not of actually being responsible for monitoring or compiling data on the ecological character of wetlands. Thus, the Bureau rightly pointed out in its survey response that it is not responsible for maintaining statistics or for conducting research. In the Bureau's words,

> This is the secretariat for the Convention on Wetlands and the mandate is to facilitate the Contracting Parties in the implementation of the Convention; we are not a research institution and keep no figures here on wetland loss or waterfowl population estimates.[4]

The same is true for the IMO with regard to the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78). The legal functions and responsibilities of the IMO, as specified in Article 11 of MARPOL 73/78, are restricted to mere receipt and circulation of information pertaining to the implementation of MARPOL 73/78. It is not surprising therefore that in its reply to the survey, the IMO stated (Seelarbokus, 2005),

> It may be noted that most of the data requested . . . is not kept at IMO, since the implementation of MARPOL 73/78 is the responsibility of Parties, which are not requested to report such information to the IMO Secretariat . . . The IMO is the administrative organization providing secretarial services to the Contracting Parties, without charging them for these services.

Environmental data are more readily available from IEAs supported by specialized committees or commissions with an official mandate to engage in environmental monitoring, to collect and analyze data, and to evaluate the effectiveness of the relevant IEAs. The Scientific Committee of the 2001 Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS), for example, is bestowed with the legal mandate to "conduct scientific assessments of the conservation status of cetacean populations,"[5] and was thus the driving force for highlighting the importance of securing baseline data on the cetacean population and its distribution, and for the development of the ACCOBAMS Survey Initiative (Convention on Migratory Species [CMS] Secretariat, 2012). Other examples of such IEA-decreed bodies include the European Monitoring and Evaluation Programme (EMEP), the North Atlantic Salmon Conservation Organization (NASCO), the Inter-American Tropical Tuna Commission (IATTC), the International Whaling Commission (IWC), the International Commission for the Protection of the Rhine (ICPR), and the already mentioned HELCOM and OSPAR, among others.

All these institutions have been successful in (a) meeting the demands for new scientific data (e.g., EMEP's scientific input in the evolution of the Convention on Long-Range Transboundary Air Pollution [LRTAP] and its associated protocols[6]; OSPAR's Joint Assessment and Monitoring Program [JAMP])[7]; (b) conducting valuable research (e.g., the IATTC's and NASCO's extensive research on tunas and salmon, respectively) (Bayliff, 2001; Clifford & Bayliff, 1985)[8]; HELCOM's evaluations of the concentrations of heavy metals in the Baltic Sea Area, including the establishment of time-series analyses to demonstrate reductions in pollution levels); and (c) publishing environmental data (e.g., OSPAR's Quality Status Reports [QSRs][9]; IWC's *Journal of Cetacean Research and Management*, and its Scientific Committee Reports).[10]

However, merely having a clear legal mandate for data collection and analysis is not sufficient condition for data availability. An effective management framework and an appropriate level of institutional support for the fulfillment of the legal mandate are important as well. These are discussed below.

IEA Management Challenges

Dilution of accountability, overlap of goals, and lack of integration across implementation templates. The literature on IEAs has focused extensively on such themes as regime formation, compliance, implementation, and effectiveness (e.g., Benedick, 1991; Breitmeier et al., 2011; Miles et al., 2002; Mitchell, 1994b; Rittberger, 2000; Underdal, 2002; Victor, Raustiala, & Skolnikoff, 1998; von Moltke, 1988; Young, 2011). However, not much attention has been devoted to the issue of the *management and administration* of the IEAs. Only recently has scholarly attention been devoted to the institutional arrangements of IEAs, the "global governance

architecture" of environmental regimes, and the role of IEA Secretariats as "international bureaucracies" and as "managers of global change" (e.g., Andresen & Hey, 2005; S. Bauer, 2006; Biermann & Siebenhuner, 2009; Churchill & Ulfstein, 2000; Frank, Philipp, Harro van, & Fariborz, 2009; Sandford, 1994).

How are most of the IEAs being managed and operated on a daily basis? Typically, most of the post-Stockholm IEAs function under a loosely structured COP, which is a collective entity comprising all the party members of the IEAs. Many IEAs shifted the mandate for implementation monitoring and review functions either to each individual contracting party or to the COP in general. Examples include MARPOL 73/78,[11] the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (also known as the London Dumping Convention),[12] and the latter's 1996 Protocol,[13] the Ramsar Convention,[14] and the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal,[15] among others.

The COP apparently became the preferred institutional arrangement of IEAs because of its flexibility, low costs, and the general dissatisfaction in the 1970s with the then prevalent alternative of establishing an inter-governmental organization (Churchill & Ulfstein, 2000). However, it can be argued that what has been gained in terms of flexibility and low costs has been lost in terms of accountability, a clear line of responsibility for the official mandates, and institutional support. Although it is true that the COP is the supreme decision-making authority governing the operation of the IEAs, it is nevertheless difficult to really circumscribe the identity of the COP. Who exactly is the COP? Because the COP is a body of all party members (which, in the case of the Climate Change treaty,[16] for example, can run up to 195 nation states), who shoulders responsibility for fulfilling the legal mandates of the COP? In those many instances where the COP is bestowed with the responsibility of monitoring the implementation of the IEA, who bears ultimate accountability?

