Following is one of the chapters from the Center for UN Reform Education's upcoming reader on Global Environmental Governance.

THE ARCHITECTURE OF GLOBAL ENVIRONMENTAL GOVERNANCE: PROS AND CONS OF MULTIPLICITY

Maria Ivanova and Jennifer Roy
January 2007

The Puzzle of Multiplicity

Environmental issues have come to exemplify most starkly the complexity and interconnectedness of the contemporary world. They have evolved over time from minor nuisances (emissions from the local factory) to serious health hazards (the smog across the industrialized world) to global concerns (transboundary air and water pollution, deforestation, fisheries depletion, biodiversity loss, and climate change). Contemporary environmental problems, therefore, require not only specialized knowledge about specific issues but also coordination and cooperation among close to two hundred countries.

In contrast to other global governance regimes such as health, trade and economic policy, the institutional architecture for the environment lacks clarity and coherence. No one organization has been able to emerge as a leader to actively champion environmental issues ensuring their integration within economic and social policies. International environmental responsibilities and activities are spread across multiple organizations, including the United Nations Environment Programme (UNEP), numerous other UN agencies, the international financing institutions, and the World Trade Organization. Adding to this tapestry are the independent secretariats and governing bodies of the numerous international environmental treaties.

At first glance, the world can be quite proud of the number of multilateral environmental agreements and institutions. In fact, the organizational proliferation in the environmental field seems encouraging and in line with the argument for mainstreaming environment into the mandates of all relevant organizations. The multiplicity of international agencies and conventions might also seem necessary as environmental issues are complex and require specific responses that could probably not be delivered by any single body. The practical result, however, has been a series of jurisdictional overlaps, gaps, and "treaty congestion" (Brown Weiss 1995) and an inability to respond to overarching environmental problems. This has led to operational and implementational inefficiencies, inconsistencies, and overload of national administrations in both developed and developing countries. In this context, the capacity of national governments and of international organizations to attain the environmental results desired has been severely weakened.

Contemporary academic and political debates have converged on the need for a strengthened, more effective, and more coherent institutional framework for global environmental governance. The political will for reform is evident in the 2005 World Summit

Outcome Document (United Nations 2005), in the report by the High-level Panel on UN System-wide Coherence (United Nations 2006, see also El-Ashry in this volume) and in the ongoing informal consultations on international environmental governance at the UN General Assembly (see Maurer in this volume). The views on the kind of reform necessary and the path forward, however, still diverge. At the core of the debate lies the question whether the architects of a reformed global environmental governance system should embrace its current multiplicity or promote greater coherence and actively stem fragmentation.

Some analysts assert that institutional multiplicity and a certain degree of overlap and duplication is necessary to ensure the optimal operation of the system (Oberthur and Gehring 2004; Najam 2003, 2002a). Others, however, have argued that institutional proliferation has become excessive and detrimental to effectiveness, efficiency, and equity in global environmental governance (Charnovitz 2005; Ivanova forthcoming; Berruga and Maurer 2006; Nowotny 2006). With little empirical work on the topic, however, the arguments on the pros and cons of multiplicity have mostly been grounded in anecdotal rather than systematic evidence. No comprehensive assessment of the activities and effectiveness of international organizations, conventions, and other institutional arrangements in the environmental arena currently exists.[1] Few systematic efforts to track mandates, actions, outcomes, and investments have been undertaken by scholars or practitioners.[2] Analysts have therefore often built their claims on assumptions, personal experiences, and normative visions, rather than on rigorous analytical and empirical research (Biermann and Bauer 2004b).

In this chapter, we set out to outline a systematic approach to understanding the pros and cons of the multiplicity of organizations[3] in global environmental governance. The basis for our analysis is a set of empirical data on the environmental activities of the forty-four international organizations members in the Environment Management Group. A preliminary result of an on-going research project, this data set provides the first step toward an analytically based assessment of multiplicity and fragmentation. Future analysis will reveal a more nuanced picture, identify areas of complementarity and conflict, and point out possible collaborative initiatives.

Organizational multiplicity in the global environmental governance system has been cited by some as reflecting a productive overlap of goals and efforts (Oberthur and Gehring 2004; Najam 2002a, 2003) and as indicative of fragmentation, conflict, and inefficiency by others (Charnovitz 2005; Esty 1994b; Esty 2000). Similarly, polarized debates have also occurred in regard with the proliferation of non-governmental organizations and American bureaucracy (Kettl 2004). Most common in such debates are concerns about institutional overlap, i.e. "a situation where the possibility of conflict between two or more organizations is present due to similar mandated functions" (Young 2001). Proponents of institutional multiplicity regard overlap as purposefully built into the system and as necessary and often beneficial to result

---

[1] A notable exception is the Global Governance Project (http://www.glogov.org) – a collaborative effort of eight European research institutions focused on the effectiveness of international institutions and organizations. The results of the research are due to be published in 2007.

