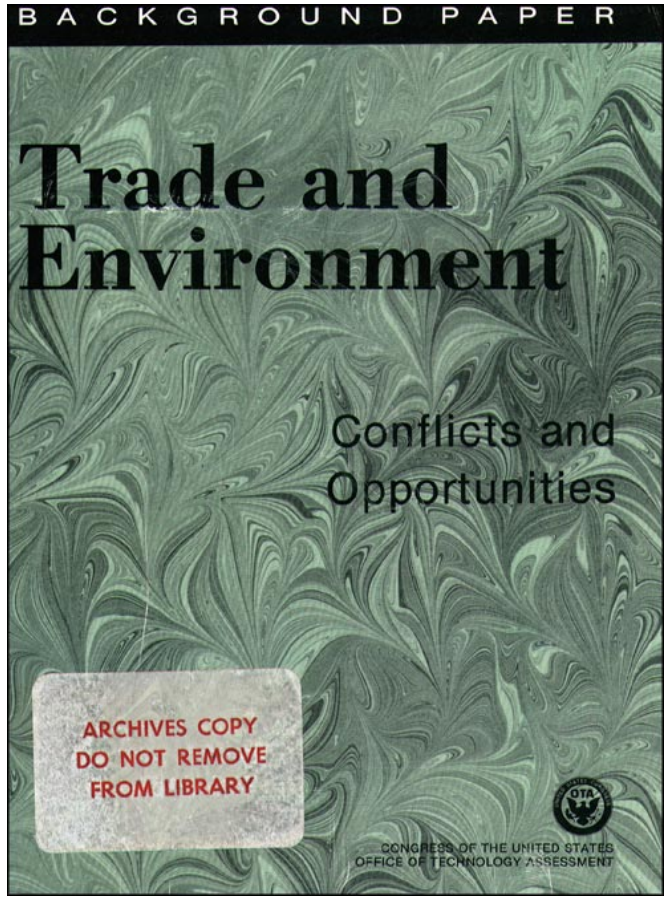
Trade and Environment: Conflicts and Opportunities

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Foreword

The interactions between trade and environment have recently—and suddenly-emerged as an important concern in Congress and in the world community. Given our increasingly interdependent world, this should not be a surprise. Both environmental protection and trade are crucial to the welfare of nations; and yet policies in both areas have developed, for the most part, in isolation from each other.

This background paper describes what appears to be an enlarging potential for conflict between *the* two, as reflected in disputes about the trade impacts of environmental laws and about the environmental impacts arising from efforts to liberalize trade and investment. These controversies have prompted discussions about ways to more closely coordinate policies, both nationally and internationally. The issues are complex; hence progress could be slow. However, the payoff will be important, not only in terms of avoiding future conflicts, but in making the objective of environmental protection and the objective of economic progress more compatible. There is growing international awareness, reflected in the upcoming United Nations Conference on Environment and Development this June in Rio de Janeiro, that environmental protection will be essential for achieving economic progress in a sustainable reamer. And, when countries have effective environmental policies in place, some of the resources generated from trade and investment can be turned to environmental protection.

The background paper explores some trade and environment questions, especially from the context of the General Agreement on Tariffs and Trade, which provides a framework of rules governing most of the world's trade. It is the frost publication in an assessment on American industry and the environment, requested by the House Committee on Foreign Affairs, the House Committee on Energy and Commerce, and the Senate Committee on Finance. Another link between trade and the environrnent, the growing+ global market for environmental technologies, products, and services, will be among the topics discussed in the final report of this assessment.



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NOTE: OTA appreciates and is grateful for the valuable assistance and thoughtful critiques provided by the advisory panel members. The panel does not, however, necessarily approve, disapprove, or endorse this background paper. OTA assumes full responsibility for the background paper and the accuracy of its contents.

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Acronyms

CFC — chlorofluorocarbon
CITES — Convention on International Trade in Endangered Species of Wild Fauna and Flora

EC — European Community
ECJ — European Court of Justice
EGS — environmental goods and services
EPA — Environmental Protection Agency
Eximbank — Export-Import Bank of the United States

GAO — General Accounting Office
GATT — General Agreement on Tariffs and Trade
GEF — Global Environmental Facility
GHG — greenhouse gas
GNP — gross national product

ITO — International Trade Organization

MTO — Multilateral Trade Organization

NACEPT — National Advisory Council for Environmental Policy and Technology
NAFTA — North American Free Trade Agreement
NGO — nongovernmental organization
NIC — newly industrialized country

ODA — official development assistance
OECD — Organisation of Economic Co-operation and Development
OPIC — Overseas Private Investment Corporation

PCB — polychlorinated biphenyl

UN — United Nations
UNCED — United Nations Conference on Environment and Development
UNCTAD — United Nations Conference on Trade and Development
UNDP — United Nations Development Program
UNEP — United Nations Environment Program
UNIDO — United Nations Industrial Development Office
US AID — United States Agency for International Development
US TDP — United States Trade and Development Program
USTR — United States Trade Representative

Chapter 1

Overview and Summary

Chapter 1
Overview and Summary

The potential for conflict between environmental concerns and international trade is increasing. The past two decades have seen a proliferation of national environmental laws and international environmental agreements along with a rapid expansion of international trade and investment. For the most part, the two regimes-environmental protection and international trade-have developed independently. Many of the rules for trade were put in place before the environment was widely viewed as a matter for global concern. A number of environmental laws and agreements, including some of the most far-reaching, might conflict with current trade rules.

As environmental problems have mounted, so have demands for action at both the international and national levels. When the General Agreement on Tariffs and Trade (GATT)-the major international agreement governing trade-was formed in the late 1940s, few countries had significant environmental laws and comparatively few global, bilateral, or regional environmental agreements were in force. Today, Federal and State environmental laws and regulations in the United States alone could fill several bookshelves; several other advanced economies also have strong environmental protection laws. By 1990, the number of international environmental agreements had mushroomed to over 150. Nearly half were adopted after 1979.[1]

There is also an increased volume of trade and investment flows among nations, along with concern about environmental impacts from these flows. Since 1950, according to one estimate, trade in manufactured goods has increased nearly twentyfold, or two-and-one-half times faster than world output as a whole.[2] This increase happened alongside successive rounds of trade negotiations aimed at liberalizing international trade. The current Uruguay Round of GATT discussions has not focused on environmental issues. Yet many of the key areas for negotiations-e.g., agriculture and dispute resolution-have environmental ramifications.

The environmental implications of efforts to liberalize trade are poorly understood, and efforts by governments and international bodies to determine how different trade patterns and policies affect the environment are still in their infancy. Generalizations about whether the net environmental effects from liberalizing trade will be positive or negative are usually too simplistic to be much use for policymaking. The actual effects depend on the Specific context, including different nations' capabilities to implement effective environmental protection regimes. Countries vary greatly in this regard.

The trade community is concerned about the trade impacts of measures taken in the name of the environment. These measures include both domestic environmental regulations, which can have side effects on trade, and explicit trade restrictions taken in the name of environmental concerns. Whether intentionally or not, some such measures have the potential to restrict trade more than is necessary to achieve environmental goals. In some cases, the disruption of trade also might be out of proportion to the environmental benefit.

Competitiveness also enters into the equation. Countries with strong environmental standards might view the absence of comparable regulations in other countries as a de facto subsidy, since less-regulated firms may bear fewer compliance costs. The United States, Japan, and several European countries have strong environmental standards compared with most of the rest of the world. Some assert that lack of comparable standards might warrant trade measures such as countervailing duties. Several bills and resolutions introduced in the 102d Congress aim to address these competitive impacts.

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[1] U.S. Congress, General Accounting Office, *International Environment: International Agreements Are Not Well Monitored,* GAO/RCED-92-43 (Gaithersburg, MD: U.S. General Accounting Office, January 1S92). The GAO analysis was based on data from the U.S. International Trade Commission.

[2] As cited in Labor-Industry Coalition for International Trade, *The Uruguay Round: Will It Be a Good Deal for Us. Manufacturing?* (Washington, DC: June 1990).

Until recently, institutions dealing with international trade and with the environment have acted mostly in isolation and ignorance of each other. The growing potential for trade/environment conflicts suggests that this isolation is no longer appropriate. But policymakers are only now grappling with what it would mean to more closely coordinate trade and environmental policies.

Some environmentalists fear that U.S. trade officials are not sufficiently attuned to environmental issues to safeguard U.S. environmental standards and objectives in trade negotiations. There is also concern that the trade provisions in some widely accepted international environmental agreements might be found inconsistent with GATT if challenged. Such agreements address problems as diverse as depletion of the stratospheric ozone layer, extinction of plant and animal species, and transportation of hazardous wastes. The number of international agreements and the pace of national actions can be expected to grow. For example, the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in June 1992 may consider framework agreements for biodiversity and climate change. It could also result in nonbinding measures on topics as diverse as forest management, ocean pollution, and toxic and hazardous chemicals. Some of these could be the basis for further negotiations for possible conventions that might have trade provisions.

Some in the trade community fear that environmental activists, along with other interest groups, could combine to make completion of the Uruguay Round GATT negotiations problematic, as well as threaten the adoption of a North American Free Trade Agreement (NAFTA) now under negotiation with Mexico and Canada.[3] Environmental issues emerged as a congressional concern soon after the Administration announced that it would seek fast track authority to negotiate NAFTA. In return for this authority, the Administration made a commitment to deal with environmental issues, mostly in separate ("parallel track") discussions with Mexico. The extent of progress made in addressing environmental issues continues to be a major congressional concern about the negotiations.[4]

So far, GATT has only been asked to resolve a few disputes about whether particular environmental measures (or closely related measures) violate its norms of liberal trade. (See app. A for details of these disputes.) But this number might increase as more environmental actions are implemented. As discussed in chapters 3 to 5, GATT is not now well-equipped to weigh the broader issues that sometimes underlie such trade disputes. Making GATT more sensitive to environmental concerns, while retaining its ability to prevent nations from erecting trade barriers in the name of environment, will be an important challenge for policymakers.

The principles of liberal trade remain important in today's world. If the Uruguay Round fails, with GATT's members unable to agree on a set of amendments, GATT would be weakened, possibly severely.[5] Other trading arrangements (such as regional trading blocks) might become the dominant norm. Even so, international institutions (even if perhaps regionally based) would still be needed to facilitate trade. These institutions would face trade/environment issues similar to those now involving GATT.[6] Thus, although this paper focuses on GATT, the issues will remain relevant whatever the outcome of the Uruguay Round. There will be a continued need to address environmental issues as they relate to trade, and many of the responses will have the potential for trade/environment conflicts of the sort discussed in this paper.

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[3] In this regard, a recent report on trade and environment by the GATT Secretariat pointed to a "serious risk of environmental issues and concerns being exploited by protectionists for their own benefit" and expressed concern about "efforts of protectionist groups to draw environmental groups into implicit or explicit alliances.' GATT Secretarial "Trade and the Environment" (advance copy, released Feb. 12, 1992), p. 5. This analysis will be published by the GATT Secretariat as part of its annual report. (The GATT Secretariat cannot speak for its members, so this report is not an official statement of GATT policy.)

[4] Steps taken by the Administration include appointment of environmental representatives to several trade advisory committees, preparation of a review of U.S.-Mexico environmental issues, and cooperation with Mexico on border environmental problems, including a proposed doubling of U.S. funds for border projects in Fiscal year 1993.

[5] As this report went to press, GATT parties were still considering draft final negotiating text for completing the Uruguay Round. Initial expectations for conclusion of the Round by mid-April 1992 were not realized, in part because of disagreement over agriculture.

[6] Indeed, the same types of conflicts have already surfaced for trade among members of the European Community (EC) (box 2-A). The EC has a regional trading regime that supplants GATT for trade among EC members.

[7] See app. B. See also Susan Fletcher and Mary Tiemann, "Environment and Trade," IB92006, Congressional Research Service Issue Brief (updated regularly).

SUMMARY AND FINDINGS

Many bills and resolutions introduced in the 102d Congress deal with the interactions between trade policy and environmental policy in one way or another.[7] Trade/environment interactions are now being addressed by the executive branch as well. This paper provides background information and analysis that may be useful as Congress begins to consider trade and environmental questions; it focuses primarily on multilateral issues pertinent to GATT, although some treatment is given to NAFTA-related questions. The questions and issues considered here comprise only some of the complex interactions between trade and the environment.[8]

Certain distinctions that recur in various places in this paper are worth keeping in mind. These include distinctions between processes and products; between regulating conduct at home and seeking to influence conduct abroad; between pollution (or other environmental degradation) that stays within the polluting country, and pollution (or degradation) of a transborder or global nature; between unilateral and multilateral action; between the perspectives of developed countries and developing ones (the "North-South" split); and between use of positive inducements such as financial and technical assistance and increased market access, and negative inducements such as trade sanctions.

Several themes also recur. First, relatively little is known about some important topics, including the effect of trade on environment, and the effect of environmental measures on trade and on competitiveness. Second, addressing problems arising from interaction of trade and environment will require more cooperation between developed and developing nations, between advocates and policymakers for trade and those for environment, and between international institutions with trade, development and environmental responsibilities. Third, for environmental problems not directly caused by trade, trade restrictions alone are seldom the preferred solution, though if carefully crafted they can at times play a useful role in a broader strategy. Finally, while interactions between environment and trade now receive more attention, environmental issues and regulations comprise only a portion of the trade and competitiveness picture in which U.S. companies operate; other areas are of equal or greater importance, as discussed in detail in several other OTA reports.[9]

OTA has assumed in this paper that the United States, as a matter of policy, will continue to maintain strong policies to protect the domestic environment and will be concerned about many global environmental issues. It also assumes that the United States will continue its historically strong commitment to the goal of liberal trade (trade that is as free as possible), and will seek to avoid competitive disadvantage for U.S. industry. Achieving all of these goals, which at times may appear to conflict, will be a challenge. The paper also assumes that GATT or its objectives will continue to be seen as relevant to the contemporary trading system. Findings from the paper are summarized below, with references to chapters and appendices for further discussion.

1. International Environmental Agreements and the Trading System (see ch. 3):

At least 17 international environmental agreements have trade provisions, according to GATT.[10] There soon may be *more* international environmental agreements, due to UNCED and other discussions, although these will not necessarily have trade provisions. It is possible that trade restrictions imposed by an individual country pursuant to an international environmental agreement might some-

[8] Issues not addressed in much detail in this paper include, among others, international trade in hazardous wastes, tropical timber, endangered species, and domestically banned or hazardous substances; ecolabeling and certification of a product's environmental characteristics or history; and requirements for product packaging and disposal. While this paper at times discusses such issues for purposes of illustration, in depth discussion of specific issues, environmental agreements or national laws with trade provisions is beyond this paper's scope.

[9] See, e.g., U.S. Congress, Office of Technology Assessment, ***Competing Economies: America, Europe and the Pacific Rim, OTA-ITE-498*** (Washington DC: U.S. Government Printing Office, October 1991), and ***Making Things Better: Competing in Manufacturing,*** OTA-ITE-444 (Washington, DC: U.S. Government Printing Office, February 1990).

[10] GATT Secretariat, op. cit. As used in this paper, the terms "trade measure' and 'trade provision' are used interchangeably to denote any explicit restriction on trade. (This does not include trade effects of domestic regulations.) "Trade sanction" is a punitive trade measure designed to coerce a change in another country's behavior.

day be found to violate GATT.[11] Also, fear of GATT conflict might induce nations to leave potentially useful trade provisions out of agreements. More broadly, independently of whether they violate GATT's particular rules, trade provisions of environmental agreements have the potential not only to protect the environment but also to hinder trade. Thus, there is a need to consider how best to accommodate both environmental interests and the interest of promoting liberal trade that GATT represents.

GATT's Secretariat has urged countries to pursue multilateral agreements on the environment and to resist the urge to employ unilateral trade measures.[12] The Secretariat maintains that "GATT' rules could never block adoption of environmental policies which have broad support in the world community. "[13] The reason: GATT members could grant a waiver or exception to GATT rules in the event of a conflict. Even so, GATT does not give special status to such international agreements, and such a waiver could be far from automatic.

The potential for conflict with GATT could depend in part on the type of trade restrictions. Two types of trade restrictions should be distinguished. The first is restrictions based on the nature of a product itself, such as restrictions on refrigerators that contain chlorofluorocarbons (CFCs) that when released deplete the ozone layer. GATT tends to permit such import restrictions when matched by the same restrictions on domestic goods (e.g., a ban on all imported and domestic refrigerators containing CFCs). The second type of restriction is based on how a product is made, such as restrictions on computer chips made using CFCs as a solvent. One of the more prominent international agreements—the Montreal Protocol on Substances That Deplete the Ozone Layer-alls for a determination by January 1994 of the feasibility of using this latter type of restriction. If a challenge were brought, GATT would be less likely to accept such process related import restrictions, even if matched by a similar restriction on domestic production processes (e.g., a ban on the use of all domestic and imported computer chips made using CFCs as a solvent). For some environmental purposes, both types of restriction can be important.

Given the potential for conflict, it would be desirable to review current and proposed environmental agreements with an eye toward GATT problems. This is one of the tasks to be taken up by the recently convened GATT Group on Environmental Measures and International Trade. Potential problems might be avoided by modifications in agreements' trade provisions or by GATT waivers or amendments.[14] Such changes could be agreed on by consultations between GATT and the parties to an agreement. Similar consultations between negotiators of upcoming international agreements and GATT might help to stave off future conflicts. To aid consultations concerning existing and future trade measures in international agreements, it could help to develop some guidelines for the use of trade measures for environmental purposes.[15] While each case would have unique considerations, such guidelines could provide a useful frame of reference.

2. Use of Unilateral Trade Provisions in National Environmental Policies (see ch. 3):

Some countries, including the United States, occasionally have employed trade provisions in environmental laws to encourage other countries to adopt similar practices, and/or to ameliorate the negative environmental effect if other countries do not adopt similar policies (e.g., the U.S. Maxine Mammal Protection Act—see below). Such provisions may be seen as attempts to apply domestic law ' 'extraterritorially," in that they seek to *protect the*

[11] Such a ruling could come after one GATT member challenged a trade restriction used by a second GATT member pursuant to the environmental agreement. If the first country were not a party to the environmental agreement, then it would not apply between the two countries, leaving GATT as the operative law. If the first country were a party to the environmental agreement, then there would be a question as to which law—GATT or the environmental agreement-prevailed. While the general rule is that the agreement made later in time would take precedence, the decision as to which law governs can be complex.

The effect of a ruling against a country imposing the trade restrictions would be hard to predict. Undercurrent GATT procedures, countries would be asked to adjust their national laws or, if they refused, to compensate the complainant but counties cannot be forced to comply. Current GATT dispute resolution procedures and proposed amendments are discussed in the annex to ch. 2; ways to change GATT to give international agreements special status are discussed in ch. 5.

[12] Ibid., p. 4.

13 Ibid., p. 6.

[14] The procedures for GATT waivers and amendments are discussed in ch. 5.

[15] Possible institutional arrangements for negotiation on particular cases and general guidelines are discussed inch. 5.

environment, or to impose domestic norms on or otherwise *influence conduct,* beyond the national borders (either in other countries or in international territory).

Whatever their desirability from an environmental viewpoint, these measures can come into conflict with GATT This is partly because, as noted in finding 1 above, import restrictions based on the process for making a product seem problematic under GATT.

An example is a dispute between the United States and Mexico over U.S. tuna imports. To protect dolphin, the Marine Mammal Protection Act called for banning certain tuna imports when the incidental killing of dolphin by a country's tuna fleet exceeded certain limits. After Mexico complained, a GATT dispute resolution panel reported that the U.S. ban violated GATT.[16] Subsequently, the GATT Secretariat made a strong statement against unilateralism: "In principle, it is not possible under GATT's rules to make access to one's own market dependent on the domestic environmental policies or practices of the exporting country."[17] However, there may be times in which a country believes unilateral trade measures are justified for environmental reasons. (The possible need to modify GATT's procedures for deciding trade disputes involving environmental concerns is discussed in item 6 below.)

Whether the U.S. Government should use trade measures or discussions to influence environmental behavior abroad has become a controversial issue in Congress. Several bills and resolutions have been introduced proposing negotiations to make GATT compatible with U.S. laws designed to protect the environment (or to influence environmental behavior) outside U.S. borders. (See app. B.) It would be possible to change GATT's rules (ch. 5) to be more accommodating to trade provisions in national environmental policies. However, such changes could open the door for more restrictions on trade than warranted by environmental objectives alone. To achieve a balance of interests, changes might include general guidelines for the use of unilateral trade measures for environmental purposes; while each dispute would still be resolved individually on its own merits, the guidelines could be given some weight. Unilateral trade measures, if permitted by GATT, might be used against as well as by the United States. One example might be limits on greenhouse gas emissions. Several countries have quantitative goals to reduce greenhouse gas emissions; the United States does not.

3. Trade Barriers Arising From Domestic Regulations (see ch. 4):

Domestically oriented regulations, seeking to affect what happens only within the national borders, can act as barriers to trade. (A well-known example is a Danish beer and soft drink container law with return-for-reuse requirements that appear to favor domestic companies. See app. A.) These barriers can be reduced if different countries' regulations can be made similar, or "harmonized. ' However, while harmonization is often a worthwhile goal, countries' differing needs can sometimes make harmonization infeasible or undesirable (see box 2-A and ch. 3).

Some nonbinding suggestions to help countries address the international economic aspects of environmental policies have been available since 1972, through the Organisation for Economic Cooperation and Development. Among other things, the guidelines encourage OECD members (which consist of 24 industrial countries and the EC) to apply environmental measures to products in ways consistent with GATT's principles of national treatment and nondiscrimination (see ch. 2 and annex to ch. 2). As part of a broader examination of trade and environment interactions, OECD members are currently reviewing these principles for possible updating or revision.

The previously mentioned GATT working group on environmental measures and trade is examining the transparency of environmental regulations that are likely to have trade effects, and is also examining the trade effects of environmentally motivated regulations regarding packaging and labeling. To date, domestically oriented regulations have received only modest scrutiny in GATT. Certain changes proposed in the Uruguay Round could alter

[16] The panel's report has not been taken up by the full GATT Council for adoption as an official GATT decision. Even if adopted, the GATT decision would not supersede U.S. law. The case is discussed further in chs. 2 and 3; the GATT dispute resolution process and its relation to U.S. law is discussed in the annex to ch. 2.

[17] GATT Secretariat, op. cit., p.10. The GATT Secretariat does not have the authority to interpret GATT law or to determine GATT's policies; that can be done only by GATT'*s member countries acting together.

that, raising a new potential for conflict between GATT and national environmental laws. As in finding 2 above, GATT's procedures for resolving disputes over particular regulations might need adjustment. (See finding 6 below.)

4. The Question of Competitive Impacts (see ch. 4 and app. E):

Concern about competitive effects has been a recurring issue in debates about strengthening U.S. environmental laws. One concern is that countries with weaker standards might gain a competitive advantage. The perception of competitive impacts can also lead to domestic pressures to go slow in implementing laws. Competitiveness concerns partly underlie some recent proposals in Congress calling on U.S. trade officials to negotiate with other countries to raise their standards, or to treat lower environmental standards as a form of subsidy against which countervailing duties might be used.

A review of past research suggests that environmental regulation has not contributed in a major way to relocation of U.S. industry overseas or to significant deterioration of the U.S. trade posture. (The analysis of competitiveness effects in this paper is restricted to implications for U.S. manufacturing; the effects for agriculture, commercial fishing, or mining are not examined.) Market access and lower labor costs generally have been the most important factors in relocation. In the special case of Mexico, the border area, with its low labor costs, proximity to the United States, and duty-free export processing zones, has attracted many U.S. firms over the years. Some of these firms relocated in part because of weaker Mexican environmental regulations. If Mexico succeeds in its efforts to implement tougher standards, U.S. firms in the future will have less environmental rationale for relocation. In the meantime, environment, combined with other factors, continues as one of several location criteria.[18]

Most studies have found that environmental regulations generally have a small effect on U.S. manufacturing competitiveness; however, they can have a larger effect in particular sectors with high environmental compliance costs. Moreover, caution should be exercised in applying past studies to the present competitive climate. Much of this research uses data from the 1970s, when fewer U.S. industrial sectors were under great competitive challenge from abroad. What were modest impacts 10 or 15 years ago might well be more troubling today when international competition as a whole is more intense. Also, U.S. environmental regulations are more strict now than they were. So are regulations in some other countries. These changes leave open the possibility that environmental regulations could be more of a competitive disadvantage than before. Some "leading edge" U.S. firms have turned environmental regulations from a competitive drag into an advantage, however.

To the extent that U.S. environmental standards put U.S. manufacturers at a disadvantage, different responses are possible. Trade measures such as countervailing duties could be used, but they would entail administrative problems and their effectiveness would not be guaranteed. Moreover, countervailing duties to adjust for the absence of environmental regulation in another country probably would be deemed a GATT violation if challenged. Other steps, such as support for environmental research and development or technical assistance to help manufacturers comply with regulations, might also be considered in a strategy to deal with competitive impacts.