In view of the diffusion of responsibility due to the COP's collective embodiment of all party members, there is a lack of ownership at the international level for treaty management and operation. It is the case of all party members being responsible for the overall success of the IEA, with no single country or entity being solely accountable thereof—a case of Thompson's "problem of many hands" (Thompson, 2005). The lines of responsibility become blurred and accountability is diluted. This situation is rendered more challenging by the overlap that exists among the goals and functions of many IEAs. Several IEAs try to regulate the same environmental parameters—especially those for the protection of fauna and flora, or marine water protection (Seelarbokus, 2010). Despite this overlap of goals and responsibilities among IEAs, the relevant secretariats have historically performed in isolation and are not integrated insofar as data sharing or consolidation is concerned.

To facilitate the management of the IEAs and the fulfillment of their legal mandates, many COPs resort to the establishment of special subsidiary bodies and working groups to focus on specific themes in a more structured way—for example, Ramsar's Scientific and Technical Review Panel [STRP], which was set up by the Ramsar COP through its Resolution 5.5 in 1993. Likewise, the COP of the CBD has the following subsidiary bodies: ad hoc technical groups, compliance committee, expert groups, and working groups on access and benefit sharing, protected areas, and review of implementation of the convention, inter alia.[17] The Basel Convention has a Bureau of the COP (comprising a President, three Vice-Presidents, and a Rapporteur) as well as an Open-Ended Working Group (OEWG) to assist the COP in its various implementation and review objectives. These COPs, through standing or ad hoc committees or other technical groups, have been active in conducting research, in developing effectiveness indicators and in publishing scientific data.

Moreover, in an attempt to avoid duplication of efforts, there is now a definite shift toward greater integration and synergies (including financial ones), and functional interlinkages among the various IEAs (e.g., see Jinnah, 2011, for details on marketing linkages between the CBD and the UNFCCC).[18] An early merger was between the two regional IEAs—the 1972 Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft (the Oslo Convention) and the 1974 Convention for the Prevention of Marine Pollution from Land-Based Sources (the Paris Convention)—to yield the 1992 OSPAR Convention. Adopting an ecosystem approach, OSPAR is involved in integrated environmental assessments and monitoring.[19]

Other prominent examples of integration, especially from the environmental monitoring and data collection perspective, include the ACCOBAMS and its Survey Initiative, and the MAP. ACCOBAMS itself is a result of inter-Secretarial consultations among the Secretariats of the Barcelona convention,[20] the CMS, and the Bern Convention.[21] The idea was to establish a framework for "cooperation, coordination and transmission of information on cetaceans between the Secretariats" of the three IEAs.[22] Moreover, there is a growing emphasis on data-sharing platforms. The ACCOBAMS Scientific Committee, at its recent meeting in November 2012, highlighted the benefits of INTERCET as a data-sharing and data integration platform based on Geographic Information System (GIS) technology, and established a Steering Committee to facilitate collaboration and avoid waste of resources and duplication of efforts (ACCOBAMS, 2008).

The MAP, on its part, supports an integrated coastal area management framework through the 2008 Protocol on Integrated Coastal Zone Management (ICZM), which came into force in 2011 (UNEP/MAP, 2003). The ICZM Protocol calls for "better coordination, integration and holistic management of human activities in the coastal zones," and promotes an ecosystem approach to support

ecological objectives, which were recently agreed upon in the 2012 meeting of the parties (UNEP/MAP, 2012a, p. 73). Article 33(b) of the Protocol calls for the implementation of the Protocol "in coordination and synergy with other Protocols."[23] The ICZM Protocol also evokes other IEAs within its text—for example, the UNCLOS, the Ramsar Convention, and the CBD. The 2012 State of the Mediterranean Marine and Coastal Environment provides an integrated assessment of the Mediterranean environment based on ecological indicators, and providing data on the state of the ecosystems in the region (UNEP/MAP, 2012c).

Agenda 21, the outcome of the 1992 United Nations Conference on the Environment and Development (UNCED), as well as several other publications have highlighted the need for streamlining and harmonizing policies, administrative services and institutions, and reporting systems (e.g., World Resources Institute, 2003). In 2000, UNEP organized a workshop to consider "approaches towards development of a harmonized information management infrastructure for the treaties." (UNEP/World Conservation Monitoring Centre, 2000). Often, COP resolutions mandate such integration. At its first COP meeting in December 1992, the Basel Secretariat, in its Decision I/4, recognized the relationship between the Basel Convention and the 1972 London Dumping Convention. The Basel Secretariat recommended that technical standards of the London Dumping Convention be fully taken into account during the further development of technical guidelines for the environmentally sound management of wastes subject to the Basel Convention (Basel Action Network, 2011). Similarly, Decision II/13 of the Second Meeting of the COP to the CBD requested the Executive Secretary to coordinate with the secretariats of other biodiversity-related conventions "with a view to facilitating the exchange of information and experience, to explore harmonization of reporting requirements, to coordinate work programs and to consult on how other conventions can contribute to the implementation of CBD."[24] The Ramsar Convention has undertaken several MoUs with other treaty secretariats relating to fauna protection—for example, CBD, CMS, UNCCD, the Natural Heritage convention,[25] the Cartagena Convention,[26] the Barcelona Convention,[27] and the South Pacific Regional Environment Programme (SPREP), among others.[28] In 2004, the Ramsar Bureau has also established a Joint Work Programme (JWP) with the CMS Secretariat and the Secretariat of the African-Eurasian Migratory Waterbirds (AEWA).