[2] In 2006, the High-Level Panel on UN System-Wide Coherence initiated a review of the international environmental conventions' mandates, budgets, staff, and activities setting the stage for a larger assessment of the system.

[3] Our focus in this chapter is on international organizations only. We define international organizations as public agencies established through the cooperative efforts of two or more states that possess headquarters, legal personality, personnel, equipment, and budgets (Young 1992; Biermann and Bauer 2005b). Non-governmental organizations are beyond the scope of this analysis.

delivery. Critics, on the other hand, argue that as a result of unproductive multiplicity, focus is dissipated, efforts splintered, responsibilities scattered, funding squandered, and accountability lost.

The Pros of Multiplicity: Productive Overlap

Conventional wisdom in international politics asserts that "states use international institutions to further their own goals, and design institutions accordingly" (Koremenos, Lipson, and Snidal 2001). Fearful of infringement upon their national sovereignty, governments deliberately create weak and underfunded international organizations with overlapping and even conflicting mandates. This systemic inefficiency is assumed to stem supranational regulation in areas such as environment, human rights, or other seemingly secondary issues. Among the "rational" reasons for building multiplicity into the international environmental system therefore is the option for "forum shopping" – the opportunity for states to choose the international instrument most likely to serve their narrow self-interest (Alter and Meunier 2006; Gillespie 2002).

Alternatively, states may have designed international institutions to compete with each other within the United Nations in a spirit of "competitive multilateralism" (Wedgewood 2005). Increased competition for staff, resources, and projects is assumed to result in greater efficiency and effectiveness similar to that of private markets for goods or services. Drawing on this perspective, some analysts argue that functional and political "interplay" or interaction among similar organizations is a positive aspect of the environmental governance system (Oberthur and Gehring 2004). Interplay between organizations helps achieve their goals by pooling resources. However, organizations' goals must be mutually reinforcing for sharing and positive interplay to occur. Incompatible regulatory approaches would lead to conflict and ineffectiveness (Oberthur and Gehring 2004).

A third rationale for multiplicity is the need for redundancy in operations to prevent a systemic malfunction (Landau 1969). In this view, large organizations are "vast and complicated information systems" within which minor errors can get amplified down the chain (Landau 1969). Redundancy in a system is thus considered as beneficial since it may help detect errors while they are small. A classic example of redundancy is that of a back-up engine on a jetliner. If a redundant engine were not in place, a failure of any one engine would result in a catastrophic system failure or crash.

In this light, some environmental policy scholars liken the overlap between environmental organizations to the productive interrelationships among organisms inherent in an ecological system (Najam 2004). This "ecologic" concept centers on the idea that the nature of environmental problems makes centralization of global environmental governance a poor idea; environmental problems are not the result of a single central cause, therefore the corresponding response should not stem from a single central policymaking body (Najam 2003). In essence, this view claims that complex environmental problems require complex institutional solutions. The multiple forums offered by a fragmented governance system may reinforce each other and result in a functional system.

The Cons of Multiplicity: Conflict and Duplication

While the hypothesis that states purposefully incapacitate international organizations may be instinctively appealing, there is little direct evidence to support such a claim. For

example, the United States was an ardent supporter of an effective international mechanism for environmental protection in the 1970s resulting in the creation of UNEP and its Environment Fund. The proliferation of environmental organizations in the subsequent decades is less likely a function of US desire to incapacitate the system than of the country's ambitions to set up what it considered effective international arrangements. Moreover, the environmental mandate of the World Bank was adopted largely as a result of US pressure rather than opposition (Nielson and Tierney 2003).

Forum shopping may indeed be a strategy used by governments likely to pursue their interests. However, there is little evidence that governments are more likely to take their concerns to the least efficient rather than the most effective forum. Quite to the contrary, governments seem to be using the instruments they consider well functioning regardless of the outcome. The World Trade Organization's dispute settlement mechanism has been equally used by developed and developing countries and the WTO's decisions have been duly implemented by countries.

Competition among organizations is an appealing theoretical concept. However, when the nature of the problem centers on coordination, competition becomes not only unnecessary but harmful. When financial, human, and institutional resources for environmental activities are scarce, the right strategy is cooperation rather than competition. Competition among agencies may in fact create incentives for organizations to perform easily measured and identified functions, while avoiding more difficult and intangible, yet critical tasks (Ivanova 2005a). The agencies themselves have recognized this problem. For example, the Global Environment Facility expressed concern over the lack of coordination among implementing agencies: "a period of declining core budgets triggered considerable competition between [implementing agencies] for funds" (GEF 2002). As a result, the GEF argues, developing nations at times receive "unclear and sometimes conflicting technical reviews from different sources in the implementing agencies" (GEF 2002).

