number of people employed in service businesses has exceeded the number of people employed in manufacturing and agriculture combined since about 1950, and service sector employment doubled between 1970 and 1995. However, misperceptions abound. Services are often regarded as secondary industries that are technologically backward, employ people only at low wages, and are not capital-intensive. In reality, the technological intensity of service industries is often high (transportation, telecommunications, and health care services, for example); many service industry incomes are often well above average (doctors, lawyers, investment bankers, and airline pilots, for example); and substantial amounts of capital can be required (transportation firms, communications firms, and national retail chains are excellent examples).

3. U.S. Department of Commerce, Economics and Statistics Administration, Bureau of the Census, *Statistical Abstract of the United States 1995,* 115th ed. (Washington, D.C., 1995), 452 and 779.

4. Quinn, *Intelligent Enterprise.*

5. The story of McDonald's conversion from polystyrene to paper-based quilt-wrap containers is described in S. Svoboda and S. Hart, *McDonald's Environmental Strategy,* National Pollution Prevention Center Document 93-3 (Ann Arbor: University of Michigan, 1993).

6. See Meeting Summary of the NAE Woods Hole Workshop on Technology, Services, and the Environment, Woods Hole, Mass., 1995.

7. See also D. M. DeKeysor and D. A. Eijadi, "Development of the Anderson Lighthouse for the Wal-Mart Environmental Demonstration Store," *Proceedings of the Second International Building Conference,* Special Publication 888 (Gaithesburg, Md.: National Institute of Standards and Technology, 1995), 143-51.

8. See D. J. Lober and M. D. Eisen, "The Greening of Retailing," *Journal of Forestry* 93, no. 4 (1995): 38-41.

9. Industrial ecologist Thomas Graedel of Yale University has begun to characterize service businesses with regard to their life-cycle stages. Personal communication, February 1997.

10. Frederick W. Smith, "Air Cargo Transportation in the Next Economy," in Guile and Quinn, *Technology in Services.*

11. See Stephan Schmidheiny with the Business Council for Sustainable Development, *Changing Course: A Global Business Perspective on Development and the Environment* (Cambridge: MIT Press, 1992).

12. The authors would like to thank Stephen M. Merz of Yale-New Haven Hospital for these specific examples.

13. This colorful description was offered by Claude Rounds of the Albany Medical Center.

14. A prime example is the Healthcare Resource Recovery Coalition (HRCC). The authors are grateful to Kathy Wagner for information about this industry collaborative effort.

six

Globalization, Trade, and Interdependence

Elizabeth Dowdeswell and Steve Charnovitz

Observations about globalization have become clichés. Yet the growing degree of international interdependence—both ecological and economic—has important consequences for the next generation of environmental policymaking, particularly as it affects U.S. domestic policy and as the United States considers its role in a changing world. In recent years, governments have increasingly chosen to join voluntarily in a world of free trade, economic cooperation, and relatively open borders. They have not, however, "chosen" an "open" environment. It is simply a fact of life on this planet. Nations are environmentally interdependent because pollution does not stop at national borders. Ozone layer depletion, climate change, and radiation from nuclear accidents present inherently global risks.

In this chapter, we explore the challenge of managing the interdependence entailed in the cohabitation of our planet by almost 190 nations. Understanding the connections among countries and the linkages between environmental challenges is critical to achieving sustainable development. Using the recent debate on "trade and environment" as a starting point, we suggest that paying more attention to the implications of globalization can improve national environmental programs and permit a clearer understanding of what it means to enjoy sovereignty in an interdependent world. We also examine how the need to coordinate environmental efforts engenders new institutional imperatives for global policymaking.

The Implications of Interdependence

Interdependence influences the problems nations face as well as their policy toolkits. The problems we face are shaped by the contradictory tendencies of interdependence—to strengthen national security and welfare

in some ways while expanding vulnerability in other ways. Moreover, interdependence can frustrate unilateral action on the one hand and foster new types of intergovernmental cooperation on the other. Trade broadens the international dimension of the environmental challenge, creating competitiveness tensions that can work against sound environmental policies. Yet, international market forces can also have a positive effect by transmitting incentives for environmentally sound behavior.

The interaction of national economic and environmental policies is undergirded by an even deeper relationship: the connection between ecology and economy.[1] Although we have come to recognize that there are important links between these two spheres, we have been slower to perceive the reality that, for global issues, the spheres are ultimately one and the same. Perhaps an awareness of the common etymological root of the terms *ecology* and *economy* would keep us from forgetting this fundamental connection as we pursue the goal of sustainable development.