The "synergies process" among the Basel Convention, the Rotterdam Convention,[29] and the Stockholm Convention on Persistent Organic Pollutants aims at coordination and cooperation among the three IEAs, to promote stronger implementation of the three IEAs, an efficient system of support for the parties, and to reduce inefficiencies and administrative burden.[30] The COPs of the three IEAs approved in 2011 a series of "synergies decisions," which call for an interim organization of the secretariats (with a Joint Head), "joint activities, joint managerial functions, joint services, synchronization of budget cycles, joint audits, review arrangements, and the holding of simultaneous extraordinary meetings of the COPs in 2013."[31] The Secretariat has been restructured from a "convention-specific programmatic structure to a matrix structure in a single integrated Secretariat" (Basel Secretariat, 2012). With this revitalized synergies process, a new feature has cropped up on the international agenda—the holding of extraordinary meetings of the COPs (ExCOPs), which are held simultaneously with the ordinary meetings of the COPs. The first such meeting (ExCOP-1) was held in Indonesia in 2010, and the second one took place in Geneva from April 28 to May 10, 2013 (Basel Secretariat, 2013a). These back-to-back meetings are expected to promote the development of coherent policies and joint synergistic activities. According to a 2012 report of the Basel Secretariat, the synergies process has allowed the strengthened Secretariat to better support party members, and the back-to-back meetings in 2013 were associated with anticipated savings of between US$1.2 million and US$1.5 million (Basel Secretariat, 2012). However, a more recent review of the synergies process conducted by the Secretariat in February 2013 reveals that though the synergies process has resulted in strengthened implementation of the IEAs, the anticipated benefits of reduced administrative burden have however not been realized yet (Basel Secretariat, 2013b).

It is obvious that the drive for harmonization and establishment of synergies among IEAs and global environmental policies will likely be further strengthened in the future. *The Future We Want*, the report of the 2012 Johannesburg Summit on Sustainable Development, speaks about IEAs in terms of "clusters" and calls for a "holistic and integrated approach to sustainable development," inviting nation states to "reduce fragmentation and overlap and increase effectiveness, efficiency and transparency, while reinforcing coordination and cooperation"[32] among IEAs (see also Chambers, 2008; von Moltke, 2001; Ward, 2006). The report also emphasizes the need for promoting the "science-policy interface through inclusive evidence-based and transparent scientific assessments," and recognizes the Global Environment Outlook (GEO) as a much needed mechanism for keeping under review "the state of the Earth's changing environment and its impact on human well-being."[33] However, the merging of IEA institutions or the establishment of synergies across IEAs will have to be managed wisely to secure commitment from all stakeholders. In the case of the merging of the ACCOBAMS Secretariat with CMS, for example, challenges included typical turf battles, lack of trust, and loss of the expected efficiencies or effectiveness (Kurukulasuriya & Kitakule-Mukungu, 2008).

Resource constraints. As discussed earlier, IEAs with commissions or special bodies seem to be more successful than mere COP-based IEAs insofar as environmental monitoring

and data availability are concerned—especially if they benefit from support from party members which are from the developed world (e.g., HELCOM, NASCO, IATTC, etc.). The successes of these IEAs in terms of environmental monitoring and data availability can be related to the fact that they benefit from functional specialization and adequate allocation of resources—both financial and administrative. In the case of the Regional Seas Programme for the East African Region, for example, UNEP ascribes the greater success of the Programme for the area of the Regional Organization for the Protection of the Marine Environment (ROPME)[34] to the fact that the party members had experienced rapid development and funding was available from them (UNEP, 1985). However, out of the seven CMS Agreements, the Agreement on the Conservation of Gorillas and their Habitats is the only one with range states from developing or least developed countries, and thus has to rely on CMS funding to a greater extent than the other CMS IEAs (UNEP, 2011a).[35]

Indeed, it is a fact that most IEA Secretariats are notoriously understaffed and underfinanced. Financial constraints, especially, seem to be the norm (Sandford, 1994). IEA institutions remain vulnerable to funding by party members, and lack of payment or serious delays in honoring pledges remains a formidable challenge (see, for example, Skjaerseth, 1996; also UNEP/CMS Secretariat, 2011b). The IEA Secretariats are keenly aware of the specific institutional and financial limitations that impede their activities and deliverables, especially in situations where the IEAs witness rapid growth either in their membership or in their programs. A 2007 UNEP-commissioned management review of the CBD Secretariat found that the latter was stretched thin resource wise—either in terms of human capital or financially. The study found that there was "a growing discrepancy between the activities assigned to the Secretariat by the Parties and the resources approved for their execution, and that it will be difficult for the Secretariat to maintain this pace of activity" (Stratos, 2007, p. 4).

To palliate these typical financial and human resource limitations, Secretariat staff are often loaned from hosting organizations or other willing governments. The Ramsar Secretariat staff, for example, are considered, from the legal standpoint, to be the personnel of the IUCN. The IMO provides secretariat services for at least 25 main treaties, not including the numerous associated protocols.[36] UNEP services at least 10 IEAs, including the CBD, the CMS, and several of its supplementary agreements (e.g., AEWA,[37] EUROBATS[38]), the Desertification Convention (UNCCD),[39] the Regional Seas treaties, and the Ozone treaty, among others. Secretariat functions for the Gorilla Agreement are being provided by the CMS Secretariats, which also services at least 14 other Memoranda of Understandings (MoU) regarding several species (UNEP, 2011a). To manage the limited resources, the CMS Secretariat works in close partnership with UNEP and other organizations such as the UNEP-led Great Ape Survival Partnership (GRASP), and the World Association of Zoos and Aquariums (WAZA) (UNEP, 2011b). The CMS has called for increased staff capacity to allow it to meet "its growing commitments to implement memoranda of cooperation and to keep meaningful contacts on a regular basis," while also contemplating the possibility of contracting out certain activities (e.g., regular summary report on the implementation of the IEAs) (UNEP/CMS Secretariat, 1997). Moreover, the Government of Germany and Finland have agreed to provide support for extra human resources (UNEP, 2011a; UNEP/CMS Secretariat, 2011a).

