It is now almost twenty years since the 1992 United Nations Conference on Environment and Development endorsed environmentally sound management of toxic substances and prioritized waste reduction. But progress has been slow. After two decades of international environmental lawmaking, there are now numerous international agreements on chemicals, industrial wastes, persistent organic pollutants, and agricultural pesticides, but there is little coordination between international instruments and there are gaps and inconsistencies in regulation. Clearly, the release of toxic substances into the environment may have adverse effects on human and animal health. Further, pollutants that originate in the industrial areas of the United States and Europe may drift northwards and cause permanent damage to the marine life and biodiversity of the fragile Arctic regions. Many developing countries have continued to use toxic pesticides and other hazardous chemicals long after such substances were restricted or banned in the United States and Europe, and many nations, both developed and developing, continue to trade in hazardous wastes. There is a clear relationship between human health and economic prosperity. Analysis of international law suggests that more could be done to reduce this form of pollution and thus strengthen the economy.

**Background**

Many lawyers agree that international environmental law is simply the application of international law to environmental issues. Indeed, one leading English scholar did not use the term “international environmental law” and suggested instead that international law in the area of environmental protection is simply one aspect of mainstream international law, from which it derives its general rules, principles and norms. Irrespective of terminology, it is clear that international law informs the development of national and international laws designed to protect the environment and provides the broader context in which that law is located. Further, it is clear that the resolution of international legal problems, however categorized, requires the application of international law as a whole, in an integrated manner. This is particularly relevant to hazardous chemicals and toxic wastes, because regulation of those substances straddles several areas of international law. But one of the most problematic issues in the international debate on transboundary pollution is the legal principle of sovereignty over natural resources, on the basis of which some nations assert that they have an absolute right to use their own resources to further their economic development, despite consequential environmental degradation caused to neighboring states. Other aspects of international law that are relevant to chemicals, pesticides, and hazardous wastes, particularly in economically impoverished areas that may be dependent on a single industry, include the legal concepts of common heritage, common concern, and the protection of human rights. There is some overlap too between international environmental law and sustainable development, but the goals of each differ; sustainable development encompasses economic development and international environment regulation, whereas the primary focus of international environmental law is environmental protection. This is important because international law on toxic substances developed within the context of international environmental law but has now outgrown its ori-
gins and spans the laws of intellectual property, international trade, and human rights. The challenge now is to find a way of regulating the creation, use, storage, and disposal of highly toxic substances which balances the need for economic development with legitimate concerns for human health and environmental protection.

History
Before the 1940s, international law on hazardous wastes and toxic substances was not well developed and it was not until the 1960s that environmental protection became a significant feature of national and international legal and political agendas.

As tort lawyers know, the unlawful use of highly toxic substances has caused extensive and irreparable damage in some of the most vulnerable communities ...

In the late nineteenth century, a few international environmental agreements were created. Generally, these were premised on unrestrained national sovereignty over natural resources. The agreements’ focus was boundary waters, navigation, and fishing rights — not the regulation of newly emerging industries. In the late nineteenth and early twentieth centuries, two environmental disputes were submitted to international arbitration. These were the 1893 Behring Sea Fur Seal Fisheries Arbitration (Great Britain v. U.S.) and the 1941 Trail Smelter Arbitration (U.S. v. Canada). These are relevant because they subsequently became important sources of modern international environmental law and a basis of agreements on pollution. The 1893 Behring Sea Fur Seal Fisheries Arbitration resolved a dispute between the United States and the United Kingdom over the right of states to adopt regulations to conserve fur seals in areas beyond national jurisdiction. The United States argued that states had the right to assert jurisdiction over natural resources outside their jurisdiction to ensure the resources’ conservation and that it was acting as trustee “for the benefit of mankind and should be permitted to discharge their trust without hindrance.” That tribunal rejected that argument, accepted the United Kingdom’s argument that the United States’ position was “shorn of all support of international law and of justification from the usage of nations” and was “based solely on a claim of property.” The tribunal established regulations for the protection and preservation of fur seals outside jurisdictional limits. The tribunal’s award shaped the form and content of subsequent international agreements and provided an early insight into the role that international law could play in resolving environmental disputes.

The 1941 Trail Smelter Arbitration arose from a dispute between the United States and Canada about the emission of sulphur fumes from a smelter located in Canada that caused damage in the state of Washington. Relying on a more general principle of international law set out in the Corfu Channel case, the tribunal held that “under the principles of international law … no state has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or to the properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence.” The finding of the tribunal on the state of international law on air pollution in the 1930s has come to represent “a crystallising moment for international environmental law which has influenced subsequent developments in a manner which undoubtedly exceeds its true value as an authoritative legal determination.” Notwithstanding this, these two international arbitrations, the early environmental treaties, and the establishment of the United Nations in 1945 provided the foundation for the development of law and international organizations relating to the environment in the second half of the twentieth century.

In the 1930s and 1940s, treaties relating to natural resources were established. By the 1950s, liability for nuclear damage and oil-based marine pollution reached the international agenda. These agreements did not, however, create institutional arrangements for administering international commitments, ensuring implementation or monitoring compliance. And treaties were not premised philosophically on broader notions of environmental protection, since those notions had not yet been popularized.

From about 1960 onwards, there was a growth of public consciousness about the environment. Environmental issues gained legitimacy and political currency to the extent that the regulation of hazardous waste and toxic substances became part of mainstream international law. At about the same time, decolonization spread rapidly in Africa and Asia, and unprecedented economic development propelled many
developing countries towards industrialization and urbanization. This led to the development of a body of law, national and international, related to the environment. Initially, those laws were designed to remedy environmental problems after damage had been caused. By the early 1970s, a preventative approach to environmental management had developed.

In 1972, the UN Conference on the Human Environment was held in Stockholm. In the years that followed, international environmental agreements proliferated, environmental issues were added to the mandates of existing international organizations and new international organizations for the environment were established. In 1992, the UN Conference on Environment and Development met at Rio de Janeiro. It created further international environmental agreements, but implementation of many of those international environmental obligations was limited by absence of political will, lack of resources and poorly drafted and inconsistent laws. Ten years later, the 2002 World Summit on Sustainable Development in Johannesburg was designed to monitor the progress of the Rio agreements, but its agenda was overshadowed by the attacks of September 11, 2001, and the urgent need to discuss critical issues of security, terrorism, and arms control. By 2010, it had become apparent that there were numerous international agreements on hazardous substances and toxic waste, but implementation was fragmented and, in many regions of the world, very limited indeed. The time was ripe for further international action.

**Mercury**

Mercury, a highly toxic substance often found in industrial wastes and atmospheric pollution, has been on the international legal agenda since 2001, at which time the Arctic Council noted the harmful effects the release of mercury was having on the fragile Arctic ecosystem. As tort lawyers know, the unlawful use of highly toxic substances has caused extensive and irreparable damage in some of the most vulnerable communities within the United States and globally, and there is an urgent need to identify and close legal loopholes at an international level and to outlaw the dumping of highly toxic substances — the use of which has long been highly regulated in the United States — in economically vulnerable and legally unsophisticated nations.

A series of UN Environment Programme (UNEP) resolutions in 2003, 2005, and 2007 led to the creation of the Mercury Program by the UNEP Chemicals Branch. That branch seeks to protect humans and the environment from adverse effects caused by hazardous wastes and toxic chemicals by promoting environmentally sound management of those substances. It works directly with countries to develop national capacity for the clean production, use, and disposal of chemicals and promotes and disseminates information on chemical safety. After several years of negotiation, at its twenty-fifth session in 2009 the governing council of UNEP resolved to create a legally binding instrument on mercury, with work commencing in 2010.\(^22\)

Preparatory work is now underway, but drafting will be a complex task as the economic interests of several key industries (including aviation, cement, coal-fired power plants, nonferrous metals, road transportation, and waste incineration) will have to be balanced against international environmental norms. As part of this preparatory work, UNEP has established the UNEP Global Mercury Partnership. This is a voluntary initiative in which governments, including that of the United States, and nongovernment, public, and private entities have agreed to work together in a systemic manner in order to protect human health and the global environment from the release of mercury and its compounds by minimizing and, where feasible, eliminating global anthropogenic releases to air, water, and land. With five partnership areas (coal, waste, artisanal and small-scale gold, air transport, and mercury-containing products), the Global Partnership aims to deliver immediate action on mercury. Many U.S. and European industries use best-available technology and have made tremendous progress in reducing their environmental impacts. Elsewhere in the world, however, there are industries that continue to release high concentrations of toxic substances into the atmosphere and that assert that they have little choice but do so unless newer technology is made available to them at little or no cost. In the short term, such cross-border subsidization could reduce the competitiveness of U.S. and European industry, so the subsidized transfer of technology is not generally considered feasible in the current economic climate.

For international lawyers, the situation is complex as a number of other binding agreements already deal with one or more aspects of mercury use, release, and disposal. The 1989 Basel Convention on the Control and Movement of Transboundary Wastes and Their Disposal, for example, operative since 1992, aims to protect...
human health from adverse effects resulting from transportation across borders of hazardous wastes. With 175 parties, the Basel Convention is one of the most widely ratified international environmental agreements, but it has been widely criticized for its focus on the transportation, instead of minimization, of hazardous waste.

Another international agreement relevant to mercury is the 1998 Rotterdam Convention on Persistent Organic Pollutants. It aims to protect human health and the environment from adverse effects resulting from long periods of time and that may accumulate in the fatty tissue of humans and wildlife. These chemicals can create a serious hazard to human and animal health, so the convention requires parties to take measures to eliminate or reduce their release into the environment.

Principles of Treaty Drafting

Given the existence of several international agreements on certain aspects of mercury, the creation of a new and comprehensive international instrument on all aspects of mercury will challenge lawyers. Those drafting the new treaty would do well to remember four basic points.

First, it is important to avoid international agreements that overreach. In international environmental law, overreaching tends to occur in three areas: provisions may exceed capacity for implementation, provisions may exceed what is necessary to achieve reasonable and legitimate objectives, and provisions may exceed what is socially acceptable. The balance of these three elements will be different in each country in which the international agreement is implemented, so a broad framework agreement that provides for local variation for mercury may be more appropriate than an agreement with specific obligations. Agreements that overreach are not inherently flawed, since they have an aspirational value. But the experience of a range of international environmental agreements in areas such as energy, water, biodiversity, and land use confirm that aspirational agreements are almost impossible to implement. Since ineffective implementation is likely to squander scarce resources and may also cast doubt on the legitimacy of a new mercury agreement, it may be better to draft a more restricted agreement that can be implemented effectively, rather than an aspirational agreement that may be ignored.

Second, unnecessary, superfluous, or cumbersome licensing and approval requirements are to be avoided. Common law developed on the basis that all actions are lawful unless explicitly prohibited. But some chemical and pesticide legislation is premised on the reverse assumption; i.e., approval is required for very ordinary activities, notwithstanding that the policy rationale for imposing this requirement is dubious. These requirements increase bureaucracy and provide opportunities for corruption, particularly in countries in which government lacks capacity to implement the procedures stipulated in chemical legislation. Consequently, even those inclined to comply may find numerous obstacles to prevent them from doing so. The burden of enforcing unnecessary legislation may also reduce the capacity of government to enforce more important legislation. Chemical legislation that imposes licensing and approval procedures is not inherently flawed, but it may serve no discernible policy objectives and may add an unnecessary layer of bureaucracy. From these challenges may develop an entire professional subspecialty, the sole purpose of which is the design, development, and enforcement of unnecessary legislation. This is likely to lead to another layer of administrative activity, the sole purpose of which is the review or appeal of decisions under that legislation. For leg-
The burden of enforcing unnecessary legislation may also reduce the capacity of government to enforce more important legislation.

This is particularly important in situations in which ownership or use of industrial resources may be in dispute, since access to an independent decision maker, such as a court or an arbitrator, may be the first step in securing sustainable economic development. It follows that a corrupt legal system can undermine even the smallest chemical project. It can also reduce foreign investment in large projects since foreign investors are unlikely to invest in countries in which enforcement of contracts or more general regulation is unpredictable or impossible.
enforcement, but if chemical law has not been effectively enforced in the past, it may be appropriate to emphasize that new laws will be enforced and to ensure that they are drafted in a manner that makes them enforceable.

**Treaty Enforcement**

Effective law enforcement is premised on the existence of stable legal and political institutions and on the rule of law. Legislation alone will not prevent misuse of toxic substances, but if properly used, law is an important tool in the fight. A comprehensive solution will require technological innovation, improved surveillance techniques, financial resources, societal change, and above all, political will at national and international levels. If law, either national or international, is to provide a realistic foundation for its own implementation, it must provide for consultative or participatory approaches, it must facilitate transparency and accountability, and it must establish processes and requirements that are feasible and achievable. At both a national and an international level, the principles set out above are likely to be important in the management of mercury and other highly toxic substances.

The Westphalian legal order, based on independent, sovereign and territorially defined states, allowed each state to pursue its own interests within its sovereign territory and gave each state equality within the global system. International law emerged as “the body of rules and principles of action which are binding upon civilised states in their relations with one another.” That classical view of international law distinguished clearly between international and domestic law and between public and private international law. Public international law — the domain of sovereign states — provided a body of customary law and series of binding instruments, the purpose of which was to govern relationships between states. The framework was “stylized, hierarchical and static.” It assumed that states agree to international treaties when those treaties correspond with state interests, and that, having agreed to a treaty, states comply with that treaty by implementing it within their sovereign territory. If a state fails to comply, mechanisms for the resolution of international disputes are available and sanctions will deter and punish offenders.

Our world is more complex. States continued to be the primary actors, but other parties had begun to contribute to the development, interpretation, and implementation of international law. The distinction between public and private international law had blurred and voluntary or non-binding international instruments have emerged. Patterns of compliance with international treaties have changed and the private sector has developed initiatives such as chemical certification schemes. Now, states often agree to treaties to be seen to be exercising leadership, because other states are doing so, because states with leverage are encouraging them to do so, or because failure to do so would result in political or economic isolation. Some states agree to treaties knowing that they lack the capacity to comply with those treaties, while others have capacity but do not intend to comply.

In today’s world, the international legal environment is dynamic, not static. Compliance may adhere to a horizontal, not vertical, model. Parties interact in complex ways over time, resulting in the rapid formation and destruction of state- and nonstate-based alliances. We must forge new alliances and legislate in new ways while upholding the best traditions of American lawmakers. Only when we understand this will we understand just how best to make treaties, such as the new international instrument on mercury, that secure and protect our interdependent world.

Endnotes:

1. UNCED, at which 178 countries were represented, met at Rio de Janeiro, Brazil, in June 1992. The agreements concluded at the conference are the Rio Declaration on Environment and Development, Agenda 21, the Convention on Biological Diversity, the United Nations Framework Convention on Climate Change and the Non-Legally Binding Forest Principles.


4. For the concept of common heritage see, for example, Birnie, Boyle and Redgwell, 128-30.


1 Moore's International Arbitration Awards 755.


16 The Corfu Channel Case (UK v Albania), 1949 International Court of Justice 4 at 22: “certain general and well-recognized principles, namely … every State’s obligation not to allow knowingly its territory to be used for acts contrary to the rights of other States.”

17 (1941) 35 American Journal of International Law 716.