While institutional interplay may have beneficial effects in theory, in practice, it does not always result in win-win outcomes; at times interplay results in incompatible outcomes (Oberthur and Gehring 2004). Incompatibility is especially troublesome when it leads to incongruities in international law (Raustiala and Victor 2004). Legal inconsistencies may hinder the credibility and coherence of international law (Raustiala and Victor 2004; Andresen 2001). For example, the Convention on Biological Diversity calls for more stringent regulation of genetically modified organisms than the WTO, which has created confusion and conflict (Pollack and Shaffer 2005).

Redundancy may be beneficial as reinforcement but when excessive, it can overload the system. The current multiplicity of forums and policymaking bodies has burdened national administrations and led to false priorities. If they are to participate in all the necessary meetings for all international environmental agreements, national officials have to spend 350 days a year attending conferences. Treaty fatigue is especially problematic for developing nations, which often lack the financial resources or number of personnel to attend conferences. The ensuing reporting requirements of numerous treaties is also burdensome – especially when different treaties call for different reporting guidelines.

Finally, complex problems cannot be solved by complex solutions. The "ecologic" argument proves to be rather narrow and misguided when applied to organizations. In nature, the system as a whole is said to be made more resilient by each of its parts. Greater diversity in nature is supportive of unique symbiotic relationships between and among highly specialized species; for example, the Calveria tree was dependent upon seed distribution by the now-extinct

dodo bird. Today, the tree survives only due to the concerted efforts of humans to replace the dodo bird's function. On the other hand, species that are considered to be more "generalists," such as coyotes or others that exhibit tolerance for a range of habitats and situations, are most resistant to perturbation; these species are the first to proliferate in new areas. In the case of international organizations, "generalist" organizations, such as the WHO and others that have broad knowledge and skills, are most able to respond to new challenges and circumstances. The ability of an organization to adapt appears to be of greater importance than the existence of multiple layers of similar but "diverse" institutions.

Moving Forward: The Urgency of Coherence

While a formal system for environmental governance at the international level emerged in the 1970s with the creation of UNEP, environmental issues had already been part of the portfolios of a number of other UN agencies. The creation of UNEP did not remove these environmental responsibilities. Nor was it intended to. Realizing that environmental problems do not fit within the traditional boundaries of the nation state and within the expertise of any single existing organization, the founders of UNEP did not seek to create a new "super agency." Rather, as Ivanova's chapter in this volume shows, the new environmental body was conceived as a small, agile entity expected to catalyze cooperation, encourage synergy among the existing agencies, and bring together the system into a whole greater than the sum of its parts. Thus, from its very inception, coordination was at the core of UNEP's mission. Coordination, however, has been likened to the modern day's "quest for the philosopher's stone" in that it is widely sought after and seldom truly achieved (Jennings Jr. and Krane 1994).

Over the years, rather than consolidating within UNEP, international environmental responsibilities have spread across multiple organizations, including: 1) specialized agencies in the UN system such as the World Meteorological Organization, the International Maritime Organization, the UN Educational, Scientific and Cultural Organization, and others; 2) the programs in the UN system such as the UN Development Programme and the World Food Programme; 3) the UN regional economic and social commissions; 4) the Bretton Woods institutions; 5) the World Trade Organization; and 6) the environmentally focused mechanisms such as the Global Environment Facility, the Commission on Sustainable Development, and close to 500 international environmental agreements. Despite this increase in actors as well as in meetings, reports, and resources, the state of the global environment has continued to deteriorate. And as Ambassadors Enrique Berruga and Peter Maurer note, "the large number of bodies involved with environmental work has allowed specific issues to be addressed effectively and successfully, but has also increased fragmentation and resulted in uncoordinated approaches in both policy development and implementation" (Berruga and Maurer 2006). This lack of coherence in the system has "placed a heavy burden on all countries" (Berruga and Maurer 2006) as well as on international organizations and has significantly detracted from their capacity to deliver.

How incoherent, however, is the global environmental governance system? Who is active in environmental issue areas and in what way? While the multiplicity of international organizations within most environmental issue areas is an accepted fact, it does not necessarily entail overlap and/or conflict. A systematic comparison of mandates, projects and activities, budgets and outcomes could reveal whether activities in the same issue area are complementary or fragmentary.