Overall, in some instances, the likely impact of these resource constraints is that the Secretariats and other IEA institutions cannot invest in human capital development, many management functions (such as strategic planning, budgeting, human resources management, etc.), institutional capacity building, the conduct of scientific work, and data compilation and analysis. The ACCOBAMS Survey Initiative, for example, has been delayed in its implementation (a delay of 10 years so far) due to financial difficulties, and fundraising strategies are now being considered to facilitate the undertaking (ACCOBAMS, 2012). Moreover, many IEA Secretariats do not have a specialized public relations unit and no data-sharing mechanism to satisfy public demand for data or to liaise with other research institutions to consolidate environmental databases.

Lack of standardization of terms and methodologies. Lack of standardization of terms and cross-country differences in national definitions and terminologies also complicate the processes of data collection and analysis. The Secretariat of the Basel Convention, for example, faces difficulties in data compilation due to the different national definitions for the term "hazardous wastes." In recognition of the fact that different governments may define "hazardous wastes" differentially, Articles (1)(b) and 3 of the Basel Convention make allowances for different national definitions of hazardous wastes. The interpretation of various terminologies and the classification of wastes is an ongoing discussion, and the Basel Secretariat is in the process of developing further technical guidelines to distinguish what is to be considered waste and non-waste with regard to the transboundary movements of electrical and electronic wastes (Basel Secretariat, 2012).

The International Labour Organization (ILO), which hosts environmental treaties relating to occupational safety and health, such as the Benzene Convention[40] and the White Lead in Paint Convention,[41] also encounters difficulties in compiling worldwide data relating to occupational hazards. In the case of the Benzene Convention, for example, the ILO relates the lack of data on cases of benzene poisoning to the fact that cases of benzene poisoning may be characterized under various terminologies worldwide. In ILO's words,[42]

> "[A]cute poisonings will be recorded as "accidents" and the pathology induced by benzene and ionizing radiation may come

> under different headings such as leukemia . . . or occupational cancer . . . "

Important cross-country variations in the methodologies used for data collection, analysis, and compilation also complicate the scene. These variations undermine the ease of data comparability on an international scale. Attempts at arriving at a global compendium of relevant environmental data require massive resources and efforts, which are often not easily available. As noted by ILO in the case of the Ionizing Radiations Convention,[43]

> The information . . . does not exist at the international level and its compilation at the national level would take some efforts which may be very significant, depending on the manner in which the statistics are compiled and maintained over the years . . . It is the reason ILO produced a Code of Practice on Recording and Notification of Occupational Injuries and Diseases.

These definitional and methodological variations do not permit a comprehensive data compilation process and complicate the accuracy of the data compiled. The 2004 UNEP-commissioned report on the review of marine pollution in the UNEP's Regional Seas highlighted the need for developing a harmonized system for data collection methodologies, data sharing, and data reporting to develop a regional database (de Mora, 2004; see also UNEP, 1985), and the Regional Seas Programme currently promotes standardization of analytical techniques and regional intercalibration of data. In 2009, UNEP noted that no systematic data of marine litter was available mostly due to different methodologies in data collection and measurement, "lack of standardization and compatibility between assessment methods," and "lack of systematic scientific knowledge on the amounts, sources, fates, trends and impacts (social, economic, and environmental) of marine litter" (UNEP, 2009, pp. 9, 11). UNEP thus recommended the development of an "internationally accepted methodology" for regional and national marine litter monitoring. Moreover, to promote the safety of chemicals and the environmentally sound management of toxic chemicals, the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) was created pursuant to an UNCED's recommendation (United Nations, 2009).[44]

The need for integrated environmental assessments and standardization of protocols for data collection and analysis is widely recognized in many IEA Secretariats (e.g., the Water Convention Secretariat, the MAP, etc.). The push for synergies and integration across IEAs, as discussed earlier, will likely result in better harmonization of methodologies and data protocols. Integration of monitoring and harmonization of datasets, and uniform reporting is recognized as being conducive to sound decision making (Economic Commission for Europe [ECE], 2006). Among the IEA institutions, several Regional Seas Programmes have adopted a standard definition for pollution to harmonize terminologies and strategies, and there is greater emphasis on strengthening monitoring networks (de Mora, 2004; UNEP, 2007). Similarly, the International Council for the Exploration of the Sea (ICES) and OSPAR have adopted a standard definition for background concentrations of contaminants, as well as standard methodologies to assess these background concentrations to ensure a "consistent and integrated assessment of chemical and biological effects data against background" (Law et al., 2010, p. 152). UNEP, in concert with the World Health Organization (WHO), developed a guide for freshwater monitoring networks, based on experience acquired from the GEMS/Water monitoring network (UNEP/WHO, 1996).