Because of concern about competitiveness, the Congress, in its 1990 revisions to the U.S. Clean Air Act, instructed the President to report to Congress with an evaluation of competitive impacts and a strategy for addressing impacts through trade consultations and negotiations. Examples of such options included harmonization of standards and trade adjustment measures.[19]

5. The Case of Developing Nations (see ch. 3):

Some trade/environmental conflicts reflect the sharp differences between developed and developing countries over trade and responsibilities toward the global environment. While there are a growing number of exceptions, many developing countries see environmental protection as having to take a back seat to their plans for economic development. Although no country wishes to be seen as a pollution haven, some developing countries may be reluctant to take the lead in raising their environmental

18 Location issues will be discussed in greater detail in an OTA study on U.S.-Mexican trade, technology, and investment to be completed later in 1992.

19 Section 811 of Public Law 101-549. The report is due on May 15, 1992.

standards for fear of jeopardizing what in some cases might provide a comparative advantage or an attraction for new investment.

However, there is growing recognition in developing nations that environmental and development objectives must become more compatible if a sustainable future is to be forged. But many developing countries argue that they do not have the resources to act on their environmental problems, given more immediate problems like poverty and debt; they maintain that they need help from the developed world to finance much of their environmental activities. This question of who pays is highly controversial, and will be a central issue addressed at the United Nations Conference on Environment and Development. A number of options for assistance could be considered in addition to direct foreign aid. (See box 3-A.)

It is sometimes argued that liberalized trade and investment will produce the financial resources that developing countries might use for environmental improvements. However, this will not happen unless a country has requirements or incentives in place for effective environmental management. Active citizen interest, in a receptive political system, can also be crucial for effective environmental policies; this element is lacking in many developing countries. When countries do upgrade their environmental standards, change is likely to be slow. It takes more than a law to make environmental standards comparable; institutions and resources for enforcement must be in place. Even those countries, like the United States, with the most environmental policy experience find it can take many years before standards called for in a law are implemented.

As the United States reassesses its trade positions with respect to developing countries, environmental issues (with their associated competitiveness dimension) will enter increasingly into the debate. One issue will be how to encourage developing countries to improve standards-whether through technical and financial assistance, for example, or through threats of countervailing duties and other trade measures. Another issue is whether environmental objectives should be pursued independently, or handled in parallel track discussions (as is mostly the case with NAFTA), or as part of future trade negotiations (as called for in several resolutions introduced in the 102d Congress).

It should be noted that environmental reform in Mexico began before the current NAFTA debate. But it might not have proceeded at its present pace were it not for a perception that inadequate performance on the environment could imperil a free trade agreement with the United States. There has been an acceleration of cooperative measures taken by both the U.S. and Mexican Governments on border environmental problems, as well as increased commitments of financial resources. Some border area organizations, however, maintain that a much greater investment than currently envisioned will be needed to meet border area environmental and public health needs.

The United States is beginning to consider possible broadening of free trade discussions to other developing countries within the hemisphere, as envisioned in President Bush's Enterprise for the America's Initiative. As preparations for such discussions, more steps might be taken to assist Caribbean, Central and South American countries to develop and enforce effective environmental management measures. The relationship of such measures to other issues of greater hemispheric economic integration, such as debt and investment, would also need to be addressed. In this regard, it is worth noting that European Community economic integration, involving countries far more similar in economic characteristics, has taken many years of effort and substantial use of adjustment mechanisms to address competitive impacts (see box 2-A).

6. Trade/Environment Decisionmaking (see chs. 2 and 5):

Several international institutions could play roles in addressing trade/environment interactions. Besides GATT, these include the Organisation for Economic Co-operation and Development and various United Nations bodies. Each has its strong and weak points.

GATT as an institution has responded slowly to the unfolding dilemmas posed by the increasing convergence of trade and environmental issues. Although a working group on environmental measures and trade has existed for 20 years, it met for the frost time in the fall of 1991. Environmental issues have not been directly addressed in the Uruguay Round, even though changes under consideration could have environmental implications (see ch. 2). While the thinking of the GATT Secretariat on trade and environment matters was suggested by a report

released in February 1992, this report was not based on a consensus of the member countries.[20] Several options exist for addressing environmental/trade issues within GATT; some, including GATT's Director General, have argued for inclusion of environmental matters in a post-Uruguay Round trade discussion. Others have proposed a GATT code on the environment, or perhaps a moratorium on rulings adverse to environmental concerns pending adoption of new procedures to handle those disputes.

To date, OECD has made the most active effort to grapple with the complex interactions between trade and environmental objectives.[21] Even though it has very limited capacity to set and enforce policy among its members, OECD can bring a level of integration to trade/environment questions that few other bodies can. OECD's efforts are jointly supported by its environment directorate and its trade directorate, and its members' trade and environmental agencies are meeting to develop national positions. OECD has issued useful guidelines and principles on related questions in the past. But it does not have developing countries as members. Even though OECD is attempting to consider their concerns, any guidelines it issued might not be acceptable to developing countries.

There is currently no institution equivalent to GATT with respect to international environmental agreements. Nor is a single, comprehensive international agreement covering all global environmental problems likely. Yet a more coordinated approach for developing and monitoring international environmental agreements would be beneficial. According to the U.S. General Accounting Office, the administering bodies for international environmental agreements generally do not have the authority or the resources to monitor compliance.[22] Thus, these bodies tend to serve as information clearinghouses rather than enforcers of agreements. Some have proposed stronger coordination mechanisms or even anew international institution to give more visibility to environmental concerns.

Indeed, the GATT working group on environmental measures and trade will look to UNCED for authoritative guidance on environmental standard setting and on environmental policy making.[23] Institutional questions will be debated at UNCED; in addition, broader reorganization of the UN is under consideration. Out of this may emerge a stronger mechanism for addressing international environmental issues.

Some efforts are underway within the U.S. Government to develop information and formulate U.S. positions on these matters with respect to GATT and OECD discussions. An interagency group, coordinated by the Office of the U.S. Trade Representative (USTR), has been meeting since 1991. Some environmental representatives have been appointed to USTR's advisory committees, and the U.S. Environmental Protection Agency has its own advisory group working on these issues.

While such activities have generated much useful information, there is a possibility that U.S. positions will emerge from a largely hidden and informal interagency process with little congressional input. Congress might undertake oversight of interagency progress in identifying possible U.S. objectives as a step toward determining whether to provide specific legislative guidance. It also might consider oversight on international environmental negotiations that have trade components.

Whether undertaken at the international or national level, there is clearly a need for better information and analysis of the environmental effects of different trade patterns and policies. There have been few efforts to analyze such impacts in the past. There is also a need for continuing evaluation of the trade and competitiveness impacts of environmental regulations; such evaluations could be helpful not only in identifying appropriate and inappropriate use of trade measures, but also competitive disadvantages arising from differences in national standards.

As has been mentioned, abetter method to resolve trade disputes involving environmental issues is needed. Currently, a GATT dispute resolution panel

20 GATT Secretariat, op. Cit.

21 OECD discussions on these questions began in early 1991.

22 U.S. General Accounting OffIce, Op. cit., p.4.

23 Richard Eglin, Statement to the General Assembly on the Global Legislators Organization for Balanced Environment, Washington, DC, February 1992.

hears the case and writes a report, which is then submitted to the GATT Council for adoption as an official GATT decision (see ch. 2 annex). However, effective resolution of environmental disputes may require not only judgments about the application of GATT rules and disciplines, but also broader societal judgments (e.g., how to weigh the best available scientific evidence with other factors such as economic cost). Changes such as permitting testimony and argument by nongovernmental organizations and requiring environmental expertise on panels might broaden the perspective, but the judgments required could be difficult for any panel to make on its own. If (as some have proposed) new international coordinating mechanisms are set up to deal with environmental matters, the coordinating body might be authorized to work with GATT on guidelines helpful in dispute resolution; another possibility would be for GATT to work more closely with existing international scientific and environmental organizations.

GATT could also consult with such other international organizations to consider trade/environment issues before they ripen into disputes. In particular, trade provisions of proposed international environmental agreements could be discussed. Potential conflicts could be avoided by changing trade provisions, changing (or making exceptions to) GATT's rules, or both, depending on what tradeoffs seem reasonable among the environmental, economic, and other interests at stake.

Road Map to the Rest of This Paper

Chapter 2 highlights several controversies, and discusses the roles of several international bodies and the effort by the U.S. executive branch to develop positions on trade/environment issues. Chapter 3 discusses the limited state of knowledge about the positive and negative environmental effects of liberalizing trade. It also examines situations in which governments have used trade measures to achieve environmental ends. The chapter further reviews the debate about the respective environmental responsibilities of the developed countries (often referred to as the "North") and the developing countries (the "South").

Chapter 4 examines the effects of environmental regulations on trade, including trade as it relates to U.S. manufacturing competitiveness. First, national environmental measures in some cases can act as trade barriers, raising the question about the appropriate limits of national regulations. The chapter discusses GATT's current approach, as well as proposed GATT amendments. Second, if one country has stricter environmental standards than a second, the first country's manufacturing firms might suffer a competitive disadvantage due to higher environmental compliance costs. It is hard to determine the extent to which U.S. firms suffer such a disadvantage; the issue is discussed briefly in chapter 4 and somewhat more fully in appendix E. On the assumption that a substantial disadvantage might exist in at least some cases, the chapter discusses the effectiveness of trade measures as a response. The appropriateness of trade measures depends in part on what alternative *domestic* means exist to help U.S. firms meet environmental requirements, so as to ameliorate any competitive disadvantage. This will be addressed more fully in the final report of this assessment. Chapter 5 discusses possible international and U.S. government approaches for coordinating trade and environmental policies.[24]

[24] This background paper deals with trade in environmentally regulated products, and how environmental regulation can affect that trade. Environmental regulation also affects another kind of trade: trade in environmental goods and services (EGS), that is, technologies and services to protect the environment. Indeed, environmental regulation creates demand for EGS. Appendix D discusses the world EGS market and the U.S. industry's place in it. The final report of this assessment will examine trade in EGS in more detail.

Chapter 2

Issues and Institutional Players

Chapter 2
Issues and Institutional Players

Several recent developments, highlighted briefly below, suggest the broad range of trade/environrnent issues now arising. Some involve the General Agreement on Tariffs and Trade (GATT), which provides a framework of rules for most of the world's trade. Environment/trade issues also have emerged in debate about a possible North American Free Trade Agreement (NAFTA), now under negotiation between the United States and Canada, which already have a free trade agreement, and Mexico. Similar environmental issues might emerge if U.S. efforts to liberalize trade are extended to other developing countries in the Western Hemisphere. The chapter also discusses policy formulation efforts in this country and in international forums, including GATT, the Organisation for Economic Co-operation and Development (OECD), and the United Nations. (Chapter 5 further discusses institutional issues).

THE CONTEXT

Issues at GATT

In September 1991, a three-member GATT dispute resolution panel stated that a U.S. ban on imports of tuna violated GATT's rules of international trade.[1] (The panel's reasoning is analyzed in ch. 3.) The dispute arose when Mexico contested the ban, which was imposed under the U.S. Marine Mammal Protection Act. This law seeks (among other things) to limit incidental killing or serious injury to dolphins and other marine mammals due to commercial fishing operations.[2] The U.S. Government had put the ban into effect only after it was compelled to do so by a court order. Mexico and the United States have asked the GATT Council to postpone its consideration of the panel's report-a necessary step before the report can be adopted as an official GATT decision—while the two countries work to settle the dispute themselves.

The issue is not settled, however. In January 1992, again under court order, the U.S. Government imposed a ban on tuna from several 'intermediary' nations that do not engage in the objected-to fishing practice themselves but might be reselling tuna caught by a nation that does.[3] This has resulted in political pressure for the GAIT Council to adopt the panel's report despite the request of Mexico and the United States.[4] Also, any of the intermediary nations could file its own complaint. In mid-March, the European Community (EC), whose member nations France and Italy were affected by the intermediary ban, requested consultations with the United States. This is the first step toward filing a formal complaint to invoke GATT's dispute resolution process.

The United States could, under GATT's current practice, block the GATT Council's adoption of the panel's report in the Mexican case and of panel reports in any subsequent cases; it also could refuse to change its law if adverse rulings were adopted by the Council and could block the imposition of any retaliatory penalties proposed to the GATT Council by the aggrieved country or countries. However, the United States would face political pressure not to resist in these ways. Amendments to GATT under consideration would remove the right to block adverse rulings, and would make ignoring a ruling potentially more costly. (See the annex to this chapter.)

Following announcement of the GATT panel's report in the tuna/dolphin case, Congress held hearings on the report's implications and on possible environmental reforms in GATT. (See app. C.) In March 1992, the Administration proposed that Congress temporarily lift the ban on a nation's tuna

1 "United States—Restrictions on Imports of Tuna," Report of the Panel, GATT Doc. No. DS21/R, Sept. 3, 1991. The panel's report was submitted to the contesting parties on Aug. 16, 1991. The report was submitted to GATT member countries on Sept. 3, 1991 and was made public on Sept. 16, 1991 (though part of the report was published in the Sept. 6, 1991 issue of *Inside U.S. Trade*).

2 The Marine Mammal Protection Act of 1972, Public Law 92-522, as amended, notably by Public Laws 10G711 and 101-627. The law is codified in part at 16 U.S.C. 1361ff. Implementing regulations are found at 50 C.F.R. Part 216; regulations on commercial fishing appear at 50 C.F.R. 216.24.

3 As discussed in "U.S. District Court Places Secondary Ban on Imports of Tuna, Tuna Products," *Inside U.S. Trade*, vol. 10, No. 5, Jan. 31, 1992, pp. 13-14. This article includes text of court orders, dated Jan. 9 and Jan. 27, 1991, in the case of *Earth Island Institute v. Mosbacher, Secretary of Commerce*, *in the* U.S. District Court for the Northern District of California.

4 See, e.g., "EC Will Push for Adoption of GATT Panel Report on Tuna-Dolphin Dispute," *Inside U.S. Trade*, vol. 10, No. 6, Feb. 7, 1992, p. 21; Johu Maggs, "EC Will Protest US Tuna Embargo Against 20 Nations," *The Journal of Commerce*, Feb. 4, 1992, p. 3A.

if it committed to a 5-year moratorium starting March 1, 1994 on any dolphin kills, and to reduction in the absolute number of dolphin kills in the interim (though no reduction targets would be set). The Administration reported that Mexico and Venezuela were prepared to make such commitments.[5]

The potential for conflict between trade measures used in national environmental policies and GATT might increase soon. Wide-ranging changes to many aspects of GATT are being debated in the Uruguay Round.[6] Proposed changes include more attention to nontariff barriers, as well as expansion of GATT discipline for agriculture and introduction of GATT rules into areas not previously covered (such as intellectual property and services).[7] These discussions, which began in 1986, have stalled several times and a successful conclusion is not a certainty. However, environment was not a substantial consideration in drafting proposed changes, and the effect of some changes under discussion in early 1992 could be to *increase the* conflicts between GATT and environmental measures (see discussion later in this chapter and chs. 3 and 4).

The relationship between GATT and international environmental agreements is another concern. According to GATT, trade measures are included in 17 multilateral environmental agreements. These agreements deal with such problems as stratospheric ozone depletion, endangered species, and hazardous waste. (As shown in table 2-1, the greatest number have to do with conservation of plant and animal species.) There is the likelihood of more multilateral environmental agreements in the future, although these will not necessarily have trade provisions. For example, there has been speculation that trade measures might eventually be made part of a future international agreement to limit greenhouse gas emissions that may contribute to global warming. Such an agreement might contain provisions that tax imports of products based on greenhouse gas emissions accompanying their manufacture, or altogether ban imports of some products from nonsignatories;

Table 2-l—Multilateral Environmental Agreements by Subject, 1933-90 **(number of agreements)**

	Total	With trade provisions
Marine pollution	41	0
Marine fishing and whaling	25	0
Protection of fauna and flora	19	10
Nuclear and air pollution	13	1
Antarctica	6	0
Phytosanitary regulation	5	4
Locust control	4	0
Boundary waters	4	0
Animal cruelty	3	1
Hazardous wastes	1	1
Other	6	0
Total	127	17

SOURCE: General Agreement on Tariffs and Trade, 1992.

if such provisions were adopted, they too might be challenged under GATT. At present, however, discussions about a possible framework agreement for global warming stop short of such measures.

Several issues have emerged concerning the use of trade provisions in multilateral environmental agreements. One is their consistency with GATT. Although various GATT statements seem to favor multilateral action with respect to the environment, the trade provisions in international environmental agreements have no special status in GATT. There is thus a possibility that someday a GATT member will successfully challenge a trade measure taken by another GATT member pursuant to a multilateral agreement. Also, the possibility of GAIT' conflicts might discourage inclusion of trade provisions that could make environmental agreements more effective or enforceable. From both an environmental viewpoint and from a trade viewpoint, there is a need to find ways to minimize frictions between these two concerns, both of which are important for world welfare. (Chapter 3 discusses some factors that might be considered, using as illustration the Montreal Protocol on Substances That Deplete the Ozone Layer.[8] The Protocol commits signatories to phase out the use of substances, such as certain chlo-

[5] Statement of Curtis Bohlen, Assistant Secretary of State for Oceans, International Environmental, and Scientific Affairs, testimony at hearings before the House Committee on Merchant Marine and Fisheries, Mar. 18, 1992.

[6] Revisions to GATT's general rules and specific schedules are considered in negotiating "rounds." The Uruguay Round, named for the site of its initial meeting, started in 1986 and is ongoing.

[7] GATT's rules and the concepts of nontariff barriers are discussed in the GATT section below and in the annex to this chapter.

[8] The Montreal Protocol was signed in September 1987 and was amended by the London Revisions in June 1990. The Montreal Protocol is based on the March 1985 Vienna Convention for the Protection of the Ozone Layer. The Protocol, discussed in greater detail inch. 3, entered into force on Jan. 9, 1989. As of mid-March 1992, the London revisions were not yet in force as only 19 of the needed 20 countries had ratified it. The revisions will be in force 90 days after the notification of the 20th ratification.

rofluorocarbons and halons, that deplete the Earth's ozone layer. Measures are in effect to limit trade in such substances. Also, Protocol signatories are studying the feasibility of a ban applied to nonmember countries against imports of products made with a process using such chemicals.)[9]

The North American Free Trade Agreement

Another contentious trade/environment interaction is the negotiating process underway for a North American Free Trade Agreement among Mexico, Canada, and the United States. Free trade would likely increase economic activity in Mexico and in the border area of the United States; unless adequate environmental safeguards are put in place, the additional growth could exacerbate the border region's already serious environmental problems. Concern also exists that U.S. trade negotiators might agree to provisions that would weaken U.S. environmental standards.

These concerns led Congress to caution the Administration that it needed to address environmental issues (as well as labor issues) while negotiating a NAFTA. The Administration, in seeking a congressional extension of "fast "track negotiating authority" in May 1991, pledged to maintain the integrity of the U.S. regulatory process and to work cooperatively with Mexico to promote environmental improvements.[10] Under this arrangement, most environmental issues are under discussion on a "parallel' track separate from the trade negotiation itself. Some in Congress remain concerned whether the environment is receiving enough priority, however, and there have been hearings and further cautionary communications to the Administration about the need to adequately address U. S.-Mexico environmental issues.[11]

The Administration's view is that freer trade and investment will generate the resources Mexico needs for environmental protection. Since 1988, Mexico has had a law that promises relatively strong environmental protection. However, the country has limited resources for enforcement, and only recently began to take much action against violators. In February 1992, the U.S. Environmental Protection Agency (EPA) and its Mexican counterpart, SEDUE, together issued a border environmental plan,[12] and the White House released an interagency review of U.S.-Mexico environmental issues coordinated by the U.S. Trade Representative (USTR).[13] Mexico has indicated plans to spend $466 million to improve the border environment in the next 3 years; President Bush's proposed border cleanup effort for fiscal year 1993 is $201 million. These sums far exceed what was previously available, although the U.S. contribution, relative to gross national product (GNP), is proportionately much less than Mexico's.[14]

Competitiveness Concerns

Questions about Mexico's commitment to environmental protection have taken on added importance because of the possibility that freer trade between the United States and Mexico might prompt some U.S. firms in industries with high environmental compliance costs to move operations to Mexico, directly costing U.S. jobs. Over the years, Mexico's border area has attracted many U.S. firms, drawn by duty-free export processing zones, low labor costs, and close proximity to U.S markets. Some of these so called "maquiladora" factories may have relocated partly to escape higher U.S. environmental regulations. (See app. E.) Another concern is that firms manufacturing in the United States could suffer a competitive disadvantage from imports manufactured by firms in Mexico facing lower environmental costs. Environmental regulations as a factor in location decisions and trade and competitiveness in general (not limited to the U.S.-Mexico context) are discussed in appendix E;

9 Ibid., Article 4, paragraph 4 *bis.* The first determination of feasibility of such a ban (for substances listed in the Montreal Protocol prior to its amendment by the London Convention) is to be made by Jan. 1, 1994.

10 "Response of the Administration t. Issues Raised in Connection With the Negotiation of a North American Free Trade Agreement," transmitted to the Congress by the President on May 1, 1991, table 4, pp. 9-10.

11 The House Committee on Small Business, Subcommittee on Regulation, Business Opportunities, and Energy held hearings on Sept. 30, 1991.

12 Integrated Environmental Plan for the Mexico-U.S. Border Area (First Stage, 1992-1994), February 1992. A draft version of this plan was issued Aug. 1, 1991, followed by joint hearings held by EPA and SEDUE on both sides of the border.

13 USTR coordinated an interagency task force review of U.S.-Mexico environmental issues. A draft review was issued October 1991; a final review was released by the White House on Feb. 25, 1992.

14 One source suggests that U.S. funding on the level of $400 million per year might be needed. See *U.S. Mexico* **Free** *Trade Reporter,* Jan. 27, 1992, p. 7; some border area organizations reportedly seek a U.S. contribution several times this size. See "Down Mexico Way," *The Economist,* Apr. 18, 1992, p. 4.

factors affecting location of U.S. firms in Mexico will be discussed in greater detail in another OTA study, expected to be issued in the summer of 1992, on U.S. trade, technology, and investment with Mexico.

The NAFTA discussions are unusual in that free trade is being proposed between a developed country and a developing country that share a common border. The United States and Mexico have only limited adjustment mechanisms in place to address problems arising from their different environmental, labor, and social policies and commitments. This contrasts strongly with the European Community (EC), where full economic integration between the very wealthy nations of northern Europe and the less wealthy EC member states has been preceded by years of efforts to adjust for differences among national policies. EC-wide rules aim to require all members to meet certain minimum environmental standards, although implementation has been spotty. (See box 2-A.) While NAFTA's goals stop well short of economic integration, the differences between U.S. and Mexican policies are generally more pronounced than those between the wealthy and less wealthy countries of the European Community.

Such adjustment issues and concerns also apply to U.S. trade with other developing nations, particularly as framework agreements for further trade discussions are signed between the United States and the developing countries of Latin America.[15] In general, there is concern that weaker environmental regimes abroad can give firms manufacturing abroad a cost advantage over firms manufacturing in the United States. Past studies, many conducted with data from the 1970s, do not provide definitive conclusions, in part because the costs and benefits of environmental regulation are difficult to accurately measure. On the whole, these studies suggest that U.S. environmental regulation has not contributed in a major way to relocation of U.S. industry overseas or to the deterioration of the U.S. trade posture. However, for a few sectors with high environmental compliance costs, the effects may be greater and contribute to worsened trade and investment performance. Few if any of these studies assumed free trade agreements between the United States and other nations. Moreover, U.S. environmental standards are in many cases higher today than they were a decade or more ago, and the competitive climate is tougher. (See ch. 4 and app. E for a discussion of the impact of environmental regulations on trade and competitiveness.)

Some bills introduced in the 102d Congress propose to negate any competitive advantage from other countries' weaker standards by levying countervailing duties or other taxes on products imported in these circumstances.[16]

Competitiveness concerns also surfaced in the 1990 amendments to the Clean Air Act. Congress directed the President, by May 15, 1992, to:

> identify and evaluat[e] the economic effects of [the differences between U.S. and foreign] air quality standards and controls, [and to propose a] strategy for addressing such economic effects through trade consultations and negotiations. [The strategy] shall include recommended options (such as the harmonization of standards and trade adjustment measures) for reducing or eliminating competitive disadvantages caused by differences in standards and controls. 17

Other Issues

Still other trade/environment or closely related issues have come to the fore. Domestic health, safety, and environmental regulations are sometimes challenged as unduly impeding trade. Examples (described in ch. 4 and app. A) are a Danish requirement for return of beer and soft drink bottles that appears to put foreign vendors at a disadvantage, and a ban by the EC on imports of U.S. beef from cattle given certain hormones (see app A). Also, domestic laws regarding "ecolabeling," or labeling of products with information on how much their production, use, and/or disposal affects the environment, are sometimes challenged as unduly impeding imports. In the GATT tuna/dolphin case, Mexico

15 Bilateral or multilateral agreements have been signed with 14 Central or South American countries by the end of 1991, in conjunction with President Bush's Enterprise for the America's Initiative. The Initiative proposes a U.S. strategy for helping Latin American countries deal with their economic problems through measures for debt reduction, trade liberalization and investment incentives. Part of the proposal seeks authorization from Congress to permit interest payments on reduced debt obligations to be used for environmental and natural resource purposes.