Surprisingly, there exists no comprehensive database where one could find which organizations are active in environmental issue areas, whether it be biodiversity, climate change, or chemicals; what projects the organizations are engaged in; what resources are being invested in each area; and what the results are. In this chapter, we lay the empirical foundation for answering some of those questions for one particular set of actors – international organizations. The Environment Management Group – the forum for improved inter-agency policy collaboration and coordination in the field of the environment – comprises 44 members including intergovernmental organizations, treaty secretariats, and Bretton Woods Institutions and provides the basis for our analysis. We set out to build a coherent data set of the environmental activities of the international organizations members of the Environment Management Group and uncover areas of complementarity, duplication, or conflict.

We conceptualize environmental activities across twelve specific issue areas: agriculture, air pollution, biodiversity, chemicals, climate change, desertification, energy, fisheries, forests, invasive species, trade in endangered species, and water. While not an exhaustive list of all environmental issues, these areas exemplify the core concerns on the contemporary policy agenda. Table 1 provides the rationale for focusing on these twelve issue areas and the terms encompassed within each of them that form the basis for our empirical research.

Table I

Air Pollution	Agriculture	Biodiversity	Chemicals
Definition and significance			
Air pollution results most often from industrial processes and carries a high economic toll especially in urban settings. Air pollution exerts direct health effects, impairs many ecosystem functions directly or as a result of acid rain, and leads to losses in production and tourism.	Agriculture, the process of producing food, feed, fiber and other goods by the systematic raising of plants and animals, relies heavily on the use of natural resources. As one of the largest drivers of the global economy, agriculture is also a significant contributor to pollution, soil erosion, and climate change.	Biodiversity sustains life on earth. Biodiversity provides fundamental ecosystem services such as water purification, nutrient cycling, and climate stabilization. In addition, the protection of biodiversity and genetic resources is intricately linked to solving major diseases through new pharmaceutical discoveries.	To date, over 10,000 chemical compounds have been identified, including among them known carcinogens, immuno-toxins and hormone disrupters. Human-made chemical compounds have been found in even the most remote areas of every continent. Some chemicals bio-accumulate poisoning not only humans but other higher level organisms, as in the case of birds and DDT.
Encompassed terms and concepts			
Air quality Ozone Indoor air pollution Traffic emissions Smog	Farming Aquaculture, Livestock Food security Agroecosystems Grazing Genetically modified crops Agrarian Rural poverty	Fauna Genetic resources "conserve species" "ecosystem management" Biosafety GMO's Coral	Industrial accidents Pesticides Hazardous waste POPs

Climate change	Desertification	Energy	Fisheries
Climate change is defined by the UNFCCC as any change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time period. Climate change is one of the most salient issues on the global agenda, cross-cutting nearly every environmental concern.	Desertification occurs most often as a result of human activity and climate change. The loss of productive topsoil associated with desertification reduces biomass productivity and arable land. For example, desertification removes 12 million hectares of land from production each year which could have been used to produce 20 million tons of grain (MA 2005a).	Energy encompasses both production and conservation measures. Energy programs receive enormous subsidies from national governments around the world. The search for alternative energy sources is also increasing. The extraction and consumption of energy resources such as coal and oil contribute to air and water pollution as well as increased greenhouse gas concentrations and subsequently climate change.	Fisheries, especially ocean fisheries, have been in rapid decline as a result of rapid technological improvements in fishing fleets. About half of the wild marine fish stocks for which information is available are fully exploited and offer no scope for increased catches. Like agriculture, fisheries provide enormous impetus to the global economy. Fisheries provide a key source of protein for millions of people around the world, many in developing nations.
Global warming Monitoring atmosphere Greenhouse gases Emission trading CDM, Weather,Meteorology Climate prediction	Drought Land degradation Drylands, Soil conservation Grasslands Land resources Land management	Energy production Hydraulic power Alternative energy Nuclear Energy conservation Clean fuels	Marine resources Fishery subsidies

Forests	Invasive Species	Trade in Endangered Species	Water
Forests are classified by the level of canopy cover in an area, and any reduction of canopy cover is considered to be deforestation or degradation. Forests present an important carbon sink for greenhouse gases but are cleared at increasing rates around the world, especially so in tropical regions. Currently, there exists no international environmental organization or convention focused on forests but a large number of NGOs work exclusively in this field.	Invasive species have become an increased threat that represents the "globalization of nature" (MA 2005b). For example, waters in North America are heavily invaded by mollusks transported in ship ballast water tanks in a pattern corresponding to trade routes. The Great Lakes have suffered from the introduction of the zebra mussel native to the Black Sea. Similarly, the American comb jellyfish in the Black Sea has led to the destruction of 26 fish stocks.	Trade in endangered species encompasses the illicit dealing of protected plant and animal specimens. The international illegal trade in wildlife and wildlife products such as ivory endangers the species, which are often already threatened. Such trade also poses a security risk: transnational criminal organizations engaged in the trade of endangered species have been found to also engage in arms, narcotics and human trafficking (Lin 2005).	Water, the most vital natural resource to human survival, is in short supply in many parts of the world. Globally, from 5 to 25% of freshwater use exceeds long-term accessible supplies and is now met either through engineered water transfers or overdraft of groundwater supplies. Water scarcity poses both a health and a security risk to numerous nations and regions as conflicts arise over water use.
Timber Trees Deforestation Reforestation	Invasive species Alien species	International wildlife trade Exploitation of species Import, export, re-export	Water management Water resources Water conservation Water and sanitation Freshwater, Eutrophication, Dumping, Oil spills/pollution