Non-reporting of data by party members. Most IEAs mandate some regular reporting from party members. Unfortunately, non-reporting of data to the IEA Secretariats remains a major challenge. Even if the data may be available in some form, reporting of such data to the treaty Secretariats may not be an automatic endeavor. In fact, many of the treaty Secretariats surveyed in Seelarbokus (2005) have reported severe data limitations due to non-reporting from party members—especially the developing countries. The ILO pointed out that in many instances, data reporting failure arises mostly due to the dire socio-economic and political complexities faced by the developing countries (see also Brinkerhoff & Cage, 2002; Ervin, 2001; Fouere, 1988; General Accounting Office [GAO], 1992; Horberry & Le Merchant, 1991; Sand, 1991; Talbot, 1990; Weber, 1991; Zimmermann, 1991). And when the developing countries do finally report the relevant data, serious time lags occur between the official request for data and the actual reporting. The IMO, for example, was still receiving in 1996 (February 21) reports on permits issued in 1992 under the 1972 London Dumping Convention, and more than half of the party members fail to report (Stokke, 1998-1999). UNEP's survey on pollutants in the Mediterranean region has faced similar delays. UNEP conducted a first survey on pollutants from land-based sources in the Mediterranean in 1976-1977 and a second survey was done in 1989, with a reminder sent in 1995. Data being reported in 1995 often pertained to the first questionnaire of 1976-1977, thereby exemplifying a time lag of almost two decades in fulfilling data requests (UNEP, 1996). In its recent *Report of the Committee of Experts on the Application of Conventions and Recommendations*, the ILO noted "with regret" that Guinea has failed to submit its report under the Benzene Convention for the seventh consecutive time and that Kuwait, while having submitted a report on periodical labor inspection visits, has nevertheless missed submitting requested information on how the Convention is being applied (International Labour Office [ILC], 2013, pp. 734-735). The fact that numerous IEAs require some sort of reporting complicates the issue as reporting can become a burden for party members (Loibl, 2005)—especially the most disadvantaged ones.

To reduce the burden of reporting, the CMS has encouraged harmonization of national reporting under all its Agreements as well as with the CBD—(UNEP/CMS, 1997a).

Considering non-reporting of data from party members to be a "serious problem," and being cognizant of the fact that non-reporting is pervasive across many IEAs, the Chair of the Implementation and Compliance Committee of the Basel Convention took the initiative in June 2012 to contact other IEAs (viz. CITES, the Cartagena Protocol on Biosafety, the Stockholm Convention, the Montreal Protocol, the London Protocol, and the Kyoto Protocol) to "establish a dialogue" and "share experiences."[45] Moreover, in recognition of these domestic constraints, the UNEP/MAP is promoting a "report-once approach" for its *State of the Environment Reports.* This approach is based on data collection "according to mutually agreed standards so that they can be used for multiple purposes, including national needs, requirements of other conventions, needs of other policy frameworks such as the European Union and more" (UNEP/MAP, 2012b).

Unfortunately, in some situations, a report of lack of data may be due to perception issues—either in terms of the self-understanding of the role of the IEA institutions, in terms of the conceptualization of "effectiveness," or in terms of the perceived negative impacts of data reporting. These are discussed below.

Perception Issues

Dissonance between the mandated and the self-perceived role of IEA Secretariats. Although the lack of an official mandate for IEA Secretariats to collect, compile, and analyze data may, as discussed earlier, explain lack of data in certain instances, non-reporting may also be prevalent among those Secretariats and Bureaus officially bestowed with the responsibility of collecting data and assessing the success of IEA implementation. It seems that in some cases, a report of "no data" from some of the Secretariats can partly be ascribed to a dissonance between the formal mandate of the IEA Secretariats and the latters' self-perception of their roles and functions. Although a reading of the relevant IEA text would lead one to believe that the Secretariat would have to function as a monitoring body, *the Secretariat may see itself* as functioning only as a "facilitator" of implementation.

The Regional Convention for Cooperation on the Protection of the Marine Environment from Pollution (Kuwait, 1978) requires the Council of the ROPME (made up of the Contracting States) to "review and evaluate the state of the marine pollution and its effects on the Sea Area on the basis of reports submitted by the parties and relevant international and regional organizations" (Article XVII(d)). In spite of this mandate for ROPME to be involved in the assessment of the marine environment, and in spite of ROPME being involved in several environmental monitoring assessments,[46] in Seelarbokus's (2005) earlier study, ROPME portrayed itself more as a coordinator and facilitator for regional marine protection rather than as a data churning organization. ROPME reported extensively on the seminars and conferences organized but failed to submit any environmental data pertaining to the Convention Area (Seelarbokus, 2005). Similarly, the 1972 London Dumping Convention (Article 6[4]) and its 1996 Protocol (Article 19(3)) established legal provisions for contracting parties to submit to the IMO reports on, inter alia, the substances dumped and the conditions of the seas, and for the IMO to collaborate in assessments of the marine environment. However, as discussed earlier, the IMO does not consider itself to be data repository, focusing more on its mission of providing safe shipping than on compiling data on the marine environment.[47]

Apart from the lack of alignment between the self-image and IEA-mandated functions, there also seems to be the problem of an "adding-on" of mandates, especially for those IEAs that experience rapid growth. As an IEA grows and its activities become more intricate and complex, the COPs often assign additional duties to the Secretariats. One finding of the Stratos Management Review of the CBD Secretariat was that the mandates of the Secretariat were not clear, with varying interpretations of the role of the Secretariat in treaty implementation support (Stratos, 2007). Staff members were unclear about the exact role of the Secretariat in providing implementation support of the CBD, and there were competing demands placed on the Secretariat—for example, servicing meetings, supporting party members, including servicing the protocols to the CBD. The report also found that there was too much time devoted to servicing of meetings as opposed to providing support for treaty implementation.

Varying perspectives on IEA effectiveness. It may be tempting to argue that the lack of data or the lack of reporting of data is an indication of the fact that IEA institutions are not concerned with effectiveness. However, almost all of the IEA institutions demonstrate concerns with effectiveness. There have been numerous evaluations—either self-evaluations or external assessments—that have been conducted to analyze the effectiveness of the IEAs, especially in the wake of UNCED (Haas, Keohane, & Levy, 1993; UNCED Report, 1992; UNEP/CMS, 2010; Wettestad, 1996).