16 S. 984 would treat lesser foreign pollution controls on manufacturers as a subsidy, so that the U.S. laws on countervailing duties would apply. S. 1965 would impose import fees on goods made abroad by processes that do not meet U.S. water pollution control standards. See app. B for more discussion.

17 Public Law 101-549, sec. 811(b). As discussed in app. E, the 1972 Federal Water Pollution Control Act Amendments had similar requirements.

also challenged the United States' Dolphin Protection Consumer Information Act,[18] which regulates the use of the term "dolphin-safe" on tuna fish cans. In this instance, GATT's dispute resolution panel reported that it found the law to be consistent with GATT.[19]

Although not addressed in detail in this background paper, there are many other important trade and environment issues under discussion in various contexts. Some international environmental agreements are *themselves* trade agreements. For example, the Basel Convention on the Control of the Transboundary Movement of Hazardous Wastes and Their Disposal, signed in March 1989 and expected to come into effect in mid-1992, would require informed consent from destination and transit countries. Although the United States has signed the convention, formal consent by the U.S. Senate has yet to occur. This has led to concern that U.S. negotiators will not be at the table when rules for implementing the agreement are worked out. Another example of an environmental trade agreement is the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which entered into force in 1975. There is continuing discussion about what species should be covered by the convention, as well as what protected status should be given.

INSTITUTIONAL PLAYERS

There appears to be growing recognition that trade and environmental policy, which until recently had been made in isolation of each other, must to some extent be made together, or at least coordinated. In the United States, the EC, and some other countries, trade/environment disputes and issues are now receiving more attention. Interaction between the U.S. trade community (trade officials and the private sector) and the environmental community (environmental officials and environmental advocacy organizations) is more common than before. However, progress has been slow, partly because the issues are complex, and many viewpoints exist. At least a dozen Federal departments and agencies have responsibilities relevant to trade and environmental policies.

At the international level (see table 2-2), the Organisation for Economic Co-operation and Development so far has made the most systematic effort to address interactions between trade and environmental issues, beginning with the 1972 publication of guiding principles concerning trade and environment (discussed below). Its present discussions are aimed at producing a new set of guiding principles, if possible in time for approval at OECD's June 1993 Ministerial meeting. OECD's process has involved *both the trade* agencies *and the* environment agencies of its member states to a degree unmatched by other international bodies. However, it has limited capacity to set and enforce policy among its members, which consist of 24 countries from the developed world, and the EC. Moreover, the developing world has no representation in OECD (although Mexico and three Eastern European countries have been observing the trade and environment meetings). Still, new OECD principles, if judged sound by developing countries, could be used as a basis for amending GATT and for new institutional approaches to reconcile trade and environment concerns. (Developing country issues are discussed further inch. 3.)

GATT, which has both developing and developed countries as members, has been slow to take up environmental questions. Not surprisingly, GATT's perspective on trade/environment questions tends to focus on the effects of environmental regulations on trade. Developing countries are wary that disguised protectionism (protectionism justified on environmental grounds) could be the end result if some environmental issues are taken up at GATT. GATT officials have alluded to the upcoming United Nations Conference on Environment and Development (UNCED) as an appropriate venue for addressing environmental priorities. Trade/environment interactions are pertinent to several issues on the agenda for UNCED.

Several other international agencies, including the World Bank and the United Nations Conference on Trade and Development, have been examining environment and trade interactions. A number of nongovernmental organizations (NGOs) including environmental organizations and business groups are actively addressing trade/environrnent issues. Among business organizations, the International

18 Public Law 101-627, sec. 901, codified in part at 16 U.S.C. 1685.

19 "United States—Restrictions on Imports of Tuna," Report of the Panel, op. cit., paragraphs 5.41-5.44.

Box 2-A—The European Community and TradelEnvironment Issues

The European Community (EC) so far has needed to address trade/environment interactions more directly than the rest of the world. For trade among EC member countries, the EC's Treaty of Rome and subsequent legislation and regulation supplant and go further than GATT in promoting liberal trade. The EC, as a customs union, has a common external tariff, has eliminated tariffs among its members, and has reduced nontariff barriers. To complete unification of its internal market, the EC is harmonizing health, safety, and environmental regulations so as to reduce competitive imbalances among EC countries and to keep regulations from acting as trade barriers. One result has been more EC-wide environmental regulation.

While the EC has been an innovator in resolving conflicts in trade, industry, and environmental policy, its approaches often are not easy to transfer to groups of nations that act more independently, or where the differences in development and national wealth are much greater. However, the EC's progress suggests that other countries might benefit from more coordinated efforts and a stronger institutional framework to deal with trade/environment interactions.

The Development of EC Environmental Regulation

In the early 1970s, the EC launched an "environmental action programme" that paved the way for future environmental initiatives. Since 1973, four environmental action plans have been adopted; the fifth is being drafted. The EC attempts to regulate water, air, chemicals, site safety, environmental assessments, waste, and wildlife.[1]

The 1987 Single European Act marked another milestone in the evolution of the EC's role in environmental protection.[2] The EC now works to harmonize regulations to meet environmental objectives as well as to eliminate technical barriers to trade. The act states that the EC has the power to make environmental laws when environmental protection can be achieved better through EC-wide action than through individual country action. Although the EC Council of Ministers agreed in 1990 to create a European Environment Agency (EEA), the agency has yet to be set up.[3] Initially EEA will collect data and may assist in the monitoring of compliance.

A major environmental achievement of the Maastricht Summit (a December 1991 meeting aimed at promoting close political union within the EC) was agreement for a Cohesion Fund. Other EC funds are slated to provide $1.44 billion between 1989 and 1993 for environmental projects in less developed regions.[4] The Cohesion Fund, which is supposed to be established before the end of 1993, will provide more help to the EC's poorer members (Ireland, Greece, Portugal, and Spain) for environmental and infrastructural improvements. Details of the fund still have to be negotiated. The Maastricht Summit also made it harder for countries to veto EC-wide environmental regulation in some cases, but not in as many as the Environmental Commissioner had hoped for.[5]

General EC Environmental Regulation

The EC has adopted nearly 300 directives and regulations specifically concerned with the environment.[6] The EC has also taken the lead in considering measures to reduce greenhouse gas emissions. The EC Commission informally proposed to the Council of Ministers that legislation be drafted to limit carbon dioxide emissions by various means, including an energy tax worth the equivalent of $10 per barrel of oil by the year 2000.[7] Half of the tax would be a general levy on energy generation; the other half would be a tax on fuel's carbon content. Such a tax could put energy-intensive EC industries at a substantial disadvantage relative to foreign competitors. To address this problem, the Commission proposed to partially or totally exempt energy-intensive industries from the tax; so far, it has not proposed levying an equivalent tax on imports as an alternative. The Council of Ministers has asked the Commission to prepare draft legislation.

EC environmental regulation has tended to be harmonized at relatively stringent levels.[8] Also, members may regulate at a more stringent level than is established at the EC level, but not lower.[9] Higher levels of regulation in individual nations are permitted as long as they are taken for noneconomic, environmental reasons. For regulation of polluting processes (rather than of products), the regulation's motivation is usually not an issue. Countries with weak regulations have been given time to adjust their standards upward to the harmonized level and are provided with technical assistance. The Council will grant some nations temporary exceptions or financial support from the Cohesion Fund.

Even with assistance it has been difficult to implement EC-wide regulations. EC members have been slow to implement, or have even ignored, EC directives[10]. Part of the explanation may be the limited experience some EC members have with environmental regulation. Also, it can be difficult to change existing national laws to conform with EC requirements. The EC! has limited enforcement mechanisms other than public pressure. The Commission tries to persuade transgressors to comply. It can bring a case to European Court of Justice (ECJ). But these mechanisms are not always adequate.

Harmonization of Product Regulations and Standards

The EC has focused much attention on the harmonization of product standards, many of them related to environmental protection. One reason for this is that product regulations can be abused to create barriers to imports.

Prior to 1985, the EC attempted to harmonize technical regulations for products at a very specific and detailed level. It sometimes took several years to work out disagreements between countries about a single product regulation. By the time a regulation was passed, it could be obsolete. The EC now focuses on broader performance standards. This approach ensures a certain level of environmental protection, imposes similar costs on all manufacturers within the EC, and prevents different national requirements from impeding trade.

Where national regulations still differ, the EC is grappling with the question of how to handle regulations with more adverse effect on trade than is justified (see ch. 3). If a member country suspects that environmental policies are a guise for protectionism, it can ask the Commission to investigate. If the Commission cannot negotiate a solution, the dispute can be brought to the European Court of Justice.

ECJ may decide that the country is imposing an unjustified technical barrier to trade, and require the country to permit foreign imports. However, the Court may decide in a given case that the burden put on trade is justified by the national regulation's contribution to environmental goals. In this case the country could reject nonconforming products. This happened with the Danish bottle bill, where the Court upheld the requirement under Danish law that beer and soft drinks be sold in returnable containers, even though that requirement restricted trade (see app. A). ECJ will likely see more such cases.

In cases where different regulations produce a trade dispute, the EC may decide to regulate the product at the EC level and take action to harmonize regulations. In some cases the EC appears to be trying to adopt the stronger standard EC-wide. For example, after Germany promulgated national laws regarding packaging that raised concerns over possible barriers to trade, the EC is now drafting EC-wide packaging rules.[11]

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1 For an overview of EC environmental policy formulation, adoption, and implementation see Cameron Keyes, The *European Community and Environmental Policy: An Introduction for Americans* (Baltimore, MD: World Wildlife Fund Publications 1991).

2 Nigel Haigh and Konrad von Moltke, "The European Community: /environmental Force," *EPA Journal*, vol. 16, No. 4, July/August, 1990.

3 The United Kingdom, whose turn it will be to assume Presidency of the EC in the later half of 1992, As Promised to make the launching of the new agency a priority. *International Environment Reporter*, "Creation of EC Environment Agency Given Top Priority by U.K. Minister," Jan. 29, 1992, p. 32.

4 Office for Official publications of the European Communities, "Environmental Policy in the European Community," 4th Ed., March 1990, p. 25. These funds are primarily channeled through the EC's structural funds: the European Social Fund, the European Agricultural Fund, and the European Regional Development Fund.

5 "EC Commissioner Says Maastricht Summit Fell Short in Environmental Policy Areas," *International Environment Reporter*, Dec. 18, 1991, p. 670.

6 Keyes, *The European Community—Environmental Policy*, op. cit.

7 "A Community Strategy t. Limit Carbon Dioxide Emissions and To Improve Energy Efficiency," sec(91) 1744 final, released Oct. 14, 1991.

8 Charles S. Pearson and Robert Repetto, "Reconciling Trade and the Environment: The Next Steps," paper prepared for the Trade and Environment Committee of the Environmental Protection Agency's National Advisory Council on Environmental Policy and Technology, December 1991, pp. 11-12.

9 The Council of the European Communities, The Single European Act, op. cit., Title VII, Article 130 T, 1986.

10 As of early 1990 the European Commission had identified 303 cases in which member nations had incorrectly or incompletely implemented EC environmental directives. Hilary F. French, "The EC: Environmental Proving Ground," *World Watch*, November/December, 1991, pp. 26-33. See also Environmental Commissioner Ripa di Meana in 1990, as quoted in Keyes, *The European Community and Environmental Policy*, op. cit., p. 7.

11 "Final Draft Being Readied of Plan to Curb Packaging Waste, Officials Say. " *International Environmental Reporter*, vol. 15, *No. 3.*, Feb. 12, 1992, p. 73.

Table 2-2 -Selected International Organizations Concerned With Trade, Development, and Environmental Matters

General Agreement on Tariffs and Trade (GATT
Uruguay Round negotiations
Working Group on Environmental Measures and International Trade
Working Group on the Export of Domestically Prohibited Goods and Other Hazardous Substances
GAIT Secretariat
Organisation for Economic Co-operation and Development (OECD)
Joint sessions of Trade and Environment Committees
Joint work by Trade and Environment Directorates
United Nations (UN)
United Nations Environment Program (UNEP)
United Nations Development Program (UNDP)
United Nations Industrial Development Organization (UNIDO)
United Nations Conference on Trade and Development (UNCTAD)
United Nations Conference on Environment and Development (UNCED)
World Bank

SOURCE: Office of Technology Assessment, 1992.

Chamber of Commerce has articulated eight policy principles for addressing trade and environment questions.[20] Another organization, the Business Council for Sustainable Development, is working to articulate industry perspectives as a contribution to UNCED.

The following pages describe the status of trade and environment activities at GATT, OECD, and the United Nations. U.S. executive branch efforts to formulate policy on trade and environmental issues are also highlighted. (The EC's experience and perspective are discussed in box 2-A.)

General Agreement on Tariffs and Trade [21]

Established in 1947, GATT provides a framework of rules for international trade among over 100 member nations that account for the great majority of world trade. GATT's purpose is to promote liberal trade (trade as free as possible) as a means to promote economic growth. According to the theory of comparative advantage, trade benefits all participating nations because it permits each nation to specialize in what it can do better relative to its neighbors. While this theory has many qualifications in practice, its basic message is considered sound, and trade is credited partly for the world's economic growth since World War 11.[22]

The acronym "GATT" denotes both an international agreement and an international institution. As an institution, GATT is weak. For example, its dispute resolution powers are limited (see the annex to this chapter). Also, GATT's text did not explicitly create an international organization. Instead of providing for a general assembly or standing committees, it merely refers to the 'contracting parties' acting in concert. A stronger institution, called the International Trade Organization (ITO), was proposed under United Nations auspices in 1946. But Congress did not approve the proposal, and other countries declined to form an ITO without the United States. Instead, the weaker, less inclusive GATT, initially intended as a temporary transition to an ITO, has been in effect for 45 years.[23] Nevertheless, GATT has achieved a great deal.

20 The Commission on International Trade Policy, Policy and Programme Department, "International Trade and the Environment: Principles for Policy and Implementation" Document No. 103/160 Rev., Oct. 3, 1991 (adopted by the 67th Session of the International Chamber of Commerce Executive Committee, Oct. 1, 1991). The proposed guidelines call for basing environmental regulations on "sound science" and "adequate understanding of environmental conditions, " use of performance standards, and use of market-oriented measures to encourage innovation. Among other things, the guidelines also call for nondiscriminatory national enforcement of regulations, and mechanisms to resolve disputes arising from environmental regulations.

21 GATT's structure and operation are described in John H. Jackson, *The World Trading System: Law and Policy of International Relations* (Cambridge, MA: MIT Press, 1989).

22 For further discussion of the theory of comparative advantage, qualifications and refinements to that theory, and implications for public policy, See U.S. Congress, Office of Technology Assessment, *Competing Economies: America, Europe, and the Pacific Rim,* OTA-ITE-498 (Washington, DC: U.S. Government Printing Office, October 1991), pp. 118-124.

23 GATT's history is described in Jackson, op. cit., pp. 27-57. GATT's institutional weaknesses and approaches for fixing them are discussed in John H. Jackson, *Restructuring the GATT System (New* York, NY: Council on Foreign Relations Press, 1990).

Under GATT'S discipline,[24] import tariffs (or taxes levied on imports) have been lowered through several rounds of tariff reductions.[25] Use of quotas (restrictions on the amount of a particular good that could be imported or exported) has been curtailed in principle, although there are some exceptions. Other kinds of "nontariff barriers" have been harder to address, in part because they often involve regulations that serve legitimate nontrade functions such as environmental protection, health, and safety.[26]

Many Uruguay Round participants realize that GATT needs to address its effect on environment as well as the impact of environmental policy for trade. In particular, the tuna/dolphin case resulting from the Marine Mammal Protection Act has highlighted the fact that certain GATT provisions could conflict with measures taken for environmental protection. Some GATT provisions pertinent to environmental concerns are described in the annex to this chapter. Some who believe it impractical or unwise to inject environmental discussions into the heavily burdened Uruguay Round have stated that environment should be a top priority of a post-Uruguay GATT.

GATT has taken some steps, however. The GATT Council (the body of member countries' permanent representatives) debated trade/environment issues in May 1991. According to the GATT Secretariat's description of the debate,[27] the members agreed on several points (e.g., GATT's proper role was to promote liberal trade and not to set environmental policy or standards; international environmental agreements were the best way to address international environmental problems; trade measures should be used only as necessary and not as a substitute for direct environmental policies; and "trade measures will not, in general, pose practical difficulties under the GATT as long as they reflect the necessary degree[28] of multilateral consensus' '). The GATT Secretariat also reported disagreement over such questions as whether GATT should adopt a policy (such as the Polluter Pays Principle[29]) that environmental costs should be internalized; how GATT should treat issues concerning processes and production methods; how GATT should address possible conflicts with trade measures in environmental agreements; and whether GATT's rules properly balance trade and environmental interests.

GATT has activated its Group on Environmental Measures and International Trade, at the instigation of the European Free Trade Association. This working group was created in 1971, shortly before the first United Nations conference on the environment in Stockholm, but was never convened until the fall of 1991. It is considering:

- trade provisions contained in existing multilateral environmental agreements (e.g., the Montreal Protocol, CITES, and the Basel Convention) vis-a-vis GATT principles and provisions;
- multilateral transparency (i.e., openness and predictability) of national environmental regulations likely to have trade effects; and
- trade effects of new packaging and labeling requirements aimed at protecting the environment.[30]

Another GATT group has been working on the export of domestically prohibited goods and other hazardous substances.[31] The chairman of the group has presented the proposed text of a draft Decision on Products Banned or Severely Restricted in the

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24 GATT provides an important check on individual nations' behavior. Sometimes a nation could benefit itself at Other nations' expense by erecting trade barriers, especially barriers to the importation of goods. Barriers erected by one nation could provoke retaliatory barriers by other nations, making all nations worse off than they would be without the barriers. (GATT does not now cover services, but amendments under consideration in the Uruguay Round would change that.)

25 Jackson, *The World Trading System,* Op. cit., p.53.

26 E-pies of nontariff barriers in other countries, and U.S. attempts to remove them, are given in *Competing Economies*, op. cit., pp. 125-138.

27 GATT Secretariat, "GATT Activity on Trade and the Environment" mimeo, n.d., n.p.

28 This could refer t. GATT's waiver process, which Mows waivers of GATT requirements if approved by a majority of GATT members and two-thirds of those voting.

29 The Polluter Pays Principle is discussed in the section of this chapter on the Organisation for Economic Co-operation and Development.

30 Richard Eglin, Counselor, Technical Barriers to Trade and Environment Division, GATT Secretariat, personal communication, Mar. 2, 1992; see also Focus (GAIT Newsletter), No. 85, October 1991, p. 1.

31 This group was setup in July 1989, following several years of discussions in GATT's regular work program. Efforts by several developing countries to include the subject in the Uruguay Round discussions did not carry. For a description, see General Agreement on Tariffs and Trade, ***Trade and the Environment: Factual Note by the GATT Secretariat*** (Geneva: General Agreement on Tariffs and Trade, February 1992).

Domestic Market.[32] The proposed text would establish notification procedures for export of all products domestically banned or severely restricted because of a determination that the product would have a serious, direct danger to human, animal or plant life or the environment in its territory. While the text has been generally accepted by most members, the working group has yet to complete its task, as one member, the United States, has suggested modifications to the draft text. The United States wants to put certain products outside the scope of the decision, and also wants the instrument to be a code (to be acceded to by individual countries, see the annex to this chapter) rather than a decision applying to all contracting parties.[33]

In February, 1992, the GATT Secretariat (which cannot speak for GATT's membership) released a trade and environment analysis put forth for consideration by UNCED.[34]

The report offers several suggestions for making environmental policy consistent with GATT. It suggests that it is "no longer possible for a country to create an appropriate environmental policy entirely on its own." It calls for "multilateral rules to guide countries in formulating their own environmental policies and in responding to domestic complaints about the impact of their own and other countries' policies on international competitiveness. It also indicates that a dispute settlement procedure is needed to back up the rules (if current procedures are not adequate). However, the report stops short of suggesting a specific institution to perform this function.

The GATT report also strongly decried unilateral use of trade sanctions by individual countries to "dictate changes in environmental policies of other nations. Instead, it says, a multilateral solution should be sought. The GATT report has less to say about the possibility that trade provisions of an international environmental agreement like the Montreal Protocol might be found inconsistent with GATT. It does note, however:

> [F]rom an institutional standpoint, there is a need for a careful examination of existing rules to be certain they do not hinder multilateral efforts to deal with environmental problems.

The report also notes that broad-based multilateral agreements could have enough support to get a GATT waiver (requiring two-thirds of those voting and a majority of the total GATT membership).

Environmental Issues and the Dunkel Draft

Although environment has not been a focus, the Uruguay Round contains measures that could affect the environment. In the years since the Round began, major changes to GATT were proposed and debated, but by late 1991 negotiations were at an impasse. To break this impasse, GATT's Director General Arthur Dunkel submitted a' 'draft final' set of amendments for consideration (called the Dunkel draft) in December 1991.[35] In January, 1992 GATT's members agreed to use the Dunkel draft as a framework for negotiations.

The Dunkel draft, if adopted, would address some patterns of production and trade in ways that could be environmentally preferable to the current regime. For example, the draft would limit the use of agricultural subsidies, which contribute to overuse of pesticides and other activities that tend to cause environmental problems in some developed countries (see ch. 3).[36] The draft would also exempt certain subsidies for land conservation and agricultural R&D (including environmental R&D related to agriculture).[37]

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32 (4 Nigeria Aims to Break Deadlock in Domestically-prohibited Products Talks'', *Inside U.S. Trade*, Aug. 16, 1991. This article contains the c h - 's report, dated July 2, 1991, which includes the proposed text and the United States' proposed modifications.

33 Ibid.

34 GATT Secretariat, ''Trade and Environment,'' advance copy, released Feb. 12, 1992. The analysis will be published as part of the GATT Secretariat's annual report *International Trade*.

35 GATT Trade Negotiations *committee, ''DraftFinal* Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations," GATT Document MTN.TNC/W/FA, Dec. 20, 1991 [hereinafter, ''Dunkel draft"]. The name ''Dunkel draft" is somewhat a misnomer because the draft's provisions had to a very large extent been negotiated and agreed to by GATT parties before the impasse.

36 See Dunkel draft, p. L. 20 (paragraph 8). However, as discussed in ch. 3, it is difficult to generalize about the environmental effects Of particular trade flows, and particular changes in trade rules; in the case mentioned above, one would also have to take into account practices of developing countries.

37 Dunkel &~, pp. L. 20 (paragraph 8), L. 28, L. 13 (paragraphs 1, 2(i), L. 17 (paragraph 10).

Other aspects of the Dunkel draft have prompted concern in environmental quarters.[38] For example, the draft does not attempt to address GATT's potential to prohibit trade restrictions based on processes used abroad; such trade restrictions might at times be necessary or desirable to achieve environmental goals (see ch. 3), but, if challenged, might be found to violate the current GATT. Nor would the draft establish routine channels for communication and participation by environmental groups and other NGOs (see ch. 5 and the annex to this chapter). Also, some of the draft's provisions might be interpreted at times to require a heavy burden of proof in order to justify a country's technical regulations, including health, safety, and environmental regulations (see ch. 4).

GATT's dispute resolution process would be strengthened. This would substantially enhance GATT's ability to achieve its goals of liberal trade. However, it might magnify the problems mentioned above by making it harder for nations to stave off adverse GATT rulings if their environmental laws are challenged and potentially more costly to disregard such rulings once made (see the annex to this chapter).

The Dunkel draft would transform GATT into a Multilateral Trading Organization (MTO), giving it an institutional presence more comparable to the International Trade Organization proposed in 1946. This would not necessarily have any particular effect on the environment. However, some environmental groups feel that environmental concerns ought to be addressed when sweeping changes, an expanded agenda, and a stronger institutional footing for GATT are proposed. Some environmental groups object that the preamble to the agreement establishing an MTO does not clearly state the goal of sustainable development,[39] and that the agreement mentions the need for GATT to cooperate with the International Monetary Fund and the World Bank but not specifically with any international environmental organizations.[40]

It does not appear that these various provisions or omissions were intended or expected to exacerbate existing environmental concerns. However, for reasons such as those given above, U.S. environmental groups have mounted opposition to the Dunkel text.[41] GATT's apparent inattention to environmental issues since 1972 may have added to the difficulty of successfully concluding the Uruguay Round.

The Organisation for Economic Co-operation and Development

OECD does not have the authority to change GATT or other trade and environmental agreements, but it does offer a forum for industrialized countries to discuss the issues. The 24 industrialized countries that comprise OECD together account for three-fourths of world trade.

In 1991, OECD initiated a series of member state discussions on trade and environmental issues. These discussions are unusual as they are jointly supported by two OECD directorates, the Trade Directorate and the Environment Directorate, and member country trade and environmental agencies are meeting to develop national positions. This process, in theory, could produce guidelines for

38 This paper does not discuss all pertinent Dunkel draft's provisions in this regard. Additional provisions are discussed in Steve Charnovitz, "Trade Negotiations and the Environment," *International Environmental Reporter,* vol. 15, No. 5, Mar. 11, 1992, pp. 144-148 (Bureau of National Affairs, Washington DC).