The institutional landscape within the twelve issue areas is indeed complicated. Among the 44 organizations in the Environment Management Group, 26 are active in climate change, 29 in chemicals, and 31 in water. The situation in the other issue areas is similar as illustrated in Table 2. (Black dots denote an organization's primary involvement in an issue area and white dots denote a secondary involvement.) Moreover, organizations working on related issues are often spread across the globe, hampering inter-organizational communication and coordination. For example, in the water regime alone, Nairobi-based UNEP, Paris-based UNESCO, London-based WMO and the GEF in Washington (along with more than 20 other institutions) conduct similar activities. In addition, organizations working within the same environmental issue area may have dissimilar objectives or views. For example, in the chemicals regime, the WHO is most likely to be concerned with how chemicals affect human health, the OECD interested in development and coordination of environment health and safety activities among its member countries, the ILO in protecting the rights of workers who interact with chemicals while the IMO in preventing chemical waste from entering in the ocean and UNITAR in helping developing nations reduce the use of persistent organic pollutants.

Table 2: International Organizations and Treaty Secretariats Primary and Secondary Environmental Focus

Organization \ Issue	Agriculture	Air Pollution	Biodiversity	Chemicals	Climate Change	Desertification	Energy	Fisheries	Forests	Invasive Species	Trade in Endangered Species	Water
CBD	●		●		○	●		●	●	○		●
CITES											●	
CMS			●									
ECA	●	○	●		○	●	●	●	●			●
ECE		●	●	●			●	○				●
ECLAC		●	●				●					●
ESCAP	●	●	●	●	●	●	●					●
ESCWA	●	●	●		●	○	●	●	●			●
FAO	●	○	●	○	○	○	○	●	●	○		●
GEF			●	●	●	●	○					●
GISP										●		
IAEA				●			●					
ICAO		●			●							
IEA					●		●					

Organization \ Issue	Agriculture	Air Pollution	Biodiversity	Chemicals	Climate Change	Desertification	Energy	Fisheries	Forests	Invasive Species	Trade in Endangered Species	Water
IFAD	●			●		●						
ILO	○	●		●					○			
Interpol											●	
IMO	○	○	○	●				○		○		●
IPCC		○	○	○	●	○	○		○			○
ISDR					●	●						
ITC	●											
ITLOS								●				●
ITTO			○						●			
ITU	●				○	○						●
IUCN	●	○	●	○	●	●	○	●	●	○	●	●
IWC								●				
OECD	●	○	●	●	●		●	●	○			○
OCHA	●	○		●	○	○						●
OHCHR		●		●								
Ramsar			●									●
SBC				●								
SSO	○				○	●						●
UNCCD	○					●						
UNCTAD	●			●	●							
UNDESA/DSD	●	●	●	●	●	●	●	●				●
UNDP	●		●	●	●	●	●					●
UNEP	●	●	●	●	○	●	○	●	●	●	○	●
UNESCO			○		●	○						●
UNFCCC					●		○					
UNFF	○	○							●			
UNFPA												●
UNHABITAT		●		●								●
UNHCR				●					●			

Organization \ Issue	Agriculture	Air Pollution	Biodiversity	Chemicals	Climate Change	Desertification	Energy	Fisheries	Forests	Invasive Species	Trade in Endangered Species	Water
UNICEF				●								●
UNIDO				●								
UNITAR				●	●							
UNU	●	●	●	●	●	●	●	●	●	○	●	●
UPU				●			●					
WFP	●			○			○					○
WHO		●		●	●							●
WIPO			●									
WMO		●		●	●							●
World Bank	●	●	●	●	●	●	●	●	●	○		●
WTO-Trade	●		●				○	○				
WTO-Tourism	●		●	●								○
WWC								●				●

While this analysis provides solid evidence for the multiplicity in international environmental governance, it does not necessarily show complementarity, duplication, or conflict. International organizations may be active in the same issue area but engage in different activities – analytical, normative or operational. *Analytical* activities involve research, monitoring, assessment, and analysis. The information produced as a result can serve to formulate various policy options. *Normative* activities build on the analytics to produce new norms, rules, standards, guidelines, and policies. They may result in the adoption of hard or soft law at the national and international levels. *Operational* activities are visible and tangible, "on the ground" actions. They involve carrying out plans, implementing projects or providing services in specific localities. Working with publicly available information through the organizations' websites, we were limited in our ability to extend the research to identifying patterns within these three core areas of activity. What this empirical research has highlighted, however, is the need for a systematic effort of mapping out the activities, investments, and results of key actors in global environmental governance in analytical, normative, and operational work.

Multiplicity and even duplication of analytical activities may be necessary and desirable. If several organizations observe the same environmental trends and produce similar or varying conclusions, the final result will be a more robust informational basis, a clearer understanding, and an analytically rigorous process. A key condition for this synergy to occur, however, is the

existence of an information-sharing mechanism – whether it be a national agency or an international clearinghouse.

Multiplicity in normative activities poses a greater challenge. While some duplication of activities may lead to the development of more options for rules, norms, and policies, there is a clear danger for producing conflicting guidance and policies by different organizations. For example, if rules for trade in endangered species are developed by the WTO, CITES (the Convention on International Trade in Endangered Species), the World Conservation Union (IUCN), and by Interpol (see Table 2 for the organizations active in this issue area), the final result is likely to be different – informed primarily by economics, conservation and the potential enforceability of the rules.

In operational activities, multiplicity can be particularly damaging if various agencies repeat the same work. The result is usually a dangerous overload of national capacity and fragmented policy at all levels. The operational aspect of architectural fragmentation has been researched in the health field.[4] Dozens of actors – international organizations, donors, NGOs, and private foundations – have launched country programs to deal with HIV/AIDS, malaria, tuberculosis, and other diseases. As Cohen (2006 : 166) observes, "The overall effect is a comical mess but the problem is anything but. 'We were stepping on each other's toes, and in some countries it was destructive,' says Debrework Zewdie [of Tanzania], who heads MAP [Monitoring the AIDS Pandemic Network] and also sits on the board of the Global Fund. 'Imagine the amount of time that countries spend catering to the different donors rather than fighting epidemics.'" The potential solution offered by UNAIDS was "the three ones" principle, which calls on each country to have one HIV/AIDS budget, one national AIDS coordinating committee, and one national monitoring and evaluation system that can report the same data to each donor (Cohen 2006: 166).

Recent reform analyses within the UN system reflect a similar need for coherence and cooperation in the environmental field. The November 2006 report of the High-level Panel on UN System-wide Coherence, *Delivering as One*, calls for a strengthened and more coherent international environmental governance system by consolidating or eliminating duplicative agencies in an effort to clearly assign organizational responsibility, reduce duplication of efforts, and reduce burdens on participants. In addition, the Panel recommended the enumeration of common, targeted goals and targeted actions within the system along with newfound cooperation on a thematic basis to harness and create synergy (United Nations 2006).

Conclusion: Next Steps

There is clearly a disconnect between the magnitude of environmental problems on the one hand and the ability of contemporary institutions to effectively address them on the other. For all the rhetoric, agreements, and promises of action over the past 30 years, actual institutions, processes, and resources have fallen short of addressing the problems for which they were established (Speth 2003, 2004). To be fair, environmental problems are difficult to tackle because they are hard to see, spread over space, stretched out in time, with diffused costs and concentrated benefits. National sovereignty in the face of global environmental problems has also proven a difficult obstacle to effective solutions as governments have been driven to act on the basis of narrowly defined self-interest rather than the common good. In addition, too

---

[4] For example, UNAIDS launched a process analyzing the "institutional architecture" that connects the various stakeholders in the HIV/AIDS regime (Cohen 2006).

often, international environmental organizations are underfunded or otherwise incapacitated. Moreover, disjointed priorities within national governments have led to conflicting viewpoints in different international forums.

Nevertheless, the lack of coherence and coordination of organizational priorities, activities, and investments at the international level only exacerbates the problem. A key finding of the empirical analysis we undertook is that even though a certain division of labor among international organizations may exist, considerable overlap and duplication of activities likely persists. For example, while the Convention on Biological Diversity has set up an information clearinghouse for biodiversity information, there are still no standards and common methodologies for assessment, monitoring, and reporting on biodiversity. Each international organization is responsible for ensuring that their biodiversity projects are effective and little coordination of activities and criteria exists. Without a comprehensive and accurate map of the roles, responsibilities, and resources of international institutions in the field of environment, it will be difficult to identify gaps and the means to bridge them.