Interestingly, rather than focusing solely on environment-based concepts of effectiveness, the IEA institutions tend to adopt a *multi-track perspective on effectiveness*. Apart from the expected sustained focus on developing environmental indicators and establishing baseline information and trends in the identified environmental indicators (Seelarbokus, 2014), effectiveness is also often analyzed in terms of proxy effectiveness indicators such as the number of meetings or seminars held, joint research programs established, country reporting successes, participation rates, and the number of agreements negotiated under the parent convention, inter alia. The CMS Secretariat, for example, considers that the CMS treaty has been successful in view of the seven additional agreements negotiated under the ambit of the main CMS treaty, the growth over the years in the number of contracting parties, MoUs agreed upon with other IEA Secretariats or

international NGOs, the establishment of coordinated aerial surveys to study the seal population (in regard to the Seal Convention), as well as the status or trends in the population of the other relevant species (Reijnders et al., 2009; UNEP/CMS, 1997b).

Similarly, NASCO gauges its success by the introduction of new laws and regulations in contracting countries, as well as by the successful establishment of a database of salmon rivers that facilitates monitoring of progress with regard to the conservation and restoration of salmon stocks. The Bern Convention seems to view its success in the fact that it has successfully revised appendices to the treaty to include 115 species of freshwater fish and 81 species of invertebrates. Moreover, it has been able to carry out studies on habitat protection and has set up "specialized working groups" on bears, wolves, amphibians, reptiles, and plants, inter alia (Council of Europe, 1991, p. 28). IMO (1995, 1996), on its part, considers the issuance of permits for disposal at sea and incineration, compliance with notification and reporting requirements, as well as the establishment of programs of technical assistance to help governments enforce treaties and other instruments to be an indication of treaty success.

In view of the serious resource constraints faced by the IEAs, and the fact that data collection, compilation, and analysis require financial and human capital investments, it is not surprising that the IEAs will tend to turn toward indicators of effectiveness which might be more readily available and less costly in terms of their use. From an environmental data availability perspective, however, this multi-track perspective on effectiveness, with its preference for proxy effectiveness indicators, ultimately works to reinforce the problem of data unavailability.

Unwillingness to report. Certain cases of "false unavailability" may be related to sheer *unwillingness* to report the requested data due to various perceptions regarding the possible negative impacts of publicizing the data or due to the sensitivity of the issue area (e.g., Skjaerseth, 1996). While discussing the MAP, Yeroulanos (1985) considers that "decisions of not to report" may stem from fears of negative repercussions of reporting, especially where tourism and political considerations are involved. Publicizing unfavorable data may disadvantage certain areas compared with others for which data are either unavailable or suppressed (Yeroulanos, 1985). This fear of reporting environmental data, however, is not confined to the IEA institutions. Fear of reporting has also been documented in the national context (e.g., Solomon, 1998). Thus, it is likely that such fears of reporting may impede party members from sharing environmental data with the COP or IEA Secretariats, which further complicates the compilation of environmental data at the international level.

Non-reporting of data may also be due to concerns of safeguarding intellectual property rights. To promote data availability, the Data Availability Group (DAG) of the IWC has established modalities for use of data such as no transmission to third parties, restrictions on citations, the offering of co-ownership to data owners, publication rights, and copyright clarification, inter alia.[48] As noted by the DAG, "[d]ata represent a significant temporal and financial investment by scientists and research institutes—use of their data by others should be accompanied by appropriate safeguards." However, there is a growing recognition at the international level for promoting open access to scientific information (e.g., through digital archives). The 2004 International Workshop on Strategies for Preservation of and Open Access to Scientific Data, held in Beijing, China, focused on strategies (especially Chinese) for promoting open access to scientific data and international scientific collaboration (National Research Council, 2006). Moreover, CODATA (the Committee on Data for Science and Technology)[49] has been working toward integration and sharing of data internationally to promote decision making, and several CODATA publications and conferences have focused on the need for internationally compatible environmental data.[50]

What Can Be Done to Enhance Environmental Data Availability for Analyzing IEA Effectiveness?

How can we strengthen environmental data collection, analysis, and reporting at the various levels to promote a better understanding of the environmental effectiveness of IEAs? In an era of performance management and benchmarking, international environmental accountability relies on demonstrating global environmental improvement. There is no doubt that there are serious environmental data gaps that exist—both at the national and international level. These data gaps are widely acknowledged as one great impediment for evidence-based environmental policymaking (e.g., Lobdell, Jagai, Rappazzo, & Messer, 2011; UNEP/MAP, 2012a). In our post-Westphalian system of independent and sovereign nation states, the premise for global environmental sustainability rests upon domestic implementation of the IEAs adopted by the international community. Thus, data for demonstrating IEA effectiveness have to be gathered first and foremost at the domestic level, and then aggregated at the regional and global levels. A concomitant bottom-up and lateral data consolidation framework is therefore necessary to establish the required databases for global environmental conditions, functioning in a regional and global network of data sharing, data consolidation, and data harmonization (see Figure 2).