39 The preamble refers to four goals. Three relate to economic growth with no mention of the environment: "raising standards of living," "ensuring full employment and a large and steadily growing volume of real income and effective demand," and "expanding the production and trade in goods and services." The four@ which might be interpreted to imply a goal of sustainable development is "developing the optimal use of the resources of the world at sustainable levels." Dunkel draft, Annex IV, p. 91. The concept of sustainable development is discussed inch. 3.

40 Dunkel draft, Annex IV, p. 93, Article III, paragraph 6. Article IV would permit the MTO to consult and cooperate with "intergovernmental bodies and agencies [with] related responsibilities" and with "non-governmental organizations concerned with matters within the scope of the MTO."

41 "Environmental Groups Urge Congress, Administration To Reject Draft GATT Text," *Inside U.S. Trade,* vol. 10, No. 3, Jan. 17,1992, pp. 11-13 (contains full text of a letter signed by 28 environmental and consumer groups); Jay D. Hair, President, National Wildlife Federation, letter to Carla A. HiUs, U.S. Trade Representative, Jan. 8, 1992; Justin Ward, Senior Resource Specialist, and Al Meyerhoff, Senior Attorney, Natural Resources Defense Council, letter to Carla A. Hills, U.S. Trade Representative, Jan. 13, 1992; Community Nutrition Institute, "MemorandumonHealth and Environmental Protection Standards Incorporated in the Dunkel Text of the Uruguay Round Negotiations To Revise the General Agreement on Tariffs and Trade," Feb. 19, 1992;Lori Wallach, Staff Attorney, Public Citizen, memorandum to "Environmental, Health and Consumer Advocates" titled "The Dec. 20, 1991 Uruguay Round 'Final Act' Text Is Worse Than Expected on Environmental, Health and Consumer Issues," dated Dec. 26, 1991. Consumers Union, in discussing several provisions of the Dunkel draft, stated that it did not believe the draft would be interpreted in certain ways feared by the environmental groups; nevertheless, it stated that clarification of the text would be desirable. Mark Silbergeld, Director, Washington Office, Consumers Union, letter to Carla A. Hills, U.S. Trade Representative, Jan. 31, 1992.

application by OECD members which address both trade and environmental policy concerns. OECD is attempting to consider developing country concerns in its discussions. The absence of developing countries from OECD membership, however, is a major limitation that is unlikely to be overcome by the observer status given to Mexico and a few Eastern European countries.

OECD has periodically addressed environmental questions related to sector-specific trade (such as chemicals). In 1972, OECD published a set of "Guiding Principles Concerning the International Economic Aspects of Environmental Policies. "[42] OECD put forward four principles:

1. *Polluter Pays Principle:* If national authorities consider a regulation necessary to protect the environment, then polluters should bear the costs of satisfying that regulation. (The polluter may pass those costs on to customers.) The guideline allows exceptions, particularly for transitions, that do not greatly distort international trade and investment. As subsequently interpreted,[43] the departures might include government help (in exceptional circumstances) to address socio-economic problems arising from rapid implementation of stringent pollution controls. Aid to stimulate experimentation with new pollution-control technologies and development of new pollution-abatement equipment would not necessarily be incompatible with the polluter-pays principle.
2. *Harmonization Principle:* Governments should seek to harmonize environmental policies (i.e., make their regulations similar), unless valid reasons for differences exist. (Valid reasons would include differences from country to country of the environment's capacity to absorb pollution, social priorities, degrees of industrialization, and population density.)
3. *National Treatment and Nondiscrimination Principle:* Environmental measures should follow GATT's principles of national treatment and nondiscrimination, meaning that they should apply alike to domestic and foreign products, and should not discriminate between imports from different countries, respectively.
4. *Compensating Import Levies and Export Rebates Principle: Countries* should not try to neutralize the economic effect of differences in environmental policies by means of import duties and export rebates, or equivalent measures. In other words, if producers in one country have higher costs of environmental compliance than producers in a second country, the first country's government should not try to neutralize that advantage by extra taxes on imports or by tax rebates or other subsidies on exports. (OECD stated that if the first three principles are followed, there should be no need for import levies or export rebates.)

The ongoing joint discussions supported by the Trade Directorate and Environment Directorate aim at further examination of trade/environment interactions. While it would appear that the four guiding principles are still relevant, some new areas of concern are being addressed at the meetings with the possibility that guidelines will be developed in time. Among the subjects under consideration:

- *Trade Measures in International Environmental Agreements:* Rules could be needed to guide the effective and least trade-distorting use of trade measures in the context of environmental accords made at the international level.
- *Effects of Trade Policies on the Environment:* Recommendations could be needed for increasing the environmental sensitivity of trade policies and trade agreements, and for ensuring that their environmental effects are adequately taken into account.
- *Application to the Developing Countries: The* extent to which the OECD Guiding Principles might be applied to help internalize environmental costs and mitigate potential trade problems in developing countries may need to be reviewed.

At one time, the United States hoped that recommended guidelines might be developed in time for consideration at OECD's May 1992 Ministerial meeting. While a progress report will be made at this

42 Recommendation adopted May 26, 1972, C(72)128. These principles were reprinted and discussed in Organisation for Economic Co-operation and Development, *The Polluter Pays Principle: Definition, Analysis, Implementation* (Paris, France: 1975).

43 "The Implementation of the Polluter-Pays principle, " recommendation adopted Nov. 14, 1974, C(74)223, reported in OECD, *The Polluter Pays Principle,* op. cit.

meeting, any specific guidelines will likely be delayed at least until the June 1993 Ministerial.

United Nations

The United Nations is broadly concerned with both environment and economic development. The United Nations Environment Program, United Nations Development Program, the United Nations Industrial Development Organization and the United Nations Conference on Trade and Development are major focal points for these issues; many specialized UN agencies also address specific environmental and/or development concerns. These agencies and functions maybe reorganized or restructured in the near future. Possible UN restructuring in general is under consideration by the new UN Secretary General. Institutional arrangements are also expected to be a key issue at the United Nations Conference on Environment and Development, which will take place in Rio de Janeiro in June 1992.[44]

UNCED is intended to provide an agenda for cooperation between the developed and developing world for addressing environmental needs within a development context. The conference will examine ways to strengthen international cooperation for environmental management and protection. A large number of issues are under consideration (see box 2-B for a partial list of topics included in UNCED's wide ranging agenda, called Agenda 21).

Trade and environment interactions are considered cross-cutting concerns, and are addressed in some individual agenda items. Delegates to the final preparatory meeting for UNCED agreed on several objectives and activities intended to make trade and environment mutually supportive.[45] The findings drew in part on a February 1992 session of UNCTAD which reviewed environment/trade interactions within the context of sustainable development. (See ch. 5 and box 5-A for further discussion.)

Much of the preparatory debate for UNCED has focused on what role the developed world should play in helping the developing countries meet their development needs in an environmentally acceptable fashion. A particularly contentious question has been whether and how the developed countries should pay additional costs arising from environmental actions agreed to in principle at UNCED. Financial resources will continue to be the crux of key issues and discussions at the Rio de Janeiro meeting. At the third preparatory meeting in the fall of 1991, a group of developing countries, known as the Group of 77, proposed a negotiating text calling for greatly expanded aid from developed countries, through "new and additional resources" in a separate "green fund' (see box 3-B). The United States opposes this approach and favors a process in which donor countries and multilateral lenders will consider funding for projects and activities identified by individual countries. At the final preparatory meeting in March 1992, the United States appeared to soften its previous stance and stated its acceptance that "new and additional resources" would be needed for implementing UNCED agenda items.

U.S. Government Efforts To Address Trade and Environment Issues

A large number of agencies have responsibilities that touch on environment and trade interactions. (See table 2-3.) Key agencies include the Office of the U.S. Trade Representative (USTR), the Environmental Protection Agency (EPA), various agencies of the Department of Commerce, and the State Department, which is responsible for negotiating international environmental agreements. To date, however, the effort appears to be a "bottom-up" effort, with little visible guidance from Congress about the potential goals and objectives of U.S. policy. Thus, there is a possibility that U.S. positions will gel out of a largely informal and hidden interagency process.

Interagency Task Force-Since 1990, an executive branch working group has been developing information to help formulate U.S. policy, particularly for the OECD discussions.[46] The USTR chairs this group. A partial list of other agencies include

[44] UNCED was established by UN General Assembly Resolution 44/228, adopted Dec. 22, 1989. Dubbed the "Earth Summit," UNCED is timed to occur on the 20th anniversary of the 1972 Stockholm Conference on the Human Environment. For discussion, see Susan R. Fletcher, "Earth Summit Summary: United Nations Conference on Environment and Development (UNCED), Brazil 1992," Congressional Research Service Report, No. 92-374, April 1992.

[45] The general findings on environment and trade were included in Section 1, chapter 1, of Agenda 21. See Preparatory Committee for the United Nations Conference on Environment and Development *International Cooperation to Accelerate Sustainable Development in Developing Countries, and Related Domestic Policies,* A/Conf.151/PC/L.71, *New* York, NY: United Nations General Assembly, March 31, 1992.

[46] In addition, some agencies have responsibilities for specific trade and environmental matters.

Box 2-B—United Nations Conference on Environment and Development: Selected Agenda 21 Issues

The United Nations Conference on Environment and Development (UNCED) will take up a wide range of issues concerned with environment and sustainable development when it meets in Rio de Janeiro in June 1992. Most of these are part of Agenda 21. Specific action plans in some 29 areas that have been worked out in UNCED preparatory meetings, some of which are listed below. Separately negotiated conventions on global climate change and biological diversity may be completed in time for signature, as well.

Social and economic dimensions
- Relationship of international economic policy to sustainable development in developing countries
- Poverty, consumption patterns, demographic dynamics and sustainability
- Health issues
- *Human settlements*

Conservation and management of resources for development
- Protecting the atmosphere
- Land-resource use
- Forest conservation and use
- Halting the spread of deserts
- Protecting mountain ecosystems
- Meeting agricultural needs with less environmental impact
- Sustaining biological diversity
- Environmentally sound management of biotechnology
- Safeguarding the ocean's resources
- Protecting and managing freshwater resources
- Safe use of toxic chemicals
- Reducing and controlling toxic wastes
- Solid waste and sewage
- Safe handling and disposal of radioactive waste

Means of implementation
- Making environmentally sound technology available
- Role of science in sustainable development
- Promoting environmental awareness
- Building national capacity for sustainable development
- Regional cooperation on environment and development

Items to be integrated into agenda 21
- Financial resources and mechanisms
- Strengthening institutions for sustainable development
- Survey of international agreements and instruments

SOURCE: Adapted from United Nations information.

EPA (which previously cochaired the group), the State Department, the Department of Commerce, the Department of Agriculture, and the Treasury Department.[47] The USTR and EPA cochair the U.S. delegation to OECD meetings. Recently, two NGO representatives (one from business and one from environmental groups) have accompanied the U.S. delegation to some of the OECD meetings.

In 1991, the task force circulated drafts of a concept paper on the link between trade and environmental policy. The paper considered the relationship between trade policy goals and environmental goals, the effect of environmental regulations on trade and competitiveness, the impact of trade rules and trade patterns on the environment, the use of trade measures for environmental purposes, and GATT provisions regarding such use of trade measures. In addition, several draft background papers on key issues are under preparation as U.S. contributions to the OECD discussions. These have

47 Still other agencies include the Justice Department, the Department of Labor, the Energy Department, the Food and Drug Administration, and the International Trade Commission.

Table 2-3-Key Federal Agencies With Responsibilities Pertinent to Trade/Environment Policy

U.S. Trade Representative (USTR)
- Leads interagency task force on trade/environment
- Represents United States at GATT
- Cochairs (with EPA) U.S. delegation to trade/environment discussions at OECD
- Leads negotiations on North American Free Trade Agreement (NAFTA)

Environmental Protection Agency (EPA)
- Participates in interagency trade/environment task force
- Cochairs (with USTR) U.S. delegation to trade/environment discussions at OECD
- Coordinates with Mexico on U.S.-Mexico border environmental matters
- Participates in NAFTA working groups
- Receives recommendations from the Trade and Environment Committee of the National Advisory Council for Environmental Policy and Technology

State Department
- Leads U.S. delegation at most international environmental negotiations
- Participates in interagency trade/environment task force

Commerce Department
- Participates in interagency trade/environment task force
- Has administrative units with specialized responsibility, including:
  - International Trade Administration
  - National Oceanic and Atmospheric Administration

Other departments and agencies with specific missions as relevant:
- Agriculture Department
- Treasury Department
- Justice Department
- Labor Department
- Interior Department
- Energy Department
- Food and Drug Administration
- U.S. International Trade Commission
- Specialized export promotion and foreign assistance agencies:
  - U.S. Agency for International Development (US AID)
  - Export-import Bank of the United States (Eximbank)
  - Overseas Private Investment Corporation (OPIC)
  - U.S. Trade and Development Program (US TDP)

SOURCE: Office of Technology Assessment, 1992.

been circulated among the task force, although only two had been released as of March 20, 1992.[48]

Activities Related to the North American Free Trade Agreement—The USTR has appointed an environmentalist to serve on the top-level Advisory Committee on Trade Policy and Negotiations as well as a total of five environmentalists to serve on five sectoral trade policy committees.[49] These committees have broader responsibility than NAFTA. USTR also coordinated the previously mentioned review of U.S.-Mexican environmental issues.

EPA also has some input into the NAFTA negotiations process, through its participation in the interagency work groups set up for NAFTA. The agency monitors meetings in all work groups, but is especially active in seven (standards, dispute resolution, investments, automotive, agriculture, energy, and land transportation).

As mentioned, U.S.-Mexican environmental issues for the most part are being addressed on a "parallel" track with the NAFTA negotiations. EPA is the lead agency for most parallel track

48 The two released papers are called "Trade Provisions in International Environment@ Agreements," dated Feb. 7, 1992, and "Harmonization," dated Mar. 9, 1992. The dates indicated are those of submission to OECD. Each paper contains a disclaimer that it "does not necessarily represent the views of the United States Government and is subject to further review. ' The papers were submitted to OECD with little public debate, except that the second paper was released shortly before submittal for comment by some environmental and business groups. Nine other background papers are under preparation. They deal with such topics as "guiding principles to increase the environmental sensitivity of trade policies,' 'guiding principles to increase the trade sensitivity of environmental policies," "effects of environmental policies on competitiveness, " and "criteria for using trade measures to achieve environmental objectives. "

49 These are the advisory committees on intergovernmental policy, services policy, investment policy, industry policy, and agricultural policy. Some environmentalists see this as slender representation given the far more extensive industry representation.

activities on the environment. It was responsible for preparation of the integrated border environmental plan in conjunction with the Mexican environment agency, SEDUE, and also played an important role in the environmental review coordinated by USTR.

Other Relevant Federal Activities—The EPA Administrator has asked the National Advisory Council for Environmental Policy and Technology (NACEPT) to make recommendations concerning the interaction of trade and environment. (Members of the Council include representatives from industry, environmental groups, and academia.) NACEPT has a Committee on Trade and Environment, with working groups on GATT, Industrialized Countries/ OECD, and Western Hemisphere. The GATT group is considering worldwide issues and whether and how GATT should be amended. The Industrialized Country/OECD group is examining such issues as "sound science" as the basis for standards and the effects of environmental regulations on industrial competitiveness—issues of special concern to developed countries. The Western Hemisphere group is considering NAFTA and the possible free trade negotiations that might follow from the Enterprise for the Americas Initiative, and is particularly concerned with developing country issues. The NACEPT meetings are open to the public, thus contributing to broader public debate about these issues .50

Several agencies provide environmental assistance of different kinds to developing countries. The Agency for International Development (AID), the primary U.S. foreign assistance agency, provides substantial financial and technical support related to the environment. It is the lead agency of the Administration's recently announced U.S.-Asia Environmental Partnership (US-AEP). US-AEP involves over 20 Federal agencies and seeks to promote the use of U.S. expertise and technology for solving environmental problems in Asia. AID also supports energy efficiency projects. Several other agencies, including the Environmental Protection Agency (EPA) and the Department of Energy (DOE) provide technical and project assistance to developing and restructuring economies. DOE leads the interagency Committee on Renewable Energy Commerce and Trade while EPA is assembling a directory of U.S. environmental firms. EPA also supports the recently inaugurated U.S. Environmental Training Institute which will bring developing country business executives and officials to the United States for professional and technical training by the private sector.

Other federal programs facilitate U.S. exports of environmental technologies and services. (See app. D.) The Trade and Development Program funds project feasibility studies. The Department of Commerce provides export assistance and organizes trade shows, sometimes in cooperation with EPA and AID. The Overseas Private Investment Corporation (OPIC), the Export-Import Bank, and the Small Business Administration provide support for U.S. exporters and investors that can involve environmental projects. OPIC provides information, investment missions, project financing, and insurance programs for U.S. investors in developing, Eastern European, and former Soviet countries. In addition to its general and regional funds, a new Environment Investment Fund has been started. The Export-Import Bank provides credit and insurance for exporters of U.S. goods, including environmental goods.

some trade and environment committee plans t. make its initial recommendations to the Administrator in April 1992, followed by further study leading to more detailed recommendations.

Chapter 2 Annex

Some GATT Provisions and Principles Pertinent to Environmental Matters

This annex discusses some GATT provisions and principles relevant to environmental issues. It assumes a knowledge of the background material about GATT in the body of this chapter.

Environmental Regulations as Nontariff Barriers; National Treatment and Most-Favored-Nation Rules

GATT addresses both tariff and nontariff barriers. Nontariff barriers include any domestic laws, customs, or practices that hinder imports from competing with domestic products.[1] This can include health, safety, and environmental regulations concerning goods (e.g., automobile safety, suitability of beverage bottles for reuse, food and drug safety). At the least, it is a burden for a foreign manufacturer to inform itself about local standards, to comply, and to prove to the local authorities' satisfaction that it has complied. At worst, the laws could be deliberately slanted to make it difficult for foreign manufacturers to comply. For example, a country could demand certain technical approaches while aware that other approaches, already in use by foreign manufacturers, would do the job as well; and a country could refuse to accept the results of tests in a foreign laboratory even though it believed those results to be reliable. International disputes can arise when one nation's regulations strike another nation as unduly restricting trade.

From its beginning in 1947, GATT' contained provisions designed to reduce nontariff barriers. These include the "national treatment" rule in Article III that once goods have been imported from another member country, they must be treated by the law no less favorably than like goods produced domestically. (This means, for example, that taxes could not be higher for imported goods, nor regulations sticter.) Another provision is the 'most-favored-nation' rule in Article I, by which goods imported from or exported to one member country must be treated no worse than like goods imported from or exported to another member country. A third provision is Article XI, which (with certain exceptions) prohibits any bans or restrictions on imports or exports other than tariffs. These provisions prevent explicit discrimination against foreign goods, but domestic regulations could still impede imports in more subtle ways. These subtle barriers have increased in importance and attracted more scrutiny as tariffs have been reduced and quotas mostly eliminated.

Such subtle barriers were addressed in 1979 in GATT's Agreement on Technical Barriers to Trade, popularly called the Standards Code.[2] The Standards Code sets out procedures and principles to avoid undue trade effects of technical regulations. For example, nations are to consult with each other as they formulate technical standards; to follow international standards when possible; to accept foreign test results when possible; and to favor standards that merely mandate ultimate performance over standards requiring that such performance be achieved by certain technical means. The Standards Code also requires a member country to notify other members, give a justification, and (except in emergencies) allow time for other countries to raise questions before adopting a technical standard not agreed to internationally. The Code recognizes that one justifi cation for such standards could be "protection for human health or safety, animal or plant life or health, or the environment."[3] From 1980 through 1990,211 notifications under the code explicitly listed environmental protection as a justification for the standard; another 167 appear to concern environmental issues, but the justification was framed in terms such as public heath, human safety, and

1 E-@ of nontariff barriers in other countries, and U.S. attempts to remove them, are given in *Competing Economies*, op. cit., pp. 125-138.

2 Several GATT codes were negotiated d@ the Tokyo Round, which concluded in 1979. A code is an optional supplementary agreement, effective only among countries that have signed it. The two codes discussed in this chapter, the Standards Code and Subsidies Code, have been signed by the United States and its major trading partners.

3 Standards Code, paragraph 2.2.

consumer information.[4] The Standards Code provides for resolution of disputes concerning standards. While no cases have been formally resolved under the Standards Code, the United States did try to challenge an EC regulation concerning beef from cattle fed certain hormones (see app. A).

While it provides helpful procedures and principles, the Standards Code leaves considerable play for nations to erect trade barriers under the guise of health, safety, and environmental regulations. Provisions proposed in the Uruguay Round could go further toward reducing the potential for trade barriers, though some provisions could also potentially impede legitimate environmental regulations. How to permit legitimate domestic regulations but avoid trade barriers is a difficult problem. This problem is discussed in chapter 4.

Subsidies

Subsidies, which are benefits a government confers on particular firms or industries, are another form of trade barrier. Subsidies can enable companies to undersell foreign goods in both the home market and export markets. (In the latter case subsidies are not a trade *barrier, since they* induce rather than inhibit trade. However, they can *distort* trade patterns from what they would be without government intervention.) When countries import subsidized goods, GATT permits them under certain circumstances to levy special additional tariffs, called countervailing duties, to compensate for the subsidies.[5]

Subsidies to help firms comply with environmental regulations or otherwise to improve environmental performance might include support for environmental research and development (R&D), tax incentives for purchase of pollution control equipment, and technical assistance for manufacturers. Amendments proposed in the Uruguay Round would exempt certain R&D support from the application of countervailing duties.[6] (The amendments deal with R&D generally and are not aimed specifically at environmental R&D.) Some have suggested that lax environmental standards are a form of subsidy and should therefore be subject to countervailing duties; this is discussed in chapter 4.

"General Exceptions" (Article XX)

GATT's Article XX, titled "General Exceptions," permits measures that would otherwise violate GATT if done for one of 10 enumerated reasons, provided that the measures 'are not applied in a reamer which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade.' Article XX might be invoked in cases, such as the tuna/dolphin case, in which a nation restricts imports of goods based on the process used in producing the good. Such restrictions might be deemed to violate GATT unless Article XX applies.[7] While Article XX does not explicitly mention the environment, it does include measures:

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[4] GATT Secretariat, ''Trade arid Environment,'' op. cit., p. 22. This source breaks these notifications down by the environmental areas covered, which include air pollution, noise, water pollution, several categories of hazardous substances, waste recycling and disposal, transport of dangerous products, radiation, conservation of endangered species, and energy conservation.

[5] GATT Article VI. In addition to permitting countervailing duties as a response to subsidies, GATT normally prohibits export subsidies (i.e., subsidies paid only when goods are exported) on manufactured goods. Amendments under consideration would prohibit subsidies in some additional circumstances. GATT Trade Negotiations Committee, "Draft Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations," GATT Document MTN.TNC/W/FA, Dec. 20, 1991 @hereinafter, ''Dunkel draft"], pp. 1.3-1.8.

[6] Dunkel draft, pp. I.9-I.10.

[7] It is difficult t· tell how GATT would b, interpreted in particular cases. Many pertinent issues have yet to be addressed in decided cases. However, some possible GATT problems can be identified. Import restrictions based on the process used could be deemed to violate Article XI, which generally prohibita import restrictions other than tariffs (which under Article II may not exceed agreed levels). Under GATT's Note to Article Ill, import restrictions, when matched by identical restrictions on domestic products, maybe treated as internal regulations not subject to Article XI. However, the panel's report in the tuna/dolphin case raises doubt as to whether this Note applies to restrictions based on the process by which a product was made, rather than the nature of the product itself. See "United States: Restrictions on Imports of Tuna,'' op. cit., paragraph 5.15. (While not yet adopted by the GATT Council, this report is an indication of how future panels might reason.)

Even if the Note to Article III were found to apply to process-based restrictions, so that Article XI would not apply when the same process-based restrictions were used for domestic and imported products, the restrictions might be deemed to violate the national treatment rule of Article III. That rule requires that imported products "be accorded treatment no less favorable than that accorded to *like products* of national origin" by all internal regulations (emphasis added). It could be argued that products that are physically indistinguishable, even though they were made differently, are "like products." In this case, to restrict certain foreign items made by one process more than the same domestic products made by another process would appear to violate the national treatment rule. Similarly, to restrict products from one foreign country made under one process more than products from another foreign country made under a different process would appear to violate the ''most-favored-nation'' rule of Article I.

(b) necessary to protect human, animal or plant life or health;

. . . .

(g) relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption.

These two provisions would appear to include many environmental concerns. Members may act on their own based on these exceptions; if another country complains and Article XX is raised in defense, a GATT panel will hear arguments on whether the exceptions apply.

Dispute Resolution Under GATT

GATT provides for resolution of disputes arising under its rules.[8] Normally, disputes that cannot be solved by consultation and mediation are heard by a three-member panel of experts appointed by the GATT Council. From GATT's inception in 1947 through part of 1990, 79 disputes progressed to the point of a decision made by a GATT panel and adopted by the GATT Council.[9] Of these, several concerned environmental or closely related health and safety issues (see app. A). The frequency of environment-related disputes could increase as environmental concerns become more pressing.

A panel normally does its work in 6 months, and the GATT Council normally considers the panel's recommendation within about 10 months after the dispute was first brought to GATT. Under current practice, any country, including the losing party, can delay indefinitely the GATT Council's adoption of the panel's report as an official GATT decision. While this permits countries to escape the legal effect of adverse panel reports, the pressure of international opinion often induces countries to eventually allow their adoption by the Council.

Changes being considered in the Uruguay Round would remove a country's power to block unfavorable panel reports. The Dunkel draft provides for appellate review of a panel decision; but the appellate decision, or the panel's decision if no appeal is filed, would become an official GATT decision unless there were unanimous consent to reject the decision.[10]

If the Council adopts a decision finding a GATT violation, the offending country is supposed to change its practice according to the panel's recommendations. However, GATT *cannot force any changes in a country's domestic laws. If the* offending country does not change its practice, it is supposed to negotiate satisfactory compensation to give to the countries adversely affected by the violation (normally, reduced tariffs on some goods). However, GATT cannot compel this either. If the offending country neither changes its practice nor offers acceptable compensation, the GATT Council can authorize the affected countries to retaliate, normally by levying punitive tariffs on some of the offending country's goods. However, the Council's authorization of retaliation could be vetoed by the offending country. As with adoption of panel reports, it is political pressure, rather than legal compulsion, that currently enforces GATT rulings.

The Dunkel draft now under consideration would make it easier to retaliate, allowing retaliation as a matter of right. Also, the retaliating country could choose to retaliate by suspending any type of obligation under GATT; for example, if the offending country erected a barrier to the import of goods, the retaliating country might restrict imports from the offending country of goods or services, or might refuse to honor that country's citizens' intellectual property rights. This would make retaliation a more versatile tool for ultimately inducing a country to comply with GATT rules. The original panel or an arbitrator appointed by the Director-General would be assigned if needed to set the authorized retaliation at a level commensurate with the magnitude of the offense.[11]

Dispute resolution under GATT is conducted in secret and with restricted participation. The panel normally receives oral and written submissions from governments only; nongovernmental organizations

[8] Some GATT Codes, including those for Standards and Subsidies, provide separate dispute resolution procedures.

[9] These cases are reported in Pierre Pescatore et al., ***Handbook of GATT Dispute Settlement*** (Ardsley-on-Hudson, NY: Transitional Juris Publications, 1991).

[10] Dunkel draft, pp. S.12-S.14, Articles 14-15.

[11] Dunkel draft, p. S.17, Article 20. Trade in go@ and services, and intellectual property, are all covered in the Dunkel draft. See Dunkel draft, "Agreement Establishing the Multilateral Trade Organization (Annex IV),' specifically: p. 92, Article II, paragraph 1, and p. 100, Annexes 1-3 to Annex IV.

(NGOs) cannot directly participate. A government, if it so chooses, can consult with NGOs in preparing its case and can present material supplied by NGOs. However, the current rules give no guarantee that environmental groups or other NGOs can present their views, even indirectly, on trade disputes involving their interests. Also, the governments' submissions are normally kept secret, as is the panel's recommendation, unless and until it is adopted by GAIT Council.[12] This secrecy is a point of contention with U.S. environmentalists, who strongly favor public debate.

[12] The release of the panel's report in the tuna/dolphin case before its consideration by the GATT Council was an exception to the normal practice.

Chapter 3

Role of Trade Measures in Environmental Policy

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Perceived conflicts between efforts to liberalize trade and to protect the environment are driving discussion of trade/environment issues. Liberalization of trade is not a goal in and of itself but rather a means to promote prosperity through improved economic efficiency and development. As this chapter makes clear, the degree of compatibility between economic development or growth and environmental protection depends on the specific context. Partly for this reason, it is no simple matter to unravel the many factors that account for the environmental effects of different trade patterns or policies. Generalizations implying a necessary relationship between environment and freer trade—whether positive or negative-are often oversimplifications that policymakers should view with caution.

Economic development and environmental protection are both needed for improved human well-being. Ultimately, neglect of either goal-development or environmental protection-could impair the other. Environmental degradation diminishes the capacity of the planet to sustain economic development; securing a livable environment for a human population that could double by the mid-21st century requires economic development, including growth and technological change.[1] The twin aspirations for long-term economic and environmental improvement are encompassed in the term *sustainable development.* Although given various definitions, it has been described as development that:

> . . . meets the needs and aspirations of the present without compromising the ability of future generations to meet their own needs.[2]

While the concept of sustainable development now receives much attention, it is difficult to translate into clear courses of action. However, if sustainable development is to be achieved-if it can be achieved-economic growth and development need to be channeled in environmentally responsible directions. By setting environmental requirements and imposing costs on polluters, governments can guide development so as to diminish environmental degradation. Under these circumstances, growth can produce resources to support development and use of environmentally preferable technologies that can move society closer to sustainability.

The concerns of environmentalists and liberal trade advocates intersect in their attitudes toward externalities. Pollution and environmental degradation are negative externalities-costs not borne by their creators but placed on third parties and society as a whole. Because polluters do not generally bear these environmental costs, they have little incentive to minimize them. Therefore, from an environmental perspective, it is desirable to require or encourage polluters to internalize these costs—through regulations, economic incentives, or legal and social action aimed at preventing, repairing, or compensating for environmental damage.[3]

From the trade perspective, externalities are one of a number of market failures or distortions that diminish the welfare-maximizing force that free markets and free trade theoretically can deliver. Although it is unlikely that the General Agreement on Tariffs and Trade (GATT) would regard weak environmental regulation as a form of subsidy, environmental costs not reflected in the price of traded goods are, in principle, similar to explicit subsidies as distorters of trade. In the cases of both explicit subsidy and implicit subsidy for environmental and social costs, society bears some of the cost of production that the producing company would bear had it paid the full cost in a perfect market. In each case, that company might accrue cost advantages over rivals that do pay the full cost.

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[1] George Heaton, Robert Repetto, and Rodney Sobin, *Transforming Technology: An Agenda for Environmentally Sustainable Growth in the 21st Century* (Washington DC: World Resources Institute, April 1991).

[2] World Commission on Environment and Development, *Our Common Future* (New York, NY: Oxford University Press, 1987), p. 43. The report, commonly called the Brundtland Report, includes what it calls two key concepts within the term: 1) "the concept of 'needs,' in particular the essential needs of the world's poor, to which overriding priority should be given;" and 2) "the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.'

[3] As generally used in this paper, the term "regulation" encompasses not only traditional "command and control" types of regulations but also "market-based" instruments. The use of market mechanisms and other economic incentives in environmental regulations in some cases has the potential to achieve comparable or better environmental results in a more economically efficient manner than traditional regulation alone.

Advocates of freer trade therefore would favor eliminating both types of subsidies; in the case of the environment, this could encourage internalizing the costs of pollution.

But steps to internalize the costs of pollution are not always easily taken, as subsequent sections of this chapter demonstrate. There is a wide range in environmental capabilities and commitments among different nations. While freer trade and investment sometimes produce resources that might be used for environmental protection, it cannot be assumed that this will happen in the absence of regulations or incentives for improved environmental management. If the goals of environmental protection and economic development are to be made compatible, economic activity will need to be conducted in ways that diminish environmental degradation.

At times, trade restrictions may be needed to achieve environmental ends. However, their usefulness is limited. Usually, the root cause of environmental problems is domestic conduct. While trade can magnify the effects of such conduct, and trade restrictions can limit those effects, it is usually preferable, when possible, to employ other means (e.g., technical assistance or help with technology transfer) to encourage countries to adopt domestic regulations or incentives to effect the needed changes. Still, there may be circumstances when trade measures are a needed recourse.

This chapter discusses the compatibility of trade and environmental objectives, the pros and cons of using trade measures for achieving environmental objectives, and the special trade/environment challenges that arise with respect to developing nations. For the purpose of illustration, the chapter draws upon examples from specific environmental agreements that have trade provisions. Full analysis of such agreements is beyond the score of this background paper. (The impact of environmental regulations on trade and manufacturing competitiveness is discussed in chapter 4.)

ASSESSING THE EFFECTS OF TRADE ON THE ENVIRONMENT

There has been little systematic assessment of the environmental impacts of different trade patterns or policies. The formal environmental impact statement process set up under the U.S. National Environmental Policy Act of 1969 has not been used to evaluate draft trade agreements and potential alternative actions. Most studies tend to be either highly theoretical or narrowly focused on particular cases. Generalizations made on the basis of such studies are risky. More authoritative information about the environmental impacts of trade may soon become available through the Organisation of Economic Co-operation and Development (OECD), which is analyzing trade-related environment effects in several areas (agriculture, forestry, fisheries, transportation, and endangered species).[4]

One of the few efforts to examine the environmental effects of a proposed trade regime is the U.S. interagency 'Review of U.S.-Mexico Environmental Issues" produced in connection with the ongoing North American Free Trade Agreement (NAFTA) negotiations (ch. 2).[5] The U.S. document (which is not a formal environmental impact statement) illuminates the possible environmental effects of alternative growth and policy scenarios under NAFTA and no-NAFTA options. However, because of methodological limitations, quantitative estimates are incomplete and imprecise. The document naturally emphasizes U.S. border area effects, with very modest treatment of continent-wide or global environmental implications. Moreover, the review was undertaken before a draft NAFTA was developed; its relevance to whatever specific NAFTA text is eventually proposed remains to be determined.

In general, data and methodologies to determine unambiguously if NAFTA, GATT, or other regimes are net contributors to or detractors from environmental quality are lacking. Liberalized trade might offer benefits and harm simultaneously, and tradeoffs are likely. There can be circumstances in which freer trade and environmental improvement are

[4] The results of these analyses had not been released when this report went to press. Ch. 2 discusses OECD's trade/environment activities in mOre detail.

[5] Interagency Task Force coordinated by the Office of the U.S. Trade Representative, "Review of U.S.-Mexico Environmental Issues," Washington DC, February 1992. Reportedly, the Mexican and Canadian Governments are engaged in similar exercises, but these had not been released as of mid-March 1992.

complementary. There can also be circumstances in which trade hastens environmental degradation.

Insofar as it helps make societies wealthier, liberal trade might encourage steps for environmental protection. As wealth increases, societies may give more priority to environmental improvements. For example, a study comparing sulfur dioxide and smoke levels in several cities with differing income levels found levels of these pollutants rising as per capita income rose to $5,000; then, the pollutant levels declined as per capita income rose, up until about $15,000 per year, after which per capita emissions began to rise.[6] Such a result may occur from increased demands for environmental protection leading to passage and enforcement of environmental protection laws and increased environmental investment. Another possible explanation is that more prosperous countries may prefer less pollution-intensive industries; whether this would be a net environmental benefit would depend on the extent to which polluting processes were diverted elsewhere.

Liberalizing trade and investment might speed international diffision of environmentally preferable production technologies. Such cleaner technologies not only reduce the pollution associated with production, they often offer improved energy and materials efficiency, accruing further environmental and productivity gains. There is some limited empirical evidence suggesting that in Latin America, relatively open economies are more likely to adopt cleaner production technologies than are more closed economies.[7] Such a result may be due to the need of export-oriented industries in developing countries to meet more stringent product standards and customer demand in developed country markets (e.g., dioxin-he paper). Open economies may be more receptive to imports of innovative foreign technologies that are cleaner and more efficient than older production processes. In some cases, multinational firms might bring technologies that meet corporate or home country standards which are more stringent than local requirements.

But it is not inherently true that economic improvements arising from freer trade will translate automatically into environmental improvements. As the scale and rate of economic growth increases, environmental degradation may outpace environmental gains made through the use of environmentally preferable technology.[8] After all, the industrialized nations (those that have experienced the greatest growth and that account for most of the world's trade) are the largest contributors to many environmental problems. The United States, for example, contains 5 percent of the world's population but accounts for 20 percent of global warming potential and 20 to 30 percent of emissions of major ozone-degrading compounds CFC-11 and -12.[9] Larger and more open markets for tropical timber products may hasten harvesting of tropical forests in developing countries-whether or not adequate safeguards are in place to encourage reforestation or other environmentally preferable practices.

The activity of increasing trade itself varies in its environmental effects. For example, truck traffic across the U.S.-Mexico border may expand from 1.8 million commercial vehicle crossings in 1990 to 8 million in 2000, with concomitant increases in air pollution, noise, and congestion, even in the absence of NAFTA.[10] However, elimination of regulations that ban U.S. trucks in Mexico and restrict Mexican trucks in the United States might avoid some of these impacts by obviating return trips by empty trucks and removing the environmental risks associated with transfers of hazardous cargo.[11]

A frequently aired concern is that industries may relocate from countries with strict environmental regulation (e.g., many developed nations) to countries with weaker regulation or enforcement in order

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15 Gene M. Grossman and Alan B. Krueger, "Environmental Impacts of a North American Free Trade Agreement," paper presented at a conference on U.S.-Mexico Free Trade Agreement, sponsored by the Mexican Secretarial de Comercio y Fomento Industrial, Oct. 8, 1991.

7 Nancy Birdsall and David Wheeler, "Openness Reduces Industrial Pollution in Latin America: The Missing Pollution Haven Effect,' prepared for the World Bank symposium "International Trade and the Environment" Washington, DC, Nov. 21-22, 1991.

8 H-m E. Daly and John B. Cobb, Jr., *For the Common Good: Redirecting the Economy Toward Community, the Environment, anda Sustainable Future* (Boston, MA: Beacon Press, 1989).

9 U.S. Congress, Office of Technology Assessment, *Changing by Degrees: Steps To J/educe Greenhouse Gases*, OTA-O-482 (Washington, DC: U.S. Government Printing Office, February 1991), p. 3.

10 interagency Task Force, "Review of U.S.-Mexico Environmental Issues," op. cit., pp. 174, 177-78.

11 Ibid.

to avoid costs associated with environmental compliance.[12] This is called the "pollution haven" effect. For instance, differences in environmental regulations may have been a factor leading to decreased employment in California and increased Mexican activity in the wood product coatings industry .13 But, in general, there is little evidence that large-scale shifts in industrial investment and relocation to pollution havens have occurred.[14] (See ch. 4 and app. E for more extensive discussion.)

Debate also exists about the most effective approaches to apply trade measures for environmental purposes. For instance, the 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) restricts trade in endangered and threatened species, and in products derived from them (such as elephant ivory). CITES bans trade in species threatened with extinction (those listed under app. I of CITES) on the premise that trade prohibitions will destroy markets for endangered species and thus their commercial appeal. It is further argued that blanket bans prevent the problem of illicit wildlife trade from being disguised as legal trade. Others have argued that such bans can be ineffective and may even hasten species extinction by raising the price and profitability of banned products in the underground market while removing economic incentives for long-term sustainable management of species.[15] Advocates of this latter view argue that well-managed exploitation of threatened and endangered species (e.g., controlled elephant hunting) is more likely to promote species preservation and sustainable development because it offers long-term financial and material benefits to the governments, communities, and people controlling the species' fate. In the case of elephant ivory, there is evidence that trade bans are effective. Since 1989, when CITES enacted the ivory trade moratorium, elephant tusk prices have decreased from about $100 per kilogram to between $2 and $3 per kilogram.[16] Poaching has been reduced greatly and elephants have been observed to return to areas where poaching had previously occured.[17] The March 1992 meeting of CITES members in Kyoto, Japan reaffirmed the ivory trade moratorium, rejecting requests by several southern African countries to reinstate limited ivory trade. Some trade controls would seem to be needed to protect species. Improved monitoring, reporting, and data might help clear up some uncertainties about compliance with agreements.

As discussed later in this chapter, GATT trade rules, as currently interpreted, have the potential to affect both unilateral and multilateral environmental policies. The tuna/dolphin dispute arising from the tuna import ban imposed pursuant to the U.S. Marine Mammal Protection Act suggests the potential for conflict between GATT and unilateral environmental laws with trade provisions. Although no challenge has yet been made, a country's effort to implement trade measures pursuant to a multilateral environmental agreement might someday be challenged in GATT.

Significant environmental problems also occur in activities not fully covered by GATT. Agriculture is only partly covered by GATT's discipline, although Uruguay Round negotiations may change this. GATT now allows domestic subsidies and, in the case of agriculture, permits export subsidies (i.e., subsidies contingent on export) as well.[18] This has enabled the United States, Japan, and the European Community to spend billions of dollars annually on farm commodity supports while avoiding GATT conflicts. A GATT waiver also allows U.S. import restrictions to be imposed by the President in some

12 See, for instance, Daly and Cobb, op. cit., pp. 209 and ff., cited in Stewart Hudson, "Trade, Environment, and the Pursuit of Sustainable Development" prepared for the World Bank symposium "International Trade and the Environment" Washington, DC, Nov. 21-22, 1991.

13 U.S. Congress, General Accounting Office, *U.S.-Mexico Trade: Some U.S. Wood* Furniture *Firms* Relocated From *Los Angeles Area to Mexico,* GAO/NSIAD-91-191 (Gaithersburg, MD: U.S. General Accounting Office, April 1991); Ann M. Lesperance, "Air Quality Regulations and Their Impacts on Industrial Growth in California, Based on Census Data: A Case Study of the South Coast Air Quality Management District Rule 1136 and the Wood Products Coatings-Industry," master's degree thesis, University of California, Los Angeles, 1991.

14 H. Jeffrey Leonard, *Pollution and the Struggle for th World product* (New York, NY: Cambridge Press, 1988); Lyuba Zarsky, "Trade-Environment Linkages and Sustainable Development" report to the Environment Planning Branch, Australian Department of Arts, Sport, Environment, Tourism, and Territories (Melbourne, Australia: Nautilius Pacific Research, October 1991).

15 "Saving the Elephant: Nature's Great Masterpiece," *The Economist,* July 1, 1989, pp. 15-17.

16 Mark Pagel and Ruth Mace, "Keeping the Ivory Trade Banned," *Nature,* vol. 351, May 23, 1991, pp. 265-66.

17 Ibid.; Peter Aldous, "AfricanRift in Kyoto," *Nature,* vol. 354, November 21, 1991, p. 175.

1S However, both domestic subsidies and agricultural export subsidies can be countervailed by importing countries (see annex to ch. 2, discussion Of subsidies).

circumstances; import controls are in effect for certain sugar, peanut, cotton, and dairy imports. Some other practices that may appear to violate GATT (e.g., Japan's ban on rice imports) have not been stopped.

Farm subsidies and trade protection can provide strong incentives to intensify agricultural production or to extend agriculture onto lands less suitable for cultivation, often to the detriment of the environment. These incentives could encourage overapplication of fertilizers, pesticides, irrigation, and mechanical tillage; concentration of livestock leading to overgrazing and improperly handled animal waste; and cultivation of marginal lands. They may also discourage crop rotations and other environmentally preferable practices. Environmental results of overly intensive agriculture include water and air pollution; degradation of soil resources; damage to wildlife, fisheries, and natural ecosystems; and, ironically, given reliance on pesticides, increased vulnerability to pests and disease.[19] On the other hand, subsidies for conservation (e.g., conservation reserve land set-asides) can have environmental benefits when appropriately structured and implemented. Amendments under consideration in the Uruguay Round at GATT, while calling for reductions in agricultural subsidies, would exempt some conservation subsidies.[20]

Protection of agriculture by developed countries can also have unintended effects for the environment of developing countries. Despite some special preferences, many developing countries have limited access to developed country agricultural markets. They are also affected by developed country sales of surplus agricultural goods at prices below unsubsidized production costs. Both depress world prices for agricultural. commodities and reduce the foreign exchange that developing countries can earn, preventing them from profiting from their comparative advantage (cheap labor) in their labor-intensive agricultural sector. To meet needs for investment and debt service, developing countries might then become more dependent on extractive activities like mining and logging that, particularly in the absence of effective regulation, can have large adverse environmental impacts. Furthermore, less developed countries often lack the means to conduct such extractive activities with the environmental precautions that might be taken in some developed countries.

But the net environmental effect of lifting the current system of agricultural subsidies is difficult to determine. Even if subsidies encourage practices that produce adverse environmental impacts, removing the subsidies and opening markets would not automatically be entirely positive from an environmental standpoint. Decreased environmental impacts from lower pesticide use in Europe or Japan, for example, would need to be evaluated against the possibility of greater pesticide use accompanying more production in developing countries with weaker regulations, weaker enforcement, and less applicator training. Inappropriate application might lead to more serious environmental or health impacts than in countries with stricter standards, stronger enforcement, and more training.

As with agriculture, trade restrictions against labor-intensive manufactures can have negative environmental implications. Since less developed countries often lack the resources to compete in capital-intensive industries, they rely heavily on labor-intensive industries and natural resource extraction activities (agriculture, logging, and mining). By limiting earnings possibilities in labor-intensive industries, restrictions on labor-intensive manufactures can increase developing country reliance on extractive activities.

Other trade restrictions could have similar effects. For instance, countries may charge higher tariffs on semi-finished or finished goods than on raw materials to encourage domestic value-added activities. This is called tariff escalation. GATT does not favor or disfavor tariff escalation; it simply directs members to negotiate mutually agreeable tariff schedules, subject to the most-favored-nation rule (see annex to ch. 2). Tariff escalation on tropical forest products or

19 The discussion above draws upon several sources, including: GATT Secretariat, "Trade and Environment," op. cit., PP. 32-34; T.T. Phipps and K. Reichelderfer, *Agricultural Policy and Environmental Quality* (Washington, DC: Resources for the Future, 1988); T.T. Phipps and K. Reichelderfer, "Farm Support and Environmental Quality at Odds?" *Resources,* spring 1989, pp. 14-15; Paul Faeth, Robert Repetto, Kim Kroll, Qi Dai, and Glenn Helmers, *Paying the Farm Bill: U.S. Agricultural Policy and the Transition to Sustainable Agriculture* (Washington, DC: World Resources Institute, March 1991); National Research Council, *Alternative Agriculture* (Washington DC: National Academy Press, 1989).

20 GATT Multilateral Trade Negotiations, The Uruguay Round, Trade Negotiations Committee, "Draft Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations," GATT Dec. MTN.TNC/W/FA, Dec. 20, 1991 [referred to as the "Dunkel draft"], pp. L.20 (paragraph 8), L.28, L.13 (paragraph 1), L.17 (paragraph 10).

metal goods may discourage establishment of downstream industries in developing countries and increase reliance on extractive activities. On the other hand, badly conceived schemes for encouraging domestic value added in developing countries can exacerbate resource degradation through inefficiency.[21] And, in the absence of effective environmental management, increased earnings from downstream processing might spur even faster extraction of raw materials without adding environmental safeguards.

In sum, liberalized trade has the potential for both positive and negative environmental impacts. Trade's effect on the environment depends on the context—what regulatory and other restrictions apply to the production and use of traded items, how stringently regulations are enforced, and how trade-generated revenues are used.

USE OF TRADE MEASURES

Just as there is disagreement on the effects of trade on environment, there is also disagreement about when trade measures (i.e., trade restrictions) are an appropriate means of pursuing environmental goals. This issue is under study in various forums (see ch. 2). The answer in any given case will depend on, among other things, the expected environmental benefit, the expected effect on trade, and whether alternative, less trade-restrictive means are available to reach the environmental goal.

Trade measures (especially import restrictions), and the threat of such measures, can potentially further environmental goals in various ways. They can help *convince* a country to join an international environmental agreement or to behave according to certain environmental norms; *deny* a country economic gain from failing to follow such norms; *prevent* a country's actions from undermining the environmental effectiveness of other countries' efforts; and *remove the* economic incentive for certain environmentally undesirable economic activity. Often the same measure has effects in two or more ways.[22]

An example is CITES, which as mentioned above seeks to preserve certain listed endangered and threatened species by prohibiting or restricting trade in them. In this case it seems that trade restrictions can be effective. When the demand for such species comes from export markets, prohibiting trade will reduce the commercial incentive to harvest listed species. (To some extent demand is already reduced by laws in many countries banning or restricting domestic trade in such species.) Another example is the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, expected to come into effect mid-1992. The Convention seeks to prevent the environmentally improper disposal of hazardous wastes; to that end, among other things, it bans export of hazardous waste where improper disposal would appear to be a likely result (e.g., wastes sent to countries lacking adequate regulations or the technical capacity for proper disposal) .23 Here too it seems that trade restrictions could be effective as trade itself contributes to the environmental problem.

However, when trade is not an intrinsic part (or is a minor part) of the initial problem, trade restrictions designed to alter economic incentives could be an inefficient and costly way to address environmental problems.[24] While empirical evidence is limited, trade restrictions that apply at a later point cannot always be counted on to filter back to remedy the conduct at issue; among various types of trade restrictions, those aimed most closely at the offending conduct may be more effective.

The difficulty of determining how trade restrictions work in a given case and the possible advantage of targeting such restrictions closely to the conduct at issue are both illustrated by the debate surrounding proposals to restrict trade in tropical timber. Some groups have called for bans on imports

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21 Robert Repetto, *The Forest for the Trees.? Government Policies and the Misuse of Forest Resources* (Washington, DC: World Resources Institute, 1988).

22 For another statement on the different ways in which trade restrictions can work see the United States' "Discussion Paper for OECD Joint Session of Trade and Environment Experts," dated Feb. 7, 1992. The U.S. interagency process that generated this paper is discussed in ch. 2.

23 The Basel Convention is discussed in Mary Tiemann, Library of Congress, Congressional Research Service, *Waste Exports: U.S. and International Efforts To Control Transboundary Movement*, IB89123, Feb. 26, 1992.

24 Economic theory suggests that this would likely be the case. In economic terms, excessive pollution is caused by a failure to internalize environmental costs, which is a market distortion. It is normally more efficient to correct that distortion directly (e.g., by environmental regulations or incentive mechanisms) than to try to correct its effect with another distortion (trade restrictions). For an analysis of the use of trade distortions to remedy domestic market distortions, and a discussion of why trade distortions would often be inefficient, see W.M. Corden, *Trade Policy and Economic Welfare (Oxford:* Clarendon Press, 1974).

or exports of commercially harvested tropical timber products,[25] especially raw logs. Those supporting a ban believe it might help protect the vast genetic diversity found in tropical ecosystems, maintain the forests' carbon fixing capacities, and safeguard the land tenure of indigenous peoples. However, others (including the GATT Secretariat) believe a general ban on logs from tropical forests would have little effect.[26] Over 80 percent of tree cutting in developing countries is due to fuel wood harvesting and land-clearing for agriculture and ranching.[27] Tropical timber exports (either as logs or processed timber) account for only 1 percent of trees felled in developing countries, according to the GATT Secretariat.[28] A total ban on trade in all products made from tropical timber might reduce forest conservation incentives by depressing the market value of the primary forest. A ban just on log exports would increase processed wood exports; developing country sawmills using less efficient technologies and practices could waste more timber than more efficient mills in importing countries. Rather than a ban, opponents to trade restrictions suggest that a more effective approach to reduce deforestation would be to, in the words of the GATT Secretariat, "promote employment and income growth for rural people in those countries" by such measures as domestic economic reforms and access to foreign markets.[29]

Proponents of tropical timber trade restrictions—who are not all proponents of bans-counter by noting that some countries are much more affected by export timber demand than aggregate statistics suggest (Malaysia and Indonesia account for over 75 percent of tropical timber exports[30]), certain landforms are more vulnerable to damage from logging than others, and commercial logging operations catalyze agricultural land-clearing by making new forest areas accessible to settlement.[31] One proposal calls for importing countries to limit imports to producers that can certify their use of sustainable forest management techniques.[32] It is argued that this kind of restriction would increase the value of sustainably harvested tropical timber and thus increase incentives for conservation. Replacing the restriction with a labeling scheme, by which imports would all be permitted but customers would be informed of how the wood was harvested, would lessen the chances of a conflict with GATT. The effectiveness of such labeling would depend in part on the environmental awareness and opinions of customers.

It can also be hard to know *when* to apply trade measures for environmental purposes. If trade measures are intended to counter specific conduct by firms operating in other countries, it can be difficult to determine whether that conduct actually occurred. As the U.S. General Accounting Office recently found, monitoring and reporting about compliance with international environmental agreements generally is spotty .33

Under what circumstances are trade restrictions appropriate? The answer is not simple, and many factors could be considered, including some that could be unique to the specific case. Several factors are explored below, using for purposes of illustration the Montreal Protocol on Substances That Deplete

25 P. Anderson, "The Myth of Sustainable Logging: The Case for a Ban on Tropical Timber Imports," ***The Ecologist,*** vol. 19, No. 5, September/October 1989.

26 GATT Secretariat, "Trade and Environment" advance copy, February 1992, P. 28.

27 B. Johnson, *Responding to Tropical Deforestation: An Eruption of Crisis—An Array of Solutions* (Washington, DC: World Wildlife Fund and Conservation Foundation, 1991).

28 GATT secretariat, Op. Cit.

29 Ibid.

30 Zarsky, op. cit., Table 5, p. 64, derived from German Bundestag (ed.), Protecting *the Tropical Forests: A High priority International Task,* report of the Enquete Commission, "Preventive Measures to Protect the Earth's Atmosphere," Bonn, Germany, 1990.

31 *World* Rainforest Movement, *Rainforest Destruction: Cause, Effects & False Solutions* (Penang, Malaysia: Jutaprint), p. 51, cited in Carlos Alberto Primo Braga, "Tropical Forests and Trade Policy: The Cases of Indonesia and Brazil," draft prepared for the World Bank symposium "International Trade and the Environment," Washington, DC, Nov. 21-22, 1991, p. 8.

32 Zarsky, op. cit., P. 70.

33 U.S. General Accounting Office, *International Environment: International Agreements Are Not Well Monitored* (Gaithersburg, MD: January 1992).

the Ozone Layer.[34] The Montreal Protocol commits signatories to gradually phase out the consumption of certain "controlled substances. ' These are certain chlorofluorocarbons (CFCs), halons, and other chemicals that, when released into the atmosphere, deplete the Earth's ozone layer.[35] In addition to this underlying environmental measure, the Protocol has various trade provisions. The agreement currently commits signatories to ban the import of controlled substances from nonparties. Starting in January 1993, signatories are expected to have banned the export of controlled substances to nonparties. They are also to ban imports from nonparties of certain products containing controlled substances (such as refrigerators containing CFCs).[36] The agreement also calls for consideration of the feasibility of what could be called a process ban. Member countries are to determine the feasibility of banning imports from nonmembers of products that do not contain controlled substances but were produced using them (e.g., computer chips produced using CFCs as a cleaning solvent). For the first group of chemicals (those in the Protocol's Annex A), this determination is to be made by January 1994.[37] In all of these cases, trade would nevertheless be permitted if the nonmember could show that it is following the same phaseout schedules and trade restrictions that members are required to follow.[38]

The discussion below focuses on six factors that might be helpful in evaluating the relative appropriateness of trade restrictions. (The following section considers whether such trade measures might be inconsistent with GATT.) One consideration only touched on below is that countries have different environmental priorities (which are often correlated with differences in wealth and technical know-how), without which there would be much less reason for trade measures. The final section of this chapter will explore how those differences can affect the desirability and effectiveness of trade measures, and what alternative measures might be taken in light of those differences to reach environmental goals.

1) The conduct at issue has global environmental effects. Use of controlled substances by nonmember countries degrades the environment for all. Member countries therefore have a stake in trying to limit such use. The argument here is particularly strong because the link between CFC emissions and ozone depletion, with its potential for health effects, is widely accepted by the international scientific community .39

2) The trade measures are matched (though not completely) by domestic measures. As well as restricting trade, the members are phasing out their own use of controlled substances. Without the domestic measures, the trade restrictions might seem protectionist. Even as it is, the agreement might be seen as containing a protectionist element. For example, imports of CFC-containing refrigerators from nonmembers could be totally prohibited while some amount of domestic production is still allowed until completion of the phaseout schedule.

3) The trade measures are multilateral, with broad support. The Montreal Protocol now has 79 members. While membership is not universal (GATT has over 100 members), it is large, and accounts for the bulk of the production, consumption, and trade of controlled substances. A unilateral trade restriction might strike other countries as less justified and more susceptible of abuse (see ch. 5).[40]

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34 The Montreal Protocol is breed on the March 1985 Vienna Convention for the Protection of the ozone Layer. The Montreal Protocol w* signed in September 1987 and was amended by the London Revisions in June 1990. The amendments, which accelerated the phase out schedule, added new substances for control, and set up a fund to help developing countries comply, were to go into force by January 1, 1992, provided they were ratified by 20 countries. As of March 27, 1992, only 19 ratifications had been received; the amendments will take effect 90 days after the 20th ratification is received. (See London Revisions, Article 2). While the London Revisions were not in force as this report went to press, for convenience references to the Montreal Protocol denote the text as amended by the London Revisions.

35 As the term is used here, "consumption" occurs when a controlled substance is incorporated into a product or otherwise used. For example, putting chlorofluorocarbons (CFCs) into a refrigerator when it is manufactured would constitute consumption, while buying or disposing of such a refrigerator would not.

36 See Montreal Protocol, Article 4, paragraphs 1 through 3 bis.

37 Montreal protocol, Article 4, paragraphs 4, 4 bis.

38 Ibid., Article 4, paragraph 8.

39 See, for example, *Scientific Assessment of Ozone Depletion: 1991*, sponsored by the World Meteorological Organization, United Nations Environment Programme, National Aeronautics and Space Administration National Oceanic and Atmospheric Administration@ United Kingdom Department of Environment, preprint, Dec. 17, 1991, n.p.

40 Some years ago the United States imposed a unilateral ban on imports of CFC-containing aerosol products. However, that ban was nondiscriminatory because domestic production of those items was also prohibited.

4) There are positive efforts and incentives to encourage adherence by reluctant countries. Some developing countries have been reluctant to sign the Protocol because of the possibility it could interfere with their development plans or cause economic hardship. However, the Protocol grants developing countries slower phaseout schedules.[41] Also, a multilateral fund was set up to help developing countries comply, both by paying for technical assistance and by reimbursing some incremental costs.[42] While these efforts might not be enough to satisfy some developing countries, they are at least a step toward encouraging their participation.

Also, formal membership in the Protocol is not necessary to escape trade restrictions. It is enough if a country shows that it is abiding by the Protocol's norms. So countries that did not join because of political or other considerations can still be brought under its wing.

5) The trade measures are related to the conduct at issue. The trade measures concern the very products that have undesired environmental effects. At least on the surface, it seems reasonable to restrict trade in products whose manufacture or use cause the environmental harm at issue; even if another country does not change its behavior, the measures may do some good. (This possibility is explored in item 6 below.) In contrast, trade sanctions in products unrelated to the environmental problem would have value only if countries changed their behavior as a result, and might be considered unduly punitive.

6) How crucial are the trade restrictions to achieving the environmental goal? This is a fundamental question, since to the extent trade measures are not needed to achieve the environmental goal, they would not seem justified on environmental grounds (though they might still be justified on economic or competitiveness grounds, see ch. 4). However, in practice this question is difficult to answer. To answer this question confidently, one would have to examine the patterns of production, trade, and consumption in industries involving controlled substances. This would be beyond the scope of this background paper. The analysis below is hypothetical, illustrative of the kinds of considerations involved.

On one level, the trade measures could penalize nonmembers to some extent, and therefore could be an incentive to join. In this way, the restrictions might further the goal of preventing ozone layer depletion. However, trade restrictions tend to irritate the target countries, and it is possible that other measures more to their liking could also induce membership. Because the agreement already has two such measures to attract developing countries (slower phaseout schedules and a fund for technical and financial assistance), it could be argued that the agreement does not rely excessively on trade sanctions.

Also, a restriction on imports of products containing controlled substances (which is not yet in effect), and a restriction on imports of products made using controlled substances (whose feasibility has not yet been determined), could be needed in the future to remove a disincentive to joining. Without such restrictions, firms in nonmember countries might be able to sell (for example) CFC-containing refrigerators, or computer chips made using CFCs as a solvent, in member country markets while local producers could not. If CFC use made refrigerators or chips cheaper, the nonmember country would have a competitive advantage. Thus, countries (or their industries) could profit by refusing to join.

Moreover, these two trade restrictions could contribute to the Protocol's objective even when they do not induce a country to join. If imports of products containing or made with a process using CFCs were to remain permitted, and if use of those chemicals made the products cheaper, then manufacturers in nonmember countries might capture a large share of the world market for the products in question. Then, the world as a whole might continue consuming CFCs at a high rate, despite the bans in effect in member countries. On the other hand, under some circumstances these two trade restrictions might not be needed. If the ban on exports of controlled substances is effective, and if it is hard for nonmember countries to produce CFCs on their own,[43] then manufacturers in those countries might

41 Montreal Protocol, Article 5. In response t. new scientific evidence, the phaseout schedules for both developing and developed countries were accelerated in the London Revisions. In the future, additional scientific evidence might induce the parties to accelerate the schedules further, and it is possible that some or all of the developing country preferences could be removed.

42 Ibid., Article 10. An interim fund already has $200 million (see box 3-B).

43 The agreement also prohibits the export t. nonmembers of technology for making and using controlled substances. Ibid., Article 4, paragraph 5.

not have access to CFCs in the first place, in which case they could not make products containing CFCs or use CFCs in manufacturing processes. Another consideration is that the yet-to-be promulgated process ban (the ban on imports of products made using controlled substances) could be difficult to enforce, because it would require determining at the border the process by which goods were made, which might leave no trace on the product itself.

This discussion of trade measures under the Montreal Protocol is meant only to suggest the kinds of considerations that might apply. While the Montreal Protocol gives one paradigm for trade measures, there are several others, including those of CITES and the Basel Convention. The overall question of when trade measures are appropriate to reach environmental goals is only now being studied. One analysis tentatively suggests eight guiding criteria for when trade measures are appropriate to secure international environmental objectives. According to this analysis, trade measures should:[44]

1. Only be used in situations involving international externalities (e.g., transnational pollution or degradation of international common property resources);
2. Only be used when inducement or compensation type agreements are clearly unavailable or not effective;
3. Only be used when market type responses are clearly unavailable or not effective (i.e., product labeling or direct consumer action);
4. Only be used when there is strong evidence that the trade measure will be effective at accomplishing the environmental objective;
5. Only be used when there is clear evidence that the environmental benefit exceeds the abatement cost;
6. Only be used when the countries imposing the trade measures undertake appropriate protective measures themselves;
7. Be used with a presumption in favor of multilateral rather than unilateral application; and
8. Be used with a presumption that they are more acceptable if an international norm for environmental protection exists.

The first factor (translational versus localized pollution) is discussed in box 3-A. The second factor (use of inducement- or compensation-type agreements) is discussed later in this chapter and in box 3-B. The seventh criterion (the favoring of multilateral over unilateral measures) is discussed further in ch. 5.

More work would be needed in domestic, foreign or international forums (see chs. 2 and 5) to determine whether these or other specific criteria sufficiently encompass both environmental and trade concerns to make them suitable as guidelines.[45] Some such criteria or guidelines would help narrow the potential for trade/environment conflicts. But if, as seems plausible, trade measures likely will be necessary or desirable in some cases, the question arises of whether such measures are likely to conflict with GATT.

Trade Measures and GATT

Whether particular trade measures would conflict with GATT is hard to predict, in part because many pertinent issues have not been addressed directly in decided cases. However, analysts have identified at least three GATT provisions that environmentally oriented trade measures could violate: the most-favored-nation and national treatment rules, and Article XI, which generally prohibits import and export restrictions other than tariffs (see the annex to ch. 2).[46] If any of those provisions are violated, GATT consistency would then normally depend on whether the trade measure falls within any of the exceptions in Article XX (see the annex to ch. 2).

While several types of trade restrictions might be contested at GATT, the discussion below will focus on one type in particular: a "process restriction," or a restriction on imports of a product because of the process used to make the product. How GATT might

44 Charles S. Pearson and Robert Repetto, "Reconciling Trade and Environment: The Next Steps," December 1991 (prepared for the Trade and Environment Committee of the Environmental Protection Agency's National Advisory Council on Environmental Policy and Technology).

45 These forums include the U.S. Government interagency task force, the Trade and Environment Committee of the Environmental protection Agency's National Advisory Council on Environmental Protection and Technology, OECD, and GATT's Group on Environmental Measures and International Trade (see table 2-B and discussion inch. 2).

46 These free provisions are identified in the United States ' "Discussion Paper for OECD Joint Session on Trade and Environment Experts," dated Feb. 7, 1992. Also, OECD has done some work identifying possible GATT conflicts, though that work is not publicly available. One characteristic of the Basel Convention and the Montreal Protocol that is problematic under GATT is that nonmember counties are subject to different trade rules than member countries.

Box 3-A—The Global-Local Continuum

One difficulty in addressing trade/environmental disputes is the wide range of opinions about the nature, severity, and political responsibility for specific environmental problems. The rationale for using trade measures to achieve environmental objectives depends in part on how such problems are viewed by different countries. The breakdown below illustrates some of the possibilities.

Global and Transborder Environmental Problems

Some environmental problems (ozone depletion is perhaps the most conspicuous example) are global in nature-activity in one location can affect the Earth's environment as a whole. Some other problems, while not necessarily global, have impacts that cross national borders (e.g., sulfur dioxide emissions in one country contributing to acid rain in another).

On a common-sense level, other countries have a greater stake in a problem when it affects their own environment or the global commons. If pollution (or some other form of environmental degradation) extends beyond a country's borders, the polluting country may have less incentive to minimize that degradation than if all of the damage was contained domestically. Other countries may try to influence the polluting country to pollute less; when they succeed, global welfare may benefit.

Sometimes, countries will adopt international environmental agreements with trade provisions, such as the 17 agreements referenced in table 2-1. Multilateral agreements can have extensive, but seldom universal, support among trading partners; for example, while 79 countries have agreed to curb emissions of chemicals that deplete the Earth's ozone layer under the Montreal Protocol, there are over 100 members of GATT. There are also numerous bilateral environmental agreements, some of which have trade implications, However, countries sometimes take unilateral action to address a problem they think justifies trade measures, a step that can prompt resentment of others.

Localized Environmental Problems

The justification for influencing environmental conduct abroad is more difficult when the conduct appears to have only local effect. In this case, one country's lax environmental regulations might not pose an environmental problem for other countries. The level of regulation that serves one country's interest can differ markedly from what serves other countries' interests. Differences in industrial makeup can affect priorities in environmental regulations. Geographic and climatic conditions can influence the way in which air pollution disperses. Some ecosystems are more vulnerable to damage than others when exposed to similar kinds of pollution.

However, the line between local and nonlocal effects is inevitably arbitrary. Locally used toxic substances can be transported far from their points of origin. For example, pesticides, polychlorinated biphenyls (PCBs), lead, and dioxins are found in Arctic regions, including potentially hazardous levels of PCBs in the breast milk and blood of Inuit people in northern Quebec.[1]

Changes in the State of Knowledge

Another complication for trade/environmental policy is that, as scientific knowledge grows, actions once thought to have only local effect can become global problems in time, while other problems thought to be quite serious may come to be seen as less so. Activities as diverse as driving a car, using an electrical appliance, raising cattle, and cutting down trees are now widely viewed as contributing to global warming potential, a concern that hardly existed two decades ago. At the same time, some policies taken on the basis of precaution may need reevaluation as additional information is developed. For example, the U.S. Environmental Protection Agency is reevaluating dioxin standards. Stringent standards to control human exposure to dioxin were established in the mid-1980s. With increasing understanding of how dioxin works at the molecular level, some experts believe that certain U.S. dioxin standards need reevaluation. Recent research also suggests to some scientists that dioxin is a less potent carcinogen than suspected when initial standards were set. However, other adverse health effects may occur from low levels of dioxin exposure, thus complicating the reevaluation effort.[2] Risk analysis, to weigh risks against economic costs, is often proposed as a way to balance the costs and benefits of environmental regulation; others believe prudence dictates precaution.

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[1] Curtis C. Travis and Sheri T. Hester, "Global Chemical Pollution," *Environmental Science & Technology,* vol. 25, No. 5, May 1991, pp. 814-819. Travis and Hester refer to E. Dewailly et *al., Bulletin of Environmental Contamination and Toxicology,* vol. 43, 1989, pp. 641-46.

2 David J. Hanson, "Dioxin Toxicity: New Studies Prompt Debate, Regulatory Action," *Chemical & Engineering News,* vol. 69, No. 32, Aug. 12, 1991, pp. 7-14; Leslie Roberts, "Dioxin Risk Revisited," *Science,* vol. 251, Feb. 8, 1991, pp. 624-626; "Year-Long Reassessment Shows High Non-Cancer Threats of Dioxin," *Superfund Report,* March 25, 1992, p. 16.

(continued on next page)

Box 3-A—The Global-heal Continuum-Continued

Response to Risks

Governments vary in their response to environmental risks. Even affluent countries in recession find that immediate economic needs often take precedence over longer term environmental objectives, so that, for example, the employment and economic activity of a polluting industry is more readily viewed as outweighing environmental costs. For poorer countries, struggling to meet the population's basic human needs, the choices are often more stark. In principle, a country's preferred tradeoff of environmental and other goals would normally involve at least some level of environmental regulation; yet in some cases pollution has not been effectively regulated at all.

The environmental degradation now apparent in Eastern Europe and the independent states of the former Soviet Union provide some conspicuous examples of the latter. In some cases, well-known and readily available technologies for abating gross pollutants were forgone by Communist decisionmakers in pursuit of increased production. Despite official claims of environmental concern, the Ceaucescu regime in Rumania in some cases sought to develop industries to produce hazardous chemicals with few safeguards for the environment or workers; some of the chemicals were banned or highly regulated in the West.[3] Also, in what is now the Czech and Slovak Federal Republic, poor environmental regulation and enforcement have contributed to high levels of PCBs, lead, and other toxic materials in human tissue; frequent occurrence of respiratory disease in children; and, it is claimed, expected average lifespans that are low by Western standards (but similar to that of other Eastern European states).[4]

Industrial countries may neglect environmental and health concerns in the face of other national priorities. For instance, throughout much of the Cold War, U.S. defense facilities, including the nuclear weapons complex, operated with little environmental regulatory oversight. The result has been massive environmental contamination and potentially serious threats to health and the environment.[5] And industrial countries can also be shortsighted in evaluating environmental risks: waste disposal regulations that seemed adequate at the time have left the United States with a hazardous waste problem of massive proportions.[6]

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3 H. Jeffrey Leonard, *Pollution and the Struggle for the WorldProduct* (New York, NY: Cambridge University Press, 1988), PP. 150-153.

4 Bedrich Moldan and Jerald L. Schnoor, "Czechoslovakia: Examining a Critically Ill Environment," *Environmental Science and Technology,* vol. 26, No. 1, January 1992, pp. 14-21.

5 U.S. Congress, Office of Technology Assessment, *Complex Cleanup: The Environmental Legacy of Nuclear Weapons Production,* OTA-O-484 (Washington, DC: U.S. Government Printing Office, February 1991).

6 U.S. Congress, Office of Technology Assessment, *Superfund Strategy,* OTA-ITE-252 (Washington, DC: U.S. Government Printing Office, April 1985), pp. 5-17.

treat such restrictions is analyzed below, again using an example from the Montreal Protocol. In the future, the members of the Montreal Protocol might decide to ban imports from nonmembers of products made using certain substances that when released deplete the ozone layer. By using this example, OTA does not mean to suggest that a conflict between GATT and the Montreal Protocol is imminent or likely. Indeed, even the feasibility of such a ban is not due to be determined until January 1, 1994 for the first group of chemicals (those in the Protocol's Annex A); and for reasons mentioned earlier in the chapter, the members may decide that such a ban is either unnecessary or not feasible. Also, assuming such a ban did go into effect, the Montreal Protocol with the ban might at that time have enough support to receive a waiver of GATT's requirements, which requires a majority of GATT's members and two-thirds of those voting.[47]

The Montreal Protocol example is used to represent not a current controversy, but a general type of trade provision and GATT conflict that could be important. The management of important global environmental problems might require control over widely used processes. As discussed in the annex to chapter 2, trade restrictions based on those processes would likely often be prohibited by GATT unless they fit the Article XX exceptions.

While Article XX explicitly permits bans of imports made with prison labor, it does not have a similarly explicit exception based on the environment. Article XX has two paragraphs that might apply to many environmental measures. Paragraph (b) relates to measures 'necessary to protect human,

47 GATT Article XXV.

animal or plant life or health," and paragraph (g) relates to measures for 'the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption. '

At first glance, both of these provisions might seem to apply to the Montreal Protocol's process ban. Restrictions on imports of products made by using ozone-depleting chemicals could be necessary to stop release of those substances. Use of such substances in any country would deplete the ozone layer as a whole; that in turn would increase ultraviolet radiation exposure, resulting in harm to human health (e.g., increased incidence of skin cancer) and possible damage to animal or plant life as well, as specified in Article XX(b). Also, the ozone layer is a global resource that would be severely compromised by release of these chemicals. Thus, trade measures would conserve an exhaustible natural resource as specified in Article XX(g). Further, the trade measures would be accompanied by domestic restrictions on consumption of ozone-depleting chemicals, as referred to in Article XX(g).[48]

However, Article XX has been interpreted narrowly,[49] and it is questionable whether these Provisions would be interpreted so as to permit the process-based trade restrictions envisioned in the Montreal Protocol. The recent GATT panel report[50] in the tuna/dolphin dispute arising from the ban on tuna imports taken pursuant to the U.S. Marine Mammal Protection Act (MMPA) is an example.[51] While this report has not yet been adopted as an official GATT decision (see ch. 2), it does suggest how panels in future cases might reason. At issue was the U.S. ban on imports of tuna caught on the Eastern Tropical Pacific by foreign fishing fleets found to have incidentally killed more dolphin than permitted under MMPA. The United States argued that this ban was justified under paragraphs (b) and (g) of Article XX in order to protect dolphin. However, the panel stated that those paragraphs cannot be used to justify trade restrictions based on another country's internal regulations.[52] Otherwise, the panel wrote:

> Each contracting party could unilaterally determine the life or health protection policies [or conservation policies] from which other contracting parties could not deviate without jeopardizing their rights under the General Agreement.[53]

This reasoning suggests that the process-based trade restrictions envisioned under the Montreal Protocol might not be covered by Articles XX(b) or XX(g), because they, too, would be based on other countries' internal regulations. However, the panel's reference to *unilateral* action leaves open the possibility that trade measures under agreements with broad multilateral support (such as the Montreal Protocol or CITES) might be more acceptable.

The panel in the tuna/dolphin case had a second reason for its decision. It stated that paragraph (b) of Article XX applies only to life or health "within the jurisdiction of the importing country," and paragraph (g) applies only to production or consumption of natural resources "within [the] jurisdiction" of

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48 It could be argued that the domestic "consumption" to be restricted under Article XX(g) is the destruction of the ozone layer (the exhaustible natural resource) not of the ozone-depleting substances. However, the restriction of domestic consumption of ozone-depleting substances also acts to restrict domestic consumption (destruction) of the ozone layer.

49 Pierre Pescatore et al., *Handbook of GATT Dispute Settlement* (Ardsley-on-Hudson, NY: Transnational Juris Publications, 1991). This handbook indexes all dispute resolution panel reports that were adopted by the GATT Council from GAIT's creation through part of 1990. It indexes nine cases as involving or relating to Article XX (see page marked "Index 2/2"). Of these, two cases (Nos. 20, 65) do not appear to contain a ruling on Article XX's applicability; of the rest, six (Nos. 50, 54,66, 67, 74, 79) found that Article XX did not apply, and only one (No. 52) found that it did. The case finding that Article XX applied concerned Article XX(d), which does not pertain to environmental matters. Article XX(b) was not ruled on; in two cases (Nos. 50, 66) Article XX(g) was found not to apply. Those two cases are summarized in app. A; they are titled "United States-Prohibition of Imports of lima" (a 1982 case not be confused with the tuna/dolphin dispute arising from the U.S. Marine Mammal Protection Act) and 'Canada-Measures AffectingExports of Unprocessed Herring and Sahnon," respectively. Some of these panel reports express the opinion that panels should interpret Article xx narrowly.

One panel report adopted in 1990 is not included in this compilation. In that case, the decision found that Thailand's restriction of cigarette imports could not be justified under Article XX(b) (see app. A). Also of interest is the panel's report, not yet considered by the Council for adoption, in the tuna/dolphin case, discussed below. The panel reported that Articles XX(b) and XX(g) did not apply to a U.S. import ban against Mexican tuna.

50 "United States—Restrictions On Imports of Tuna," Report of the Panel, GATT Dec. No. DS21/R, Sept. 3, 1991. The case's history and status is discussed in the beginning of ch. 2; the panel's reasoning is discussed in the text below.

51 Public Law 92-522, as amended, notably by Public Laws 700-711 and 101-627.

52 Fishing by a vessel in international waters is governed by the domestic laws of the vessel's flag country.

53 Ibid., paragraphs 5.27, 5.32.

the importing country .54 Since the dolphin to be protected were outside the United States, neither case applied. Arguably, the import ban contemplated under the Montreal Protocol would be judged to pass both of these tests, at least when enforced by a nation below a threatened part of the ozone layer, because life and health in that country could be affected, and ozone depletion could occur in the air space over that country. However, given Article XX's history of narrow interpretation, and the reluctance of GATT panels to change or extend the interpretation of GATT law, it is not clear that a GATT panel would consider paragraphs (b) and (g) to apply.

The panel had yet a third reason for its decision, in the case of paragraph (b). The panel found that the United States' action was not "necessary" as required by paragraph (b) because the United States could have tried other approaches to protecting dolphin, notably negotiating an international agreement to limit dolphin catches.[55] It is not clear how hard a country would have to try to negotiate an agreement before trade restrictions could be justified as necessary. A developing country might challenge trade restrictions under the Montreal Protocol on the ground that more incentives to join should have been offered, although members of the Protocol could respond that the incentives offered were sufficient to attract many other developing countries. The panel also found that the particular scheme for calculating a foreign country's number of permitted dolphin kills-under which the foreign fleet could not know its limit for a particular year until the year was over—put a particular burden on trade, and that this burdensome scheme was not "necessary" under Article XX(b).[56] That consideration would not apply to the Montreal Protocol.

Article XX(b)'s necessity requirement had been interpreted before. In a case involving Thailand's restriction of cigarette imports, the panel's report, adopted by the GATT Council, stated that the requirement is satisfied only if "there were no alternative measure consistent with the General Agreement, or less inconsistent with it, which Thailand could reasonably be expected to employ to achieve its health policy objectives."[57] While this standard on the surface might seem reasonable, it could be difficult to frame measures that could withstand second-guessing in hindsight about what alternative measures could have worked as well.[58] In the case of the Montreal Protocol, a nonmember country might for example argue that if a gradual phaseout of domestic consumption of controlled substances is sufficient to meet environmental goals, than imports of products containing controlled substances need not be totally banned at the outset; a phaseout schedule should suffice for them too. Apart from how it has been interpreted to date, the plain meaning of the word "necessary" could be a significant hurdle for measures to be justified under Article XX(b). In the case of the Montreal Protocol, one could argue as described above that certain trade restrictions are needed to prevent use of controlled substances from simply migrating to other countries instead of decreasing. (In general, a case of necessity might be more easily made the closer trade is to being the cause of the environmental problem.)

In sum, it is possible but by no means certain that another panel would distinguish trade measures under the Montreal Protocol as sufficiently different from the tuna/dolphin case to justify a different result. It also bears noting that subsequent panels could decide that the panel in the tuna/dolphin case was mistaken. As mentioned, the panel report in the tuna/dolphin case has not yet been adopted as an official GATT decision (the case's status is discussed in the beginning of ch. 2); even if it is, GATT panels are not strictly bound to follow decisions in previous cases. The tuna/dolphin panel's reasoning has been criticized. According to one analyst, the historical derivation of the text in paragraphs (b) and (g) of Article XX suggests that they were in fact intended to cover import bans based on processes used abroad—for example, bans on matches made using phosphorous and on seals hunted in the water.[59]

54 "United States-Restrictions on Imports of Tuna," Report of the Panel, op. cit., paragraphs 26, 31.

55 "United States—Restrictions on Imports of Tuna," Report Of the Panel, op. cit., paragraph 5[28]."

56 Ibid.

57 This case is discussed in app. A. The quoted language is from paragraph 75 of the panel's report.

58 This "least restrictive means" standard also comes up in ch. 4 in connection with proposed Uruguay Round amendments regarding domestic environmental regulations; the issues are further discussed there.

59 Steve Charnovitz, "Exploring the Environmental Exceptions in GATT Article XX," *Journal of World Trade*, vol. 25, No. 5, October 1991, pp. 37,39,44-45,52-53.

However, dispute resolution panels are normally reluctant to extend GATT law by interpretation to accommodate new circumstances, preferring to leave that task to GATT's legislative process. The GATT panel in the tuna/dolphin case voiced this reluctance, noting that GATT's legislative process could:

> Address international environmental problems which can only be resolved through measures in conflict with the present rules of the General Agreement.[60]

Given this institutional conservatism and GATT's history of narrowly interpreting Article=, there is significant doubt as to whether process-based trade measures such as those contemplated under the Montreal Protocol would pass muster under GATT if challenged.

In the future, process-based import restrictions could arise in other contexts, such as, for example, greenhouse gas (GHG) emissions-whether applied unilaterally or multilaterally .61 Since GHG emissions occur with all fossil fuel use, most industrial production, and many activities associated with agriculture and forestry, it is possible that regulation of trade in a wide range of goods and services may eventually be proposed to achieve reduction in GHG emissions. Trade restrictions might arise in other environmental contexts as well. Many environmental issues are now under discussion internationally. As mentioned in chapter 2, the UN Conference on Environment and Development (UNCED) and related discussions may address many different questions, such as transboundary air pollution, forest use and management, pollution of the oceans, biodiversity, and waste management. It is possible that some of these discussions will lead in time to subsequent international agreements that contain trade measures. These measures might be patterned after those in the Montreal Protocol, CITES, or the Basel Convention, or r-night be of a different type.

How will GATT judge when to permit trade measures for environmental purposes? It seems likely that some trade measures will be deemed to violate some of GATT's specific provisions.[62] Then, whether a measure violates GATT would depend on whether any of Article XX's exceptions apply. While one cannot say with certainty, it appears likely that Article XX will tend to be interpreted narrowly. This could at times make it harder for nations to achieve environmental goals; certain trade measures necessary or desirable to that end might be hard to maintain in the face of GATT opposition, and GATT concerns might make it harder to adopt such measures. Also, GATT concerns might induce countries framing international environmental agreements to forego trade provisions that would help to enforce the agreements or otherwise make them more effective. Of course, Article XX might be amended to apply broadly in environmental matters. However, it might be difficult to enlarge Article XX's scope without also making it easier for nations to erect protectionist barriers through trade measures that they claim are needed for the environment.[63] To satisfy both trade and environment goals, it could be necessary to develop guidelines to help determine when trade measures are appropriate for environmental purposes.

What might those guidelines be? What use should be made of the six factors discussed above in connection with the Montreal Protocol, or the eight somewhat overlapping criteria listed thereafter? Should the amount of trade disruption be somehow weighed against the environmental risk, and if so will a GATT dispute resolution panel be able to perform such a task? Should trade restrictions be permitted based on a country's nonmembership in an agreement (as opposed to a country's actual environ-

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60 "United States—Restrictions on Imports of Tuna," Report of the Panel, op. cit., paragraph 6.4. Similar sentiments have been voiced before. See "United States-Taxes on Petroleum and Certain Imported Substances," Report of the Panel adopted June 17,1987, paragraph 5.2.6 (case is discussed in app. A); "EEC—Regulation of Imports of Parts and Components, " Report of the Panel, adopted May 16, 1990, L/6657, paragraph 5.28.

61 The European Community is planning legislation to reduce GHG emissions, though it is not yet contemplating trade measures (See bOX 2-A).

62 on likely exception concerns trade restrictions mirrored exactly by domestic regulations, such as a ban on importing products that are prohibited domestically. When such regulations concern only the product's own characteristics, rather than the process by which the product was made, it is likely that the import ban will be considered under GATT to be not a trade measure but an internal regulation, which normally would be permitted as long as it was not discriminatory (see the annex to ch. 2). This situation is discussed further in ch. 4.

63 Some in the trade policy community also are concerned that, if imports may be restricted due to the environmental practices used in their production, it would be hard to prohibit import restrictions based on other characteristics of the production process (such as wages and health benefits paid to workers). These restrictions too could be used as a cover for protectionism. The possible abuse of trade restrictions in the name of environment is discussed further in chs. 4 and 5.

mental conduct)?[64] For a trade measure to be "necessary' under Article XX(b), how hard must a country first try to negotiate an environmental agreement that would make trade measures unnecessary? While there is sometimes early warning about environmental problems, it can take many years before international consensus develops that a problem merits action. Sometimes a threat of trade measures might be needed to prompt timely action. How would a GATT panel decide whether that were so in a given case? Questions such as these have prompted the trade and environment policy communities to ask whether GATT should be amended to provide clearer guidance, and whether GATT's institutional structure will be adequate for making the kinds of judgments that may be needed. These questions are discussed in chapter 5.

ENVIRONMENT/TRADE AND DEVELOPING COUNTRIES: THE NORTH-SOUTH DEBATE[65]

The industrialized countries are the major contributors to many environmental problems, such as stratospheric ozone depletion, and (despite their often extensive environmental protection efforts) have major domestic environmental problems. (See discussion earlier in this chapter and box 3-A.) Moreover, per capita pollution and resource use is generally much higher in developed countries than in developing countries. For several reasons, however, the countries of the North, along with growing numbers of developing country citizens, are seeking stricter environmental regulation by governments in the South. Unless developing countries participate, some global environmental problems (such as ozone depletion or greenhouse gas emissions) will be very difficult to remedy. For example, efforts to protect the ozone layer would be jeopardized if developing countries were to deploy CFC-containing refrigerators in their efforts to enhance living standards. In other cases, the South's own development efforts can have global impacts-such as the biodiversity loss that can accompany the destruction of tropical forests or reefs. Developed countries also worry about competitive impacts of lax environmental standards in developing countries.

Many developing country governments see the North's environmental concerns as self-serving or paternalistic and even a potential assault on sovereignty. From their perspective, the North, which has prospered from a development path that has involved extensive environmental degradation, is asking the South to divert resources needed for development to environmental protection. Instead, many developing countries, in the preparatory meetings for UNCED, have sought for the developed countries to pick up most or even all of the added costs for environmental protection, and for the creation of a new "green fund" not administered through current multilateral assistance agencies. The South also has called for a "supportive international economic environment" to promote developing country growth and development through such means as market access, terms of trade, and transfer of technology on preferential and noncommercial terms.[66]

There has been general agreement that developing countries need financial help to achieve sustainable development. But there is deep division about specific levels and mechanisms. The developed countries vary in their willingness to pick up the costs, or to add to the current preferences given to developing countries. However, the United States and most other countries of the North generally envision gradual or modest increases in assistance, using current bilateral and multilateral funding mechanisms. (See box 3-B.) These sensitivities and issues, much in evidence at UNCED preparatory meetings, form part of the context of North-South environment/trade questions.

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64 Discrimination against nonmembers could adversely affect the United States. The United States could face restrictions on exports of recyclable hazardous waste because of its delay in ratifying the Basel Convention. "Talks Aimed at Continuing U.S. Hazwaste Exports Stall, But Hope Remains," *Inside EPA,* Jan. 17, 1992, p. 14; "International Business Group Urges Congress To Act on Waste Export Treaty," *Inside EPA,* Jan. 24, 1992, p. 15.

65 The terms "North" and "South" are a commonly used shorthand for developed and developing countries. Use of the terms is not intended to imply that countries' wealth or state of development follows geographic lines; neither is it meant to imply that developed and developing countries form monolithic camps.

66 For example, at a preparatory meeting for UNCED in 1991, China and the Group of 77 (a loosely organized group that includes most developing countries) proposed a negotiating text calling for an environmental fund to cover the "full incremental costs" of environmental measures without reallocation of developing country resources and "new and additional funding' rather than use of existing bilateral or multilateral development assistance. (As cited in UN General Assembly, Preparatory Committee for the United Nations Conference on Environment and Development Third Session, Geneva, Aug. 12-Sept. 4, 1991, Aug. 28, 1991, China and Ghana draft decisions: Financial Resources. A/Conf.151/PC/L.41.)

Box 3-B—Financing Sustainable Development and Environmental Measures in Developing Countries

No one really knows how much it will cost to address the environmental needs of the developing world. The Secretariat for the UN Conference on Environment and Development (UNCED), in estimating total costs for implementing the Conference's multifaceted agenda, estimated that about $15 billion (possibly more if conventions on climate change or biodiversity are adopted) would be needed for global environmental issues (defined to include only ozone depletion, climate change, biodiversity and oceans). Another $750 million per year could be needed to strengthen the capacities of international institutions. These figures pale against the Secretariat's overall estimate of the resources needed to implement UNCED's agenda: between $500 billion and $625 billion a year through the end of the century. Most of this appears to be for accelerated and sustainable development in developing countries.

The aggregate estimate is rough, and may be much overstated. The UNCED Secretariat, in releasing the estimate, cautioned that there could be substantial overlap among categories. For example, a major effort to achieve UNCED's agenda item for sustainable livelihoods might require infrastructure investments also counted in other agenda items (such as for human settlements, health, energy, reforestation, water systems and sanitation and education). Some part of these investments (reforestation, for example) might be considered environmental.

The lion's share of the total costs would be borne by the private sector or developing country governments as part of their development plans. However, the Secretariat estimated that $125 billion per year in donor country aid and confessional financing could be needed to catalyze developing country activities. This would be a substantial increase over current levels of development assistance.

Official development assistance (ODA) for *all* purposes by countries that are members of the Organisation for Economic Co-operation and Development averages around $50 billion per year. This amounts to about 0.35 percent of those nations' combined gross national product (GNP). An increase to 1 percent of GNP would produce $150 billion per year, according to the UNCED Secretariat, which notes that industrialized nation defense expenditures (in some countries amounting to 5 or 6 percent of GNP) are decreasing.[1] An increase to 1 percent would fall most heavily on the United States, which spends roughly 0.20 percent of GNP on ODA. (Among OECD countries, the United States ranks 13th in per capita aid; in absolute terms, Japan and the United States are the largest donors.)

Current Levels of Environmental Assistance

The amount of current assistance provided to developing countries for environmental projects is only a small part of total development assistance. However, bilateral and multilateral development assistance programs increasingly have environmental criteria and requirements—mostly to reduce the environmental impacts of development within the country receiving the aid.[2]

Developed countries now provide some assistance to help developing countries deal with global environmental problems through the Global Environment Facility (GEF).[3] Set up in 1990, GEF is a 3-year pilot program administered by the World Bank, the United Nations Environment program (UNEP) and the United Nations Development Program (UNDP). Through two closely coordinated funds-the Montreal Protocol Interim Multilateral Fund and the Global Environmental Trust Fund (GETF)-a total of $1.3 billion in technical assistance, transfer of technologies and financial support will be provided to developing countries for qualified projects.

The Montreal Protocol fund is intended to help developing countries with low per capita emissions of ozone-depleting substances phase out or avoid use of these materials. It now has $200 million for grants to such countries, with projects implemented by UNEP, the World Bank, and UNDP.

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1 Report of the Secretary General of the Conference, **"Financial Resources and Mechanisms," Preparatory Committee for the United Nations Conference on Environment and Development Fourth Sessions, New York, NY, March 2 to April 3, 1992, Plenary Session, A/Conf.151/PC/101 United Nations General Assembly.**

2 As cited in *Financing New International Environmental Commitments*, Report prepared for the Committee on Foreign Affairs Of the U.S. House of Representatives and the Committee on Foreign Relations of the U.S. Senate by the Congressional Research Service, Joint Committee Print (Washington DC: U.S. Government Printing Office, 1992).

3 GEF information is from the UN Development Program, the UN Environment Program and *the* World Bank, *Global Environment Facility*, Report of the Chairman to the December 1991 Participant's Meeting, Part I: Main Report, November 1991, and "Global Environmental Facility" (brochure, n.d., n.p.); and GEF Administrator's Office, "Future Evolution of the Global Environmental Facility: Issues and Options," first draft dated Jan. 24, 1992.

(continued on next page)

Box 3-B—Financing Sustainable Development and Environmental Measures in Developing Countries-Continued

GETF is the larger activity, with $1.1 billion committed to help developing countries participate in solutions to global environmental problems. Projects will fall in four areas: global warming, protecting international waters, preserving biological diversity, and ozone depletion. GETF can be used to help Eastern European and other needy countries that do not meet the per capita emissions requirement of the Montreal Protocol Interim Fund to phase out their use of ozone-depleting substances. By the end of 1991, 24 countries had contributed $800 million to a core fund. (This included contributions from several developing countries totaling $100 million.) In addition, five countries had agreed to cofinance about $250 million of support for related projects.

The Bush Administration, during climate change negotiations in February 1992, announced that it would commit $75 million in new funds for developing world environmental assistance. A total of $50 million of this would be for GEF; the remainder would be for bilateral aid for greenhouse gas inventories in the developing countries.

The decision to make a direct contribution to GEF was a change in policy by the Administration, which previously had only committed to what it called "parallel financing." This entailed counting of relevant environmental projects funded by U.S. Agency for International Development (AID) as the U.S. contribution. It plans $150 million of AID projects for such parallel financing during the 3-year GEF pilot project. Although they do not administer the U.S. projects, GEF administrators have agreed to include U.S. "parallel financing" in its estimate of country contributions to the funds.

In addition to AID, several Federal agencies that are primarily domestic in focus, such as the Environmental Protection Agency (EPA), the U.S. Forest Service, and the U.S. Fish and Wildlife Service, provide technical assistance to developing countries for environmental purposes, generally on a reimbursable basis.

The Administration has identified some special initiatives with environmental components. As has been mentioned, President Bush's Enterprise for the America's Initiative, which aims to promote Latin American economic growth through trade liberalization, investment, and debt reduction, has an environmental component. Other activities include environmental assistance to Eastern Europe and the U.S.-Asia Environmental Partnership, launched in early 1992. Several agencies are also cooperating in an a public/private Environmental Training Institute, to provide training to developing country officials and executives about environmental issues and technologies.

The Administration's proposed fiscal year 1993 budget also calls for a near doubling of funds for the U.S.-Mexican border environmental plan (from $103 to $203 million). These funds are not development assistance, as they will address environmental problems that affect both Mexico and the United States; Mexico plans to commit $460 million to border area environmental problems over a 3-year period. (U.S.-Mexico environmental issues are discussed inch. 2.)

Countries vary considerably in their ability and willingness to adopt domestic measures to protect the environment, and in the commitment they give to specific environmental priorities. Even the highly developed and generally affluent countries of OECD vary quite a bit in the priority they give to the environment. Some newly industrialized countries, while possessing the financial resources, have been short on political commitment and perhaps also technical know-how for environmental protection, although there are exceptions (Singapore, for example, has strong environmental policies). The countries of Eastern Europe and the Commonwealth of Independent States may recognize the severity of their environmental problems, but have few resources to address them.

The developing countries that comprise most of the rest of the world generally have limited means to deal with their serious environmental problems; they also vary in their interest and commitment. Many developing country governments believe the health and well-being of their citizens will be better served by an intense drive for economic development than by efforts to protect the environment. To these governments, the environment/development issue may still seem to be an either/or choice rather than

an effort to achieve complementary goals.[67] Some elements of government and society in many developing countries are aware that long-term economic prosperity will require improved management of environmental resources. The question is whether and how soon their views will be translated into effective policies and priorities.

Increased official aid is not the only mechanism for encouraging other countries to give more emphasis to environmental policy: several other options exist, some of which involve trade and trade measures. Some of the options that would be more palatable politically to developing countries would be less desirable from the viewpoint of developed countries, and vice versa.

As has been mentioned, trade measures are sometimes used to induce countries to change their behavior. The way in which trade measures are crafted could have important implications for their effectiveness. Such measures may be more acceptable when they are part of an international agreement. The Montreal Protocol, with its special provisions for financial assistance and support for technology transfer, is one model for encouraging developing country participation. Of course, trade measures taken under a multilateral agreement do not always have wide support; multilateral agreements can have few or many members.

In the absence of an international agreement, unilateral measures may seem justified in some cases. However, such measures are more likely to spark resentment, and might more easily run afoul of GATT, than an international agreement. (In the tuna/dolphin case, many nations made submissions criticizing the United States' unilateral trade measures).[68]

Innovative financing possibilities involving the trading system have also been proposed. For example, as a step toward internalization of environmental costs, countries might agree to a system of export levies (or import levies on products from noncomplying countries) on commodities like timber. The revenues raised might then be paid into a developing world environmental fund, or used by the developing world exporters for application of improved forest management practices or other environmentally preferable activities.

Another possibility would be to make achievement of environmental objectives a goal in bilateral or multilateral trade negotiations. As discussed in chapter 2, some contend that U.S.-Mexico environmental questions will not get the attention they deserve unless they are addressed in NAFTA itself, rather than in a track parallel to the main discussions. More generally, several bills or resolutions introduced in the 102d Congress propose to add environmental concerns to U.S. negotiating objectives in future trade discussions (see app. B). One purpose of these bills is to assure that U.S. environmental standards are not weakened in the negotiations process. (Some of the bills would also include labor standards in U.S. negotiating objectives.)

Through the give and take of trade negotiations, the developed countries of the North also could increase market access for the South's products, which would enable the South to pay for more environmental protection. As discussed earlier in this chapter, it might be possible to remove certain North-South trade barriers (such as barriers to agricultural products) in ways that might benefit the South economically and also contribute to environmental objectives if undertaken in an appropriate fashion. These measures might also benefit consumers in developed countries through lower product prices.

However, removal of specific barriers would adversely affect some U.S. industries, workers, and communities. Over the years, several types of worker or community adjustment programs have been created or proposed to deal with such adjustment problems.[69] Such programs can help. However, U.S. adjustment programs, as currently structured, are neither funded at adequate levels nor operated efficiently enough to have full effect. This is in contrast to the extensive adjustment assistance that is often available to workers in Europe or Japan when displacement occurs. Moreover, in many

67 *Financing New International Environmental Commitments*, Report prepared for the Committee on Foreign Affairs of the U.S. House Of Representatives and the Committee of Foreign Relations of the U.S. Senate by the Congressional Research Service, Joint Committee Print (Washington, DC: U.S. Government Printing Office, 1992).

68 "United States—Restrictions on Imports of Tuna," Report of the Panel, op.cit., section 4.

69 For a discussion of adjustment programs t. respond t. defense spending cutbacks, see Use Congress, Office of Technology Assessment, *After the Cold War: Living With Lower Defense Spending*, OTA-ITE-524 (Washington DC: U.S. Government Printing Office, February 1992).

communities, workers may have a difficult time finding new jobs of comparable quality to their lost jobs. Thus, in the absence of economic development or other public and private efforts that lead to new jobs, adjustment measures alone can be little more than a palliative. Adjustment policy in the 1990s will have to take into account the changing competitive position of the U.S. economy.[70]

Even if liberalized trade and investment produce more resources that could be used for environmental protection,[71] developing countries could still need financial and technical assistance and support for technology transfer in order to effectively implement environmental measures. Putting effective environmental programs in place is not a simple matter. Even governments that are committed to environmental protection may lack the requisite technical know-how, trained personnel, and administrative structures.

It seems unlikely that developed countries will double or triple their total official aid to the level said to be needed to catalyze full implementation of UNCED's agenda (see box 3-B). But, the alternative of inaction-and continued environmental degradation—will also have costs. Environmental problems, if left unchecked, could in time require enormous expenditures. As developing countries grow in population and try to climb the economic ladder, poor environmental choices could not only produce relatively more impacts on the global environment but also undermine efforts to improve their standard of living. Thus, it is likely to be ever more imperative that environmental degradation in developing countries be greatly reduced.

While there is agreement in principle on the need for transfer of environmentally sound technology on mutually agreed terms, substantial differences exist on how the terms should be defined. The North prefers technology transfer on commercial terms, although perhaps supported in part through financial assistance. The developing countries hold that the transfer of technology should be on a preferential and confessional basis. This debate has proceeded at a high level of generality, with limited consideration of specific technology availability .72 In some cases, technology already in use in developed countries could be readily employed in developing countries. Often, these technologies are nonproprietary.

Mechanisms for transfer will need to involve not only governments, but the private sectors of the respective countries, with opportunities for transfer occurring not just from but in some cases to developed countries. The potential for technology transfer and technology cooperation suggests that assistance is not always just an expense for a developed country; it can be an investment in developing future markets for environmental and other goods and services. Several countries with well-established environmental industries, including Germany and Japan, seem to view their foreign assistance in this way. U.S. industry is highly competitive in many sectors of the environment industry. In addition to official development assistance, several U.S. Government programs exist to facilitate commerce between U.S. firms and developing and newly industrialized countries. U.S. companies may be missing commercially attractive opportunities due to lack of information about such programs. Chapter 2 discusses some of these programs briefly, while the current and prospective market for environmental technologies and services is discussed in Appendix D.[73]

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70 For discussion of this changing position, see U.S. Congress, Office of Technology Assessment, *Competing Economies: America, Europe, and the Pacific Rim*, OTA-ITE-498 (Washington, DC: U.S. Government Printing Office, October 1991).

71 With three-fourths of the world population, developing countries account for only one-fifth to one-fourth of all direct foreign investment. Fifteen developing countries attracted 75 percent of this investment. The World Bank, *World Development Report 1991 (New* York, NY: Oxford University Press, 1991), p. 96.

72 Technology transfer issues are discussed in Report of the Secretary General Of the Conference, "Transferof Environmentally Sound Technology" (Section IV, Chapter 2 of Agenda 21), A/CONF.151/PC/100/add.9, Fourth Session, Preparatory Committee for the United Nations Conference on Environment and Development, March 2 to April 3, 1992.

73 Subsequent reports in this assessment will discuss technology transfer t. developing countries and the possible role of U.S. industry in providing environmental goods and services.

Chapter 4

Effects of Environmental Regulations on Trade and Competitiveness

Chapter 4
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The previous chapter discussed ways in which trade affects the environment, and the circumstances under which trade restrictions might be appropriate to reach environmental goals. This chapter considers how environmental regulations can affect trade and manufacturing competitiveness.

In some cases, domestic environmental regulations, particularly on products or product disposal, can act as ontariff trade barriers. Such measures are sometimes needed to achieve environmental goals. However, some fear that de-facto trade barriers will be erected under the guise of environmental protection. Sorting out the impacts of these measures on both trade and the environment can be difficult. The effects of environmental provisions on trade are not well understood.

At the same time, domestic environmental regulations, particularly on industrial processes, can put domestic firms at a disadvantage in international competition. (Regulations on products' inherent characteristics, use, and recycling or disposal would be less likely to have competitive impacts since these types of regulation would apply equally to imported and domestic goods.) A disadvantage might occur if competitors in a foreign country face weaker regulations and/or enforcement (and thus lower compliance costs). Domestic firms could also be disadvantaged if foreign firms face similar regulations but receive more government help in meeting them. This chapter considers the extent to which U.S. manufacturing firms suffer a competitive disadvantage, and possible responses to such disadvantage.

Over the years, many studies have examined the competitive impacts of environmental regulations for manufacturing. (This literature is reviewed in appendix E.) These studies are difficult to summarize and offer somewhat mixed conclusions. Some studies have not found a relationship between environmental regulation and trade and investment. Others judged the overall effect to be "small" or "insignificant," though there is no agreed notion of what those terms mean in this context. However, in certain sectors facing high environmental control costs, the effects on trade performance were larger. Serious problems with both the data and methodology of these studies make anything but limited and/or tentative conclusions problematic. Also, caution should be taken in applying these results to the present competitive and environmental climate. Much of this research involves data from the 1970s, when fewer U.S. industrial sectors were under as great competitive challenge from abroad. What were modest impacts 10 or 15 years ago might well be more troubling today when competition as a whole-arising from many nonenvironmental reasons-is more intense, and U.S. environmental regulation is more strict.

This chapter also discusses whether countervailing duties or other trade measures are likely to bean effective response when U.S. firms face possible competitive disadvantages from lax environmental standards in other countries. While such measures merit consideration, their effectiveness in remedying competitive impacts is limited. Other alternatives, such as negotiating with other countries to raise their standards, domestic support for research and development, and technical assistance to industry, may need equal or greater consideration in a strategy to maintain U.S. manufacturing competitiveness.

ENVIRONMENTAL REGULATIONS AS TRADE BARRIERS

As has been mentioned, governments use various means to regulate environmental conduct within their borders. They may regulate manufacturing processes, for example, by requiring permits for the release of pollutants. Countries also may regulate which products may be produced and sold, and how they may be used and disposed of. For example, a country might require cars to meet specified emissions standards; products not to contain banned compounds (such as polychlorinated biphenyls (PCBs)); and manufacturers to take back empty beverage containers for refilling and reuse.

To be effective, a country's system of regulations to some extent must cover imported products. A

country's internal regulations seldom extend to the process by which imported products are made.[1] But the regulations likely would subject imported products to the same standards as domestic products regarding the nature of the product (PCB-free equipment), its use (catalytic converters must operate effectively for a specified number of miles), and its disposal (reuse of beverage bottles).

Differences in internal regulations can impede trade: products made for use in one country might not meet another country's standards.[2] When standards can be harmonized, or made similar, trade can be more open, and trade disputes rarer. Thus, as recognized by the Organisation for Economic Cooperation and Development's (OECD) 'harmonization principle' (see ch. 2), harmonization can be a worthwhile goal. However, as OECD recognized, harmonization is not always appropriate or feasible; sometimes it makes sense for countries to have different standards (see ch. 3 and box 3-A).

The most comprehensive effort to harmonize environmental standards has been taken within the European Community (EC) (see box 2-A in ch. 2). EC's supra-national government facilitates harmonization. Outside the EC, standards harmonization has focused on nonenvironmental areas, such as technical compatibility of products, and has been achieved largely by the private sector. Harmonization of environmental standards requires governmental action.

The basic General Agreement on Tariffs and Trade (GATT) normally permits differences in internal regulations. Internal regulations need not be justified; GATT only requires that domestic goods and imported goods from all countries be treated in the same way (see the annex to ch. 2). Moreover, these regulations may be enforced against imported goods at the border: nations that ban, tax, or otherwise regulate certain domestic goods may ban, tax, or regulate the importation of those same goods.[3] The GATT Standards Code (which applies only among countries that have signed onto the Code) goes somewhat further, providing procedures and principles designed to minimize the trade effects of domestic standards (see the annex to ch. 2). The Standards Code also provides for challenges to domestic regulations as unduly restricting trade, although no such cases have been adjudicated. However, the Standards Code, like the basic GATT agreement, does not call for second-guessing a country's environmental policy or weighing the environmental benefit of a regulation against its disruption of trade. Rather, a country's environmental goals are taken as given, and trade effects of regulations are accepted as long as the regulations conform to GATT's requirements (e.g., no discrimination against foreign goods). This approach, while allowing countries flexibility in achieving environmental goals, also has the potential to permit protectionist regulations taken in the name of environment.

Quite apart from GATT's particular rules, it can be a complex task to judge the appropriateness of specific environmental measures with trade effects. A recent dispute between the United States and Canada over lobsters illustrates some of the difficulties (see app. A for further details). This dispute was decided by a binational panel under the terms of the U.S.-Canada Free Trade Agreement; however, under the terms of that agreement, the panel applied GATT law. Both U.S. and Canadian regulations prescribed a minimum size for harvested lobsters, to ensure that lobsters reached reproductive maturity before they were caught. Canada's minimum size was smaller because lobsters in Canadian waters reached reproductive maturity at a smaller size. However, the United States banned imports of live Canadian lobsters below the U.S. minimum. Canada saw this as an unfair trade barrier, holding that the ban was not necessary to protect lobster stocks. The United States argued it could not effectively enforce its domestic lobster conservation program if foreign lobsters under the U.S. minimum size were permitted in the U.S. market, because it was too difficult to determine lobsters' origin. The majority of the binational panel deciding the case did not evaluate what conservation benefit the U.S. regulation had, or

[1] Attempts to influence processes used abroad often take a more indirect form, such as threatened or actual trade restrictions. As discussed in ch. 3, such trade restrictions have greater potential to conflict with the rules of the General Agreement on Tariffs and Trade (GATT) rules than do the domestic environmental measures considered here.

[2] In this paper, "regulation" and "standard" are, unless otherwise specified, used interchangeably to denote requirements imposed by governments rather than actions taken voluntarily by firms.

[3] This is clearly so for regulations based on the product itself, but more doubtful for regulations based on the process by which a product was made. (See annex to ch. 2.)

weigh that benefit against trade disruption. Rather, it found the regulation proper because U.S. and Canadian lobsters were subject to the same specific requirements as U.S. lobsters.

As has been mentioned, GATT cases are not now decided by balancing environmental benefit against possible distortion to trade. Such a balancing has occurred in a dispute within the EC, where EC trade rules apply. This occurred in a case[4] involving a 1981 Danish regulation providing that gaseous mineral waters, lemonade, soft drinks, and beer could only be marketed in returnable containers, defined as containers for which there was a system of collection and refilling under which a large proportion of containers used would be refilled. Furthermore, except for some limited circumstances, manufacturers could only use containers the Danish Government had approved. Foreign companies perceived these requirements as unfair because returning containers for refilling would be much more costly for them than for local producers. Also, they were afraid the Danish Government might limit its approval to a few standard bottle shapes, thus prohibiting foreign companies from using distinctive bottles carrying brand recognition. The Danish regulation was also viewed with suspicion because it did not apply to milk and wine, two products for which Danish producers had little foreign competition.

The European Commission brought a complaint against Denmark, asserting the Danish regulation unduly restricted the free movement of goods among EC member countries. The Danish Government argued its measure was justified by environmental concerns. With regard to the deposit-and-return system for empty containers, the European Court of Justice (the EC's highest court) agreed with Denmark. It noted that protection of the environment is one of the EC's essential objectives, and therefore may justify certain limitations on the free movement of goods. Regarding the Commission's argument that there were less restrictive options available to the Danish Government, the court found that the trade burden of the Danish requirement for returnable containers was not disproportionate to its environmental benefits.

However, the court did find that the burden of requiring foreign manufacturers to use only government-approved containers was disproportionate to the benefit. It noted that a system for returning nonapproved containers was capable of protecting the environment, and observed that the volume of bottles at issue would be small in any case owing to the deposit-and-return system's substantial restrictive effect on imports.

This decision is an example of how a court or other dispute settlement panel could apply a proportionality test to balance competing objectives of free trade and environmental protection. Some critics argue that the court was too accepting of the Danish regulations, thus leaving the door open to protectionist use of environmental legislation.[5] Perhaps encouraged by this case, Germany has fashioned a tough law on recycling of packaging that also could put imported products at a disadvantage.[6]

Ultimately, both the EC and GATT face the same tough problem: how to leave leeway for legitimate domestic regulations for health, safety, environment, and similar matters, while at the same time preventing the use of regulations for protectionist ends. This can at times be a delicate balancing act; attempts to more fully satisfy one of these goals can frustrate the other.

The difficulties in striking this balance are apparent in the GATT Uruguay Round negotiations that focus on minimizing trade barriers. This negotiating goal was endorsed by Congress, which in 1988 listed "the reduction or elimination of barriers and other trade-distorting policies and practices" as one of three overall trade negotiating objectives, and also singled out "unjust~led phytosanitary and sanitary standards.

The "Dunkel draft" of proposed GATT Amendments under consideration in early 1992 would address this objective through a revised Agreement

4 The case is discussed in more detail in app. A.

5 It is worth noting that Denmark has had a highly concentrated beer industry. In the mid-1980s Carlsberg and Tuborg, both controlled by United Breweries, together had 70 percent of the Danish market for beer. See 'The Danish Bottles Case," an unpublished case study prepared by Ph.D. candidate John Clark under the supervision of Professor Scott Barrett, the London Business School, and supported by the Management Institute for Environment and Business, Washington, DC, 1991.

6 *Verpackungsverordnung* (Ordinance on the Avoidance of Packaging Waste), June 12, 1991.

7 Omnibus Trade and Competitiveness Act of 1988, Public Law 100-418, sec. 1101(a)(2), 1101(b)(7)(C).

on Technical Barriers to Trade (commonly called the Standards Code), and a proposed new Decision on Sanitary and Phytosanitary Standards (commonly called the SPS Code).* The draft would make the Standards Code a part of the basic GATT agreement,[9] at the same time strengthening some of its language. The Standards Code now states:

> Parties shall ensure that technical regulations and standards are not prepared, adopted or applied with a view to creating obstacles to international trade.[10]

The Dunkel draft would change the last part of the sentence to "with a view to *or the effect* of creating *unnecessary* obstacles to international trade. "[11] Thus, even if innocently intended, standards could be considered improper based on their actual effect. As to when an obstacle to trade is "unnecessary," the Dunkel draft adds:

> For this purpose, technical regulations shall not be more trade-restrictive than necessary to fulfill a legitimate objective, taking account of the risks non-fulfillment would create.[12]

The draft explains in a footnote that:

> This provision is intended to ensure proportionality between regulations and the risks non-fulfillment of legitimate objectives would create.[13]

In principle, there is nothing wrong with judging regulations on their effects as well as their intentions; a trade barrier does not become less harmful because it is unintended. It is also in principle proper to judge adverse trade effects by whether they are necessary to achieve an environmental goal, and whether a less trade-restrictive means could be found. It would be beneficial for those making environmental policy to anticipate possible trade effects, and to craft regulations to minimize them. In particular, just as environmental impact assessment is sometimes proposed to evaluate changes in trade laws, so might a trade impact assessment be appropriate for major changes proposed in environmental laws.

However, depending on how these proposed Standards Code provisions are interpreted, their practical effect might be to make it harder for nations to maintain legitimate environmental regulations. Such regulations could be subject to second-guessing: in hindsight, it might be easy to think of an alternative approach that would have had less effect on trade.[14] The requirement to use the least trade-restrictive means might be interpreted to mandate the use of more flexible (but seldom tested) forms of regulation (e.g., tradable over nontradable permits, or taxes instead of quantity limits), on the theory they pose less of an obstacle to trade, unless strong evidence showed the less restrictive form of regulation would not meet the environmental goal. Also, it could be difficult for a panel to determine whether certain less trade-restrictive measures could address environmental concerns effectively and in a timely manner.

Another amendment proposed in the Dunkel draft, the SPS Code, would cover regulations concerning the life or health of plants and animals, the diseases spread by them, and health and the healthfulness of foods derived from them.[15] This Code too would be made part of the basic GATT agreement. The proposed SPS Code requires standards to be "based on scientific principles and [not be] maintained against available scientific evidence.' '[16] While '[sanitary or phytosanitary measures which conform to international standards, guidelines or recommendations shall be deemed" to comply, stricter measures must have "a scientific

*The Dunkel draft, named for GATT's Secretary-General (see ch. 2), is set out in Multilateral Trade Negotiations, the Uruguay Round, Trade Negotiations Committee, "Draft Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations," Dec. 20, 1991, GATT Document MTN.TNC/W/FA.
Ch. 2 discusses certain other proposed changes found in the Dunkel draft, such as strengthened dispute resolution procedures.

9 The current status of GATT Codes is described in the annex to ch. 2.

10 GATT Standards Code, paragraph 2.1.

11 Dunkel draft, p. G.2, paragraph 2.2 (emphasis denotes words added).

12 Dunkel draft, pp. G.2-G.3, paragraph 2.2.

13 Ibid., p. G.3, footnote 1.

14 In interpreting GATT Article XX, some panels have found that alternative, less trade-restrictive approaches should have been tried. This occurred with the United States' case against Thailand concerning cigarette import licensing (see app. A), and in Mexico's case against the United States in the tuna/dolphin dispute (see chs. 2 and 3).

15 The complete definition of sanitary and phytosanitary measures is given in the Dunkel draft, p. L.45, paragraph 1.

16 Dunkel draft, p. L.36, paragraph 6.

17 Dunkel draft, p. L.37, paragraphs 10,11.

justification.' '[17] These provisions, like the proposed amendments to the Standards Code, are for a worthwhile purpose. If the scientific evidence behind regulations is never scrutinized, the door is opened to trade barriers. A case often cited in this regard is an unadjudicated dispute between the United States and the EC. The EC banned the import of beef from cattle fed certain hormones, even though the United States maintained there was no scientific evidence of a health risk. (See app. A.)

On the other hand, the proposed SPS Code could be interpreted so as to discourage legitimate SPS-related environmental regulations. How much scientific evidence will be required for "a scientific justification?' Scientific certainty is rare; usually scientists can at best agree on a range of outcomes, with estimates as to their probabilities. There is typically uncertainty regarding the severity of the effects likely to arise from particular forms of environmental problems. Would the SPS Code require, if not a scientific certainty, at least a scientific consensus that an outcome is probable? What if there is no scientific consensus? Would regulations be permitted in order to avoid a potentially catastrophic outcome that scientists agreed was possible but very unlikely, or that only a small minority of scientists thought possible? It is not clear how the SPS Code would be interpreted. At issue is who has what burden of proof. Some environmentalists hold that the term 'sound science" implies that those in favor of a regulation could have the burden of proving that it is justified. They would urge a "precautionary principle" that puts the burden of proof on those who challenge the regulation.[18] Since often neither side can actually prove its case, the allocation of the burden of proof is important. And whatever the scientific burden of proof is, it is not clear dispute resolution panels can reliably determine whether it is met; that task could be difficult even for international scientific organizations.

Even if there were no scientific uncertainty, it would still be unclear what constitutes 'a scientific justification.' While science can evaluate environmental risks, it cannot in the end determine how society should trade off environmental concerns against economic and other concerns. How much expense is justified in order to avoid a particular form of environmental damage or a particular health effect, or the risk of such effects? This cannot be answered in the abstract, nor can it be answered by scientists alone; it is a societal question, one that normally would be resolved at least in rough measure by a political process. It is not clear how GATT panels could judge for society what regulations are justified.

While the proposed SPS Code could result in GATT panels making the judgments described above, it would not necessarily be interpreted in that way. The staff of the U.S. Trade Representative (USTR) commented to OTA that the text (which refers to *'a"* scientific justification) and the negotiating history make it clear that: 1) when the scientific community is divided into two or more scientific positions, each country would be free to choose which of those scientific positions to adopt; and 2) each country would be free to make its own tradeoffs between environmental risk and other concerns.[19]

Also, some environmentalists are concerned the SPS Code recognizes the Codex Alimentarius Commission (CAC) as a source of international standards for food safety .20 CAC, which now sets voluntary industry guidelines for food safety, is jointly sponsored by two agencies of the United Nations, the Food and Agriculture Organization and the World Health Organization. U.S. delegations to CAC have had heavy industry representation and much less representation of environmental and consumer

18 The precautionary principle is aimed at ensuring that ''a Substance or **activity posing a threat to the environment is prevented** from *=-tie **environment, even if tbere is no conclusive scientific proof linking tbat particular substance or activity to environmental damage." James Cameron and Juli Abouchar,** "The Precautionary Principle: A Fundamental Principle of **Law and Policy for the** Protection of the Global **Environment,''** *Boston College International and Comparative Law Review,* **vol.** XIV, No. 1, 1991, p. 2.

19 **Personal communication with USTR staff, Mar. 27, 1992.**

20 **Dunkel draft, p. L.46, paragraph 3.**

groups; it is claimed that the same is true for other countries.[21]

The proposed Standards and SPS Codes also could call on GATT' members to make more effort than now required to get state and local governments to follow the Codes' rules. These proposed Codes provide that counties "shall formulate and implement positive measures and mechanisms in support of the observance of" the Codes' provisions by "other than central government bodies. "[22] In principle, it makes sense to require subnational governments to follow GATT's rules regarding technical regulations; indeed, subnational regulations, because they can vary from region to region within a country, have even greater potential than national regulations to disrupt trade. However, depending on how the Codes' other provisions are interpreted (including those discussed above), state and local governments might find it harder to maintain even legitimate environmental regulations, and a national government might find it harder to let them. Where a state's regulation was stricter than international norms, the state might face a heavy burden of justifying its deviation. In the United States, states and localities sometimes impose stricter standards or requirements than Federal Law.[23] Some states and localities have established their own materials and waste policies including deposit-refund and redemption value systems for beverage containers, minimum recycled fiber content for newsprint, and bans on particular materials (e.g., aseptic drink containers and polystyrene fast-food packaging).

In sum, the trade disputes and the proposed amendments just discussed highlight some issues likely to arise when the objective is to both promote liberal trade and foster environmental protection. Such a goal will likely require both informed scientific judgment on environmental risks and possible responses, and choices on how such risks should be balanced against other societal concerns. These judgments are not ones GATT dispute resolution panels, as now constituted, would seem well-suited to make; possible procedural modifications and institutional alternatives are considered in chapter 5.

EFFECTS OF LAX FOREIGN REGULATIONS ON MANUFACTURING TRADE AND COMPETITIVENESS

In examining whether lower environmental standards abroad should be met by trade measures to counteract possible adverse impacts on U.S. manufacturing firms, several complex questions need to be considered. One question is how standards compare. Standards are not *always* lower abroad. A few other leading industrial countries, such as Germany and Japan, have standards that are, at least on balance, roughly comparable to the United States. In some areas the United States may have higher standards; in other cases, Japan or Germany. (See

21 Dapne Wysham, "The Codex Connection, Big Business Hijacks GATT," *The* Nation, Dec. 17, 1990, pp. 770-773; Tom Hillard, *Trade Advisory Committees: Privileged Access for Polluter,* Public Citizen's Congress Watch, December 1991, pp. 27-28 (citing sources including *Report of the Nineteenth Session of the Joint FAO/WHO Codex Alimentarius Commission* (Rome, Italy: Food and Agriculture Organization of the United Nations and World Health Organization July 1991)); Charles Arden-Clarke, WWF International, *The General Agreement on Tariffs and Trade, Environmental Protection and Sustainable Development,* revised November 1991, p. 28. If an institution such as CAC has insufficient environmental representation, the institution might be made serviceable by changing the representation. In 1991, for the fiit time, the U.S. delegation to CAC included some representation from consumer groups. Tom Hillard, op. cit.

22 Dunkel draft, p. G.5, paragraph 3.5, and p. L.43, paragraph 45. The current Standards Code includes a similar duty, but uses weaker language, requiring that parties "shall take such reasonable measures as may be available to them to ensure that local government bodies within their territories comply." GATT Article XXIV, paragraph 12, contains similar language. However, the effective difference between the current and proposed language may be small. As this paper was going to press, The GATT Council adopted and released a decision interpreting the Article XXIV language to require that the national government make a "serious, persistent and convincing effort" to secure compliance by the local government with GATT's rules. "Canada-Irnport, Distribution and Sale of Certain Alcoholic Drinks by Provincial Marketing Agencies," Report of the Panel, Oct. 16, 1991, GATT Document DS17/R, paragraphs 5.35 through 5.39. That case concerned a U.S. complaint against alcohol regulation by Canadian provinces. The Article XXIV language is also pertinent to another very recent dispute, this one brought by Canada concerning state alcohol regulations within the United States. The panel's report in this case was given in mid-March 1992, to GATT's member countries, and at that time was thought likely to be considered at the April 30 GATT Council meeting. *Inside U.S. Trade, Mar. 20, 1992,* Special Report, p. S-1 (article prints sections 5 and 6 of the panel's report). The panel stated that the qualifications on the duty to make state and local regulations conform to GATT 'grants a special right to federal states without giving an offsetting privilege to unitary states, and has to be construed narrowly to as to avoid undue imbalances in rights and obligations between contracting parties with unitary and federal constitutions." Ibid., p. S-13, paragraph 5.79. The panel expressed the opinion that failure to force compliance is justified only when a country's "constitutional distribution of powers" prevents the national government from controlling measures by regional and local authorities. Ibid.

23 See, for example, 33 U.S.C.A.1370 in the Federal Water pollution ControlAct, and 42 U.S.C.A.7412(r)(11) (accident prevention provisions) and 42 U.S.C.A. 7429(h)(1) (solid waste incineration) in the Clean Air Act.

app. E.) However, some other OECD countries do have lower standards. Standards in developing countries are generally even lower. The case of greatest current interest is Mexico because of its common border with the United States and the possibility of a North American Free Trade Agreement (NAFTA) (see