In the Outcome Document of the 2005 World Summit, governments agreed to "explore the possibility of a more coherent institutional framework [for the environment], including a more integrated structure, building on existing institutions." Any reform of global environmental governance, however, needs to be based on a holistic assessment of the strengths and weaknesses in the current system. To this end, a *comprehensive assessment of the global environmental governance system* should be initiated. It would help clarify and understand the roles, responsibilities, and resources of three core groups of actors in global environmental governance: international environmental organizations and conventions, development banks and organizations, and other UN agencies and large NGOs. Only with such an understanding can the competing propositions that fragmentation is a sign of duplication or complementarity be tested. The assessment would reveal institutions' comparative advantages, highlight the current division of labor, and enable the development of reform proposals grounded in fact rather than fable.

Acronyms

Acronym	Name
CBD	Convention on Biological Diversity
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMS	Convention on Migratory Species
ECA	UN Economic and Social Commission for Africa
ECE	UN Economic Commission for Europe
ECLAC	UN Economic and Social Commission for Latin America and the Caribbean
ESCAP	UN Economic and Social Commission for Asia and the Pacific
ESCWA	UN Economic and Social Commission for West Asia
FAO	Food and Agriculture Organization
GEF	Global Environment Facility
GISP	Global Invasive Species Programme
IAEA	International Atomic Energy Agency
ICAO	International Civil Aviation Organization
IEA	International Energy Agency
IFAD	International Fund for Agricultural Development
ILO	International Labour Organization
IMO	International Maritime Organization
IPCC	International Panel on Climate Change
ISDR	International Strategy for Disaster Reduction
ITC	International Trade Centre
ITLOS	International Tribunal for the Law of the Sea
ITTO	International Tropical Timber Organization
ITU	International Telecommunications Union
IUCN	World Conservation Union
IWC	International Whaling Commission
OECD	Organization for Economic Cooperation and Development
OCHA	Office for the Coordination of Humanitarian Affairs
OHCHR	Office of the High Commissioner for Human Rights
SBC	Secretariat of the Basel Convention
SSO	Sahara Sahel Observatory
UNCCD	UN Convention to Combat Desertification
UNCTAD	UN Conference on Trade and Development
UNDESA/DSD	United Nations Department of Economic and Social Affairs Division of Sustainable Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNFCCC	UN Framework Convention on Climate Change
UNFF	UN Forum on Forests
UNFPA	United Nations Population Fund
UN-HABITAT	UN Human Settlements Programme
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
UNITAR	United Nations Institute for Training and Research
UNU	United Nations University
UPU	Universal Postal Union
WFP	World Food Programme
WHO	World Health Organization
WIPO	World Intellectual Property Organization
WMO	World Meteorological Organization
WTO	World Tourism Organization
WTO	World Trade Organization

References

Alter, Karen J., and Sophie Meunier. 2006. Banana Splits: Nested and Competing Regimes in the Transatlantic Banana Trade Dispute. *Journal of European Public Policy* 13 (3):362-382.

Andresen, Steinar. 2001. Global Environmental Governance: UN Fragmentation and Co-ordination. In *Yearbook of International Co-operation on Environment and Development*, edited by O. S. Stokke and O. B. Thommessen. London: Earthscan Publications.

Berruga, Enrique, and Peter Maurer. 2006. Co-Chairmen's Summary of the Informal Consultative Process on the Institutional Framework for the UN's Environmental Activities. New York.

Biermann, Frank, and Steffen Bauer. 2004b. Does Effective International Environmental Governance Require a World Environment Organization? The State of the Debate Prior to the Report of the High-Level Panel on Reforming the United Nations. In *Global Governance Working Paper Nr. 13*. Amsterdam, Berlin, Oldenburg, Potsdam: The Global Governance Project.

———. 2005b. *A World Environment Organization: Solution or Threat for Effective International Environmental Governance?* Aldershot, UK: Ashgate.

Brown Weiss, Edith. 1995. International Environmental Law: Contemporary Issues and the Emergence of a New World Order. *Georgetown Law Journal* 81 (1):675-693.

Charnovitz, Steve. 2005. Toward a World Environment Organization: Reflections upon a Vital Debate. In *A World Environment Organization*, edited by F. Biermann and S. Bauer. Aldershot: Ashgate.

Cohen, Jon. 2006. A New World of Global Public Health. *Science* 311:162-167.

Esty, Daniel. 2000. International Governance at the Global Level: The Value of Creating a Global Environmental Organization. *Environment Matters* Annual Review 1999-2000:12-15.

Esty, Daniel C. 1994b. The Case for a Global Environmental Organization. In *Managing the World Economy: Fifty Years After Bretton Woods*, edited by P. Kenen. Washington, D.C.: Institute for International Economics.

GEF. 2002. Focusing on the environment: the first decade of the GEF. In *Second Overall Performance Study*: Global Environment Facility.

Gillespie, A. 2002. Forum Shopping in International Environmental Law: The IWC, CITES, and the Management of Cetaceans. *Ocean Development and International Law* 33 (1):17-56.