Within the domestic context, data have to be collected at the various subunits (e.g., counties, districts, etc.), and then aggregated nationally (computerized and digitized). Regional and global consolidation of the data can occur through regional organizations or IEA regional centers (e.g., Basel Regional Coordinating units, UNEP Regional Seas Programmes, etc.) and through global observation systems,

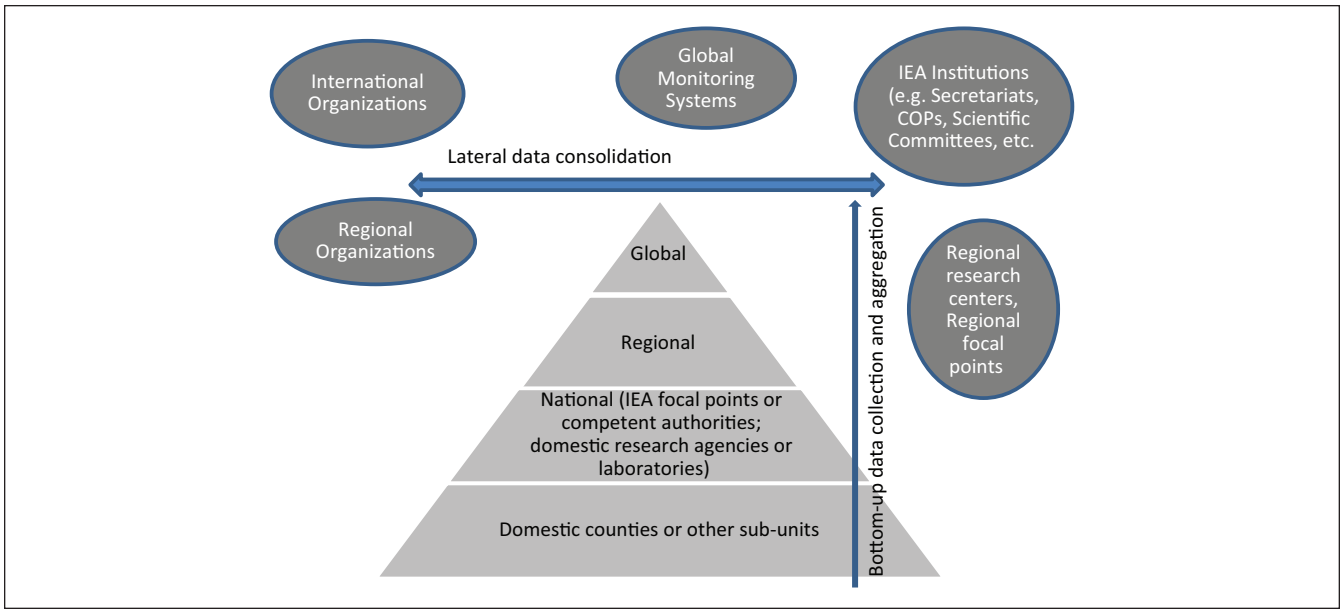

Figure 2. A bottom-up and lateral data collection and compilation framework.
Note. IEA = International Environmental Agreement; COP = Conference of Party.

international research organizations, and independent researchers, inter alia. MAP's 2012 Action Plan for the implementation of the ICZM Protocol suggests this approach, relying on local, national, and regional coordination strategies of implementation. However, for regional and global aggregation and harmonization of data to occur successfully, methodologies and reporting formats will have to be synchronized, and a Data Quality Assurance Program will have to be implemented (de Mora, 2004).

However, the key question is as follows: How do we ensure that there is the right political and institutional mechanism in place to support the bottom-up and lateral data collection and consolidation framework? A good starting point is to ensure that there is an official mandate for monitoring environmental variables of direct relevance to the operation of the IEAs. Thus, a shift in perspective is needed: Instead of viewing IEAs as a *legal* instrument of international environmental cooperation, IEAs need to be viewed from a *management* lens as well. Although it is true that the immediate focus of negotiators and treaty drafters is achieving politically acceptable and economically feasible solutions, and not how the IEAs will be administered and managed on a daily basis, this lack of management imperative nonetheless seriously erodes the implementation potential of the IEAs. Except for some recently negotiated IEAs, especially those supported financially by the Global Environment Facility (GEF) or by established institutions such as UNEP and the IUCN (e.g., the CBD, the Climate Change Convention, the Basel Convention, Ramsar Convention, and the CMS, inter alia), most of the IEAs do not focus on visioning, strategizing, or developing a management framework for the operation of the IEAs right from the entry into force of the IEA.[51] Therefore, it is important that right from the start of negotiations for the adoption of an IEA text, deliberations need to be focused not only on striking the required political compromises but also on strategic visioning and the development of an action plan for the successful implementation and evaluation of the IEAs—with clear identification of drivers and barriers to success (Wilkinson, 2011). Having such a management approach right from the start will help strengthen the official mandate for environmental monitoring and assessment, as well as ensure that the IEA institutions are strengthened to carry out their mandates. An implementation action plan thus needs to be an important outcome of international environmental negotiations.

As discussed earlier, greater performance is associated with those IEAs that benefit from strong institutions to support their implementation, as well as adequate resources (financial, technology, human capital, etc.). Hence, the action plan for each IEA needs to incorporate the architecture for institutional and technical/technological capacity building, budgeting, and human resource functions, and a general framework for implementation monitoring and effectiveness evaluation. Each IEA institution is to be provided with an adequate budget allotment, with future appropriations based on a careful analysis of expected goals and environmental targets. A human resource management function is crucial to allow for staff development, morale, recognition, clear accountability, and a sense of ownership for the success of the IEAs.

Presently, there is insufficient logistic and institutional support for data queries, lack of enabling tools for data collection

and retrieval, and absence of a networking structure for data export and import among IEA institutions and the external data repositories. First, the IEA institutions need to identify indicators that are directly relevant to the operation of the IEAs. Some notable initiatives along this line are the core indicators in the field of biodiversity and hazardous substances developed by the HELCOM CORESET project, the ecological indicators adopted by the 17th COP of MAP in 2012 (HELCOM, 2012), the indicators identified by the CBD, and the International Environmental Agreements Database Project (Mitchell, 2002-2013), which links several environmental indicators with specific treaties and then provides baseline trends on these environmental indicators.