Trade and the Environment

Although it reflects just one facet of interdependence, the trade and environment debate provides a good window for observing how governments respond to globalization. Both trade liberalization and environmental policy can improve the quality of life and enhance social welfare. Yet such harmonious outcomes are not automatic. Economic policymakers must take account of ecological threats and potential health impacts. The failure to do so promises impoverishment, not enrichment. Witness the toxic legacy of communism in eastern Europe.

Economic and environmental policies can be mutually reinforcing. Environmental advances are easiest to achieve when a strong economy makes resources available for investment in pollution prevention and control. Environmental advances are hardest to obtain when poverty forces people into short-term decisionmaking. Poor people will cut down trees for firewood regardless of whether the loss of forest cover leads to soil erosion and other long-term environmental problems.

Some environmentalists oppose freer trade because they fear that economic growth will lead to increased production and consumption that creates pollution and increased pressure on natural resources. Correspondingly,

some champions of development, convinced that the overriding imperative is the reduction of poverty, overlook or ignore environmental issues in their pursuit of expanded exports and what is conceived to be economic growth. We need policies that pursue simultaneously the benefits of sound environmental management and real economic development.

Since 1962, three major rounds of multilateral negotiations have led to freer trade. This opening and expansion of markets have provided, in general, large economic benefits to consumers. But it was not until the early 1990s that the issue of the environmental impacts of trade liberalization arose. Neither the postwar trade negotiations known as the General Agreement on Tariffs and Trade (GATT) nor its successor body, the World Trade Organization (WTO), has made significant progress in integrating environmental considerations into the trade domain. The most concrete advance is that there is now a greater appreciation of the links between trade and the environment. Following the 1986–1994 Uruguay Round of trade negotiations, for example, some countries conducted studies for the first time on the anticipated environmental impacts. Nations are beginning to realize that optimal trade policies cannot be set without taking environmental effects into consideration and vice versa.

The trade and environment debate has also highlighted the danger that environmental policy can be manipulated for protectionist purposes. Some requirements to include a specified amount of recycled content in consumer packaging or newsprint represent sound environmental policies. Other such rules pose trade barriers that are meant to disadvantage competing countries. Although there is no consensus as to how often environmental regulation is used as a guise for trade protectionism, there is widespread agreement that the environment is best served by policies that are not disguised efforts to advantage local producers. Just as enlightened trade policy has aimed to eliminate practices that enrich one country at the expense of another, enlightened environmental policy also needs to avoid mercantilist parochialism.

One key component of environmental policy centers on the problem of cost shifting—as economists say, the "externalization" of pollution or "free riding" by some on the environmental efforts of others. The spillover of air pollution, for example, from country A to country B shifts the cost of cleaning it up to country B (see chapter 7). The trade and environment debate has enriched environmental policy by injecting insights from how the trade

regime deals with the problem of cost shifting and free-riding by governments. In fact, such concerns became a central issue in the recent North American Free Trade Agreement (NAFTA) debate; environmentalists feared that lax environmental enforcement in Mexico would attract new industries that generate greater transborder pollution. One of the strengths of the WTO, and before it the GATT, has been a robust dispute settlement mechanism that enables injured parties to complain about cost shifting and free riders. A central challenge for international policy makers is to develop similar structures to control "beggar-thy-neighbor" environmental policies among countries.

International Investment and the Environment

A key lesson from studying trade and environment is that economic and environmental policies should be made in concert. This lesson also applies to the link between environmental protection and investment flows. In the last fifteen years, there has been an increased recognition of the impact of development projects on the environment. The new dam that was once considered an industrial or energy matter is now recognized as an environmental matter as well.

As Stephan Schmidheiny and Bradford Gentry demonstrate in chapter 8, private sector financial flows are a much greater factor in development than public funds such as World Bank loans and foreign aid. This suggests a broader point: that the responsibility for addressing globalization is not confined to the international public sector. In addition to their effects on production and profits, financial flows also have environmental effects and represent important opportunities to promote sustainable development. Governmental policy frameworks are needed to help financiers, bankers, and insurers make investment decisions that are environmentally sound from a societal point of view.

The enhanced role of private sector financing also calls for new efforts to figure out how to channel private international finance into environmental infrastructure projects and to ensure that all privately financed factories, roads, and other investments incorporate appropriate environmental protections. As foreign aid and multilateral development bank funding diminish in importance, opportunities to inculcate environmental norms into economic agreements and policies should not be overlooked. Likewise, the Multilateral Agreement on Investment (MAI), a treaty being considered by Organization for Economic Co-operation and Development countries to facilitate foreign

investment, could—and should—incorporate appropriate environmental safeguards.

Improving National Policies

In a global economy, there is heightened pressure for the adoption of efficient national policies. Because of international competition, the actions of government can become important factors in whether the companies in one country are more profitable than their competitors in other countries. Tax policies, for example, influence the rate of national saving and hence the availability of investment capital. Regulatory policies similarly influence the cost of production, and technology policies influence the rate of innovation.

In designing government policies, it is important to try to harness the forces of *competition* and *cooperation*. The benefits of cooperation are perhaps obvious. Efforts to address ozone layer depletion, diminished fisheries, and any number of other transboundary environmental problems require collaboration. But environmental progress can also build upon competition to achieve desired policy outcomes. By using a skillful combination of pollution taxes and emissions credits, for example, governments can use market forces to achieve a reduction in pollution at the lowest social cost.

Some environmental policy approaches blend competition and cooperation. The ISO 14000 standards prepared by the International Organization for Standardization (ISO) require companies that volunteer for certification to develop environmental management systems. Another voluntary program, the European Commission's Eco-Management and Audit Scheme (EMAS), has been running since 1995. Somewhat stricter than the more recent ISO 14000, it requires that companies establish and standardize environmental management and reporting systems and that they publish detailed public reports on their environmental management and performance. The objective of EMAS is to promote continuous environmental performance improvements. EMAS and ISO 14000 have tremendous long-term potential and will surely be emulated by others. Companies that complete either or both of these certification programs demonstrate in this way their good intentions toward the environment. Eco-labeling is another example of the fruitful interplay of competition and cooperation. Producers seek to qualify for an eco-label, highlighting their environmental virtues to customers, as a way of expanding their sales. The ISO

standards, EMAS, and eco-labeling are becoming important benchmarks for measuring corporate environmental performance.

Cooperation is also important because nations face many of the same environmental problems. Governments can learn from each other about what policies work. Too often policymakers are unaware of the successful approaches used in other countries. The OECD was established in 1961 to help countries learn best practices from each other. Its useful work on chemicals and its recommendations regarding the polluter-pays principle and the role of economic instruments demonstrate the gains that are possible from symmetric approaches to problems.[2]

Although today's global economy offers unprecedented opportunity for trade and investment, the leap to participation can be daunting for developing countries. Opening a previously closed economy to competition forces change and creates some winners, but also some losers. Managing these tensions is an appropriate and neglected government role. Globalization policies need to be sensitive to how governments can smooth the transition process by helping workers and communities.[3]

Despite the increasing interdependence of the past twenty years, and the greater recognition of it, national policies often remain domestically oriented, disregarding impacts abroad and effects emanating from other countries. Another manifestation of parochialism is a lack of coordination among governmental ministries. For example, in many countries there is little daily interaction between the finance ministry and the environment ministry or between the trade ministry and the natural resource ministry. As a result, finance ministry officials, eager to achieve higher levels of gross domestic product and foreign exchange earnings, continue to advance their own too narrowly defined goals. They push timber companies, for example, to expand logging while giving little consideration to environmental consequences on forests and their indigenous inhabitants. Although the Earth Summit in Rio de Janeiro in 1992 got some of these ministries talking, further progress on integrating decisionmaking has been slow.

National Policymaking, Self-Interest, and Sovereignty

Some politicians and interest groups charge that stronger international rules will diminish national sovereignty. They often speak as if sovereignty were an

unalloyed good. But no country can achieve its goals acting alone; international cooperation is required to maintain world peace, stem trade in narcotics, maintain exchange rates, control diseases, preserve the ozone layer, save whales, or do the hundreds of other tasks that the public expects of government. If sovereignty means merely that nations can choose policies without regard to others, then of course every nation can be sovereign (however feckless its actions). But if sovereignty means more—having the ability to accomplish the goals desired by the public—then governments must develop mechanisms to deal with the basic facts of interdependence.[4]

Mutual commitments in treaties can make participating countries better off. If a country resists international agreements that constrain national decisionmaking, then it will not be able to get other countries to abide by rules that protect their own stake in successful responses to global challenges. In brief, international agreements do not drain sovereignty. Instead, such agreements make it possible for countries to protect their own people. This point was well noted by the Permanent Court of International Justice, which declared in its first judgment: "The Court declines to see in the conclusion of any Treaty by which a State undertakes to perform or refrain from performing a particular act an abandonment of its sovereignty. . . . [T]he right of entering into international engagements is an attribute of State sovereignty."[5]

Of course, sovereignty does have a legitimate place as a policy goal. There should be no expectation of uniformity in economic and environmental policies among countries facing varying environmental circumstances and operating at different levels of development. But we should guard against the use of the term *sovereignty* as a shield for policies that serve certain vested interests at the expense of collective action in pursuit of a common good.

Looking ahead, we will probably see expanded efforts at international policy convergence through consultative mechanisms and treaty arrangements. Continuing developments in the European Union—such as the strengthening of environmental policy and the harmonization of standards—point the way to other programs of regional cooperation. Convergence will also occur through the private sector as businesses move to follow widely agreed upon environmental standards.

Establishing international rules and norms, however, is only one step. The agreements obtained must be implemented at the national level. Sometimes, even when states take leading roles in international negotiations, they

may take a long time to ratify agreements, and an even longer time to translate international obligations into national legislation. Several of the countries that vigorously negotiated the Basel Convention on Hazardous Wastes and the Convention on Biological Diversity have yet to pave the way for national implementation.

In the 1970s, the U.S. government recognized similar procedural infirmities in the process for ratifying trade agreements. In response, trade officials devised the fast-track approval mechanism: federal legislation to implement a trade agreement gets an automatic Congressional vote without amendment after a strictly limited period of review. If the fast-track mechanism is available for multilateral trade agreements, perhaps it should be available for multilateral environmental agreements, too.

International Institutional Challenges

Many commentators are calling for a revamping of international environmental governance. They point to an insufficient response to fisheries depletion, chemical use, and climate change as evidence that stronger institutions are necessary. They also note the difficulty of coordination across environmental treaties. Another area of current focus is the size of UNEP. Some observers would like to see UNEP strengthened, but the recent trend has been reductions in the UNEP's budget.

Despite limitations, UNEP makes important global environmental contributions in a number of areas. It brings scientists together to make independent assessments of environmental problems at the global and regional levels. It catalyzes key environmental negotiations such as the Montreal Protocol on the Ozone Layer, the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, the Framework Convention on Climate Change, and the Convention on Biological Biodiversity. It makes data available to environmental ministries, for example, through the Global Resource Information database. It furthers the development of international environmental law. UNEP has also developed model legislation for safe chemical use, and brokered the Global Plan of Action dealing with land-based sources of marine pollution.

A strengthened environmental regime—that is, the set of treaties, institutions, and practices operating together—would yield many benefits. Such a

regime could help countries adopt more efficient environmental policies in the same way that the international trading system helps countries adopt more efficient trade policies. By enhancing its links to development policy, a stronger environmental regime could seek to prevent industrial and environmental policies from working at cross-purposes. Another need is to focus attention on the benefits industrial countries receive from the global commons and from environmental "services" provided by developing countries. The most important service may be forests that absorb greenhouse gases, thus mitigating climate change and serving as the habitat necessary to support biodiversity. Systematic accounting of these benefits might help lay the groundwork for integration of developing countries into the global economy.

Some observers have proposed the creation of a new Global Environmental Organization (GEO) to coordinate responses to global issues, facilitate exchanges on common problems, and reduce competitiveness tensions that result in suboptimal environmental policies.[6] But the prospect of anything like a GEO seems remote at this point. Therefore, strengthening the current structure may be the best approach available.

Several reform options have been proposed. First, building on its long-standing interactions with business groups and nongovernmental organizations (NGOs), UNEP could become a more effective counterweight to the commercial focus of the WTO. Second, mechanisms for long-term funding of international environmental investments shall be identified, including innovative forms of financing such as taxes on global pollution. Third, a new structure could be established to address environmental disputes.[7]

The WTO's Committee on Trade and Environment represents another potential environmental opportunity.[8] To date, the committee has not chosen to advocate new trade liberalization in support of environmental objectives. Key proposals by developing countries for greater attention to restraint on government subsidies for natural resource industries have made little headway. And the role of the trade regime in reinforcing utilization of environmental standards received virtually no attention within the committee.

The problem of coordination among international organizations goes far beyond the WTO. Although some specialized international organizations have proven effective, they often lack the capacity to deal with the connections between issues and the motivation to develop ongoing relationships with other international organizations. The need for coordination was recognized

in Agenda 21 following the Rio Conference in 1992, but progress toward better linkages has emerged slowly.[9]

In particular, too little has been done to incorporate economic considerations and development concerns into international environmental policymaking. There are, however, some models to follow. The Montreal Protocol—the ozone layer protection program—phases out CFCs and other ozone-depleting chemicals over time to facilitate the shift to substitutes and to reduce the costs of compliance. It also sets different timetables for the phaseouts by industrial and developing countries and provides financial and technical assistance to developing countries seeking to fulfill their international environmental obligations.[10] These provisions make this treaty easier for all countries to accept, more likely to achieve its goals, and more durable.

We need to build on such approaches in negotiating future treaties. Innovation is called for in the areas of financial incentives, multi-tier obligations, phase-ins over time, technology transfer, use of economic instruments, and the assignment and marketability of property rights. More policy research into the design and evaluation of such mechanisms would assist policymakers in negotiating treaties that encourage wide membership and discourage free-riding behavior.

Another institutional strategy that should get more emphasis is the use of regional agreements. The European Commission, Association of South East Asian Nations (ASEAN), and Mercosur (a South American common market) are all improving their environmental programs. The environmental side accord of the North American Free Trade Agreement has engendered a new U.S.-Canada-Mexico Commission for Environmental Cooperation. Initial impressions are favorable as the commission performs its information-gathering, investigatory, and educational functions.[11]

The rapid expansion of regional economic integration provides a new opportunity for environmentalists. Just as regional trade agreements are used to harmonize trade and investment policies beyond what is politically feasible at the multilateral level, these regional agreements can also be used to test-drive programs of environmental collaboration and standards harmonization.

Finally, the role of NGOs in international development needs to be expanded. At the local level, NGOs can help transform the way individuals think about their own responsibility for sustainable consumption practices. At the international level, NGOs can bring information and competing ideas to

governing bodies and international civil servants. UNEP and other institutions in the environmental regime have been among the most open to NGO participation of all international agencies. This openness can serve as models to other international agencies that are just beginning to grow out of their traditional government-only practices.

Although the pace of change in the global economy is very rapid, public institutions respond slowly. Despite increased recognition of environmental and economic interdependence, our modes of national and international governance have not evolved to address this new reality. The general public needs to be convinced of the national interest in *multilateral* solutions. Business leaders also need to recognize the new realities of environmental interdependence and to support efforts to address transboundary and global harms. Opinion leaders who promise to preserve national sovereignty by shunning international involvement must be challenged to deal with the facts of interdependence.

At the global level, international agencies cannot continue to maintain a reclusive approach that disregards the interconnectedness of issues, the interrelationships among agencies, and the increasingly expansive international civil society reflected in a diversity of NGOs. All international agencies must pay attention to the oceans, rivers, lakes, atmosphere, habitats, and biodiversity that sustain life on earth.

In conclusion, sustainable development requires a comprehensive perspective that integrates environmental, social, and economic goals. Governments should be prepared to introduce reforms that recognize the new economic realities and address past international policy failures. U.S. leadership is important in developing a consensus for carrying out these reforms. Governmental intervention should be set at a scale that matches the scope of the problem—be it local, national, regional, or global. Working with other countries, the United States should continue to look for better ways to manage the interdependence that is so important to its own and the world's prosperity.

Notes

1. See Donald Worster, *Nature's Economy: A History of Ecological Ideas* (Cambridge: Cambridge University Press, 1985), 36–38, 191–93 (discussing the etymology of *ecology* and *economy*).

2. Organization for Economic Cooperation and Development, *OECD and the Environment* (Paris: OECD, 1986); OECD, *Integrating Environment and Economy* (Paris: OECD, 1996).

3. See Dani Rodrik, *Has Globalization Gone Too Far?* (Washington, D.C.: Institute for International Economics, 1997).

4. See Abram Chayes and Antonia Handler-Chayes, *The New Sovereignty* (Cambridge: Harvard University Press, 1995).

5. The S.S. *Wimbledon* [1923] P.C.I.J., ser. A, no. 1, p. 25.

6. See Daniel C. Esty, *Greening the GATT* (Washington, D.C.: Institute for International Economics, 1994), esp. chap. 4.

7. See, for example, the *Report of the Foreign Policy Project,* a joint undertaking of the Overseas Development Council and the Harry Stimson Center (1997).

8. *The World Trade Organization: An Independent Assessment* (Winnipeg: International Institute for Sustainable Development, 1996).

9. United Nations Conference on Environment and Development, *Agenda 21* (Washington, D.C., 1992).

10. Duncan Brack, *International Trade and the Montreal Protocol* (London: Royal Institute for International Affairs, 1996).

11. North American Commission for Environmental Cooperation, *1995 Annual Report* (Montreal, 1996).

part two

Tools and Strategies for the Next Generation