Ivanova, Maria. 2005a. Can the Anchor Hold? Rethinking the United Nations Environment Programme for the 21st Century. New Haven, CT: Yale School of Forestry & Environmental Studies

———. forthcoming. Responsibility to Protect: the Foundations of Global Environmental Governance. In *Reinventing the United Nations*, edited by A. Banerjee and K. Sharma. Upper Saddle River, NJ: Prentice Hall.

Jennings Jr., Edward T, and Dale Krane. 1994. Coordination and Welfar Reform: The Quest for the Philosopher's Stone. *Public Administration Review* 54.

Kettl, Donald F. 2004. *System Under Stress: Homeland Security and American Politics*. Washington, DC: CQ Press.

Koremenos, B., C. Lipson, and D. Snidal. 2001. The Rational Design of International Institutions. *International Organization* 55 (4):761.

Landau, Martin. 1969. Redundancy, Duplication and the Problem of Duplication and Overlap. *Public Administration Review* 29:346-358.

Najam, Adil. 2002a. The Case Against GEO, WEO, or Whatever-else-EO. In *Global Environmental Institutions: Perspectives on Reform*, edited by D. Brack and J. Hyvarinen. London: Royal Institute of International Affairs.

———. 2003. The Case Against a New International Environmental Organization. *Global Governance* 9 (3):367-384.

Nielson, Daniel L., and Michael J. Tierney. 2003. Delegation to International Organizations: Agency Theory and World Bank Environmental Reform. *International Organization* 57:241-276.

Nowotny, Eva. 2006. Opening Statement of Ambassador Eva Nowotny at UNEO Seminar, 29 June 2006, at Georgetown University.

Oberthur, Sebastian, and Thomas Gehring. 2004. Reforming international environmental governance: an institutionalist critique of the proposal for a World Environment Organisation. *International Environmental Agreements* 4 (4):359-381.

Pollack, Mark, and Gregory C. Shaffer. 2005. Distributive Conflicts, Regime Complexes and the International Regulation of Genetically Modified Organisms. In *Workshop on Nested and Overlapping Regimes*. Princeton University.

Raustiala, Kal, and David G. Victor. 2004. The Regime Complex for Plant Genetic Resources. *International Organization* 58:277-309.

United Nations. 2005. 2005 World Summit Outcome. http://daccessdds.un.org/doc/UNDOC/GEN/N05/487/60/PDF/N0548760.pdf?OpenElement.

———. 2006. Delivering as One: Report of the Secretary General's High Level Panel on System-Wide Coherence.

Wedgewood, Ruth. 2005. Give the United Nations a Little Competition. *The New York Times*, 5 December 2005.

Young, Oran. 1992. Global Environmental Change and International Governance. In *Global Environmental Change and International Relations*, edited by I. H. R. a. M. Greene. Basingstoke: Macmillan.

———. 2001. Political Leadership and Regime Formation: On the Development of Institutions in International Society. *International Organization* 45:281-308.

Biographical Information

Dr. Maria Ivanova is Assistant Professor of Government and Environmental Policy at The College of William and Mary and the Director of the Global Environmental Governance Project at the Yale Center for Environmental Law and Policy. Her research focuses on international institutions and organizations, environmental policy at the national and global levels, and global governance. Her recent work analyzes the development and performance of the international environmental architecture with a focus on the United Nations Environment Programme (UNEP) and international organizations with environmental portfolios. A Bulgarian national, Dr. Ivanova holds graduate degrees in international relations and environmental policy from Yale University. She has worked at the Environment Directorate of the Organisation for Economic Cooperation and Development (OECD) in Paris and at the Swedish Environmental Protection Agency in Stockholm on water quality standards and environmental regulatory reform in Russia. She is the co-editor of "Global Environmental Governance: Options & Opportunities" (with Daniel Esty) and author and co-author of articles and chapters on governance, globalization, and the environment. Ivanova teaches undergraduate, graduate, and professional courses in Global Environmental Governance, International Organizations, Climate Change, and Environmental Diplomacy.

Jennifer Roy is a research assistant for the Global Environmental Governance Project and a student at the College of William and Mary. In the course of her studies in public policy and environmental management, Jennifer has analyzed a wide range of topics, including the effectiveness of the UN Convention to Combat Desertification, the global challenge of fisheries depletion, and institutional multiplicity in international environmental governance. Through her work with the GEG Project, Jennifer has participated in the 12th Conference of the Parties of the UN Framework Convention on Climate Change in Nairobi in 2006 and followed the informal consultations on international environmental governance at the UN General Assembly in January 2007. She plans to continue her research on how to improve the effectiveness of international environmental and development organizations through graduate work. Jennifer also works with the Student Mentor Program at William and Mary and is a staff member of The Monitor, a student-run international relations journal.