In view of resource limitations, IEA institutions may have to prioritize both the issue areas to be dealt with as well as the indicators and then focus on assessing trends in these priority areas first, before expanding the data set. UNEP's Fifth GEO (GEO-5) has noted that for IEAs to be more successful, they need to address "goals with specific targets on a reduced number of priority issues."[52] The IEA institutions will then need to conduct an inventory of the existing data sources for the various environmental media to identify data gaps and potential for synergies based on existing data sources. A mechanism of networking and data sharing needs to be implemented to promote data consolidation among IEA institutions as well as with outside bodies (e.g., NGOs, businesses, research institutions, global observing systems, inter alia)—especially in cases where the external research organizations command greater resources for conducting scientific investigations (Stokke, 1998-1999). The IEA institutions need to compile and consolidate available data and keep their own databanks on the relevant environmental parameters linked to the IEAs falling under their responsibility. IEA institutions also need to invest in a public relations strategy, with focal points or resource persons being identified to address public queries and knowledge transfer. As noted by Malone (2003), there needs to be better "user-driven data management systems that provide seamless and rapid access to data from many different sources" (p. 302). The Data Access Centre of the Ozone Secretariat, for example, provides data on Ozone Depleting Substances (ODS) consumption and production,[53] and since 2008, the UNFCCC Secretariat has been publishing the "Compilation and Accounting (C&A) Report,"[54] which includes emissions data from various sources and for various party members. Of course, appropriate harmonization of definitions and data protocols (e.g., for sampling, collection, analysis, and interpretation, etc.) will need to be developed and shared among all the stakeholders—especially through online databases that are accessible to the public.

In cases of "true unavailability," investments in institutional strengthening, capacity development, inter-organizational networking, and strategic management can reap beneficial rewards in terms of the establishment of important databases and of reporting of data—especially for developing countries. Secretariats empowerment and the political will of the international community to invest in latest technological developments such as aerial surveillance, satellite imagery, or remote sensing can boost the success of environmental monitoring enormously. Moreover, the IEA institutions need to reduce inefficiencies and establish greater synergies with other institutions. However, calls for integration stand low chance of success if they are not accompanied by attendant institutional and administrative strengthening—as discussed above.

Greater emphasis needs to be placed on enabling successful domestic implementation of the IEAs. It is true that greater resources and attention have typically been devoted to the salient, high-profile IEAs, and the low-profile ones remain understudied and underfunded. Thus, greater attention needs to be given to those IEAs that are lagging behind—IEAs that are "sleeping" and need to be "reactivated" (van Heijnsbergen, 1997, p. 232). Inactive or weak IEAs may have to be phased out or merged into the "cluster" of IEAs dealing with similar issues, as discussed earlier. One way out of our current fragmented conundrum of international environmental governance is to have a global institution responsible for coordinating IEAs and other international environmental strategies and programs. Several researchers have supported the creation of a global environmental organization to provide authority as well as harmonization of international environmental standards (e.g., Biermann, 2001, 2002; Biermann & Bauer, 2005; Chambers, 2008; Esty, 1994; Runge, Bradford, & Drezner, 2008-2009). Haas (2004) suggested a "high commission for the environment to support norm creation." Although there have been critics of such propositions (e.g., Gehring & Oberthür, 2004; Newell, 2002), it seems clear, however, that some sort of international coordinating mechanism will have to be established to manage the integration and synergies that are being called for. A reading of the *Future We Want* gives an indication that we are perhaps moving toward such an institutional mechanism at the global level. *The Future We Want* recommends a "high-level political forum to replace the Commission on Sustainable Development," while calling for empowering UNEP to be a "leading global environmental authority that sets the global environmental agenda" (para. 84(g)(k), 88). In the immediate future, it might prove easier to empower UNEP—especially its unit on International Environmental Law. UNEP already has experience and expertise in international environmental governance and in coordinating IEAs (e.g., the Regional Seas Programme, CMS, CBD, etc.), and it will be behooving to build on this acquired wisdom to promote a stronger institutional framework for managing the IEAs such that environmental data can be consolidated to allow an accurate and timely assessment of global environmental conditions.

In one sense, the current dearth of data, statistics, and information relating to the environmental performance of IEAs is very unfortunate: It provides a wrong impression of

presumed ineffectiveness of the IEAs and belies the great efforts and successes that have been accomplished by the IEA institutions over the years, either in terms of fostering international environmental cooperation in their relevant spheres, or in adopting strategies to improve environmental conditions and assess the effectiveness of the IEAs. Even though great strides have been made in the various areas, improper data collection and reporting do not allow the observer to gauge the level of success. And as to the claims that assessing IEAs from the environmental problem solving is near to impossible due to data limitations or methodological complexities, it is a wonder that we cannot measure the state of the environment down here below when we can measure the sound of planets high above.

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Notes

1. *OBIS-SEAMAP*, Ocean Biogeographic Information System Spatial Ecological Analysis of Megavertebrate Populations, http://seamap.env.duke.edu/
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3. Article 8(2); emphasis added.
4. Correspondence from the Ramsar Bureau pursuant to survey conducted in connection with research on the effectiveness of IEAs - see Seelarbokus (2005).
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14. Article 6(1), Article 6(2)(c), Article 6(2)(e), Article 4(3), Article 4(5).
15. Please see text of the Basel Convention, available at http://www.basel.int/TheConvention/Overview/TextoftheConvention/tabid/1275/Default.aspx
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26. Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region.
27. Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean.
28. More details are provided at http://www.ramsar.org/cda/en/ramsar-documents-mous/main/ramsar/1-31-115_4000_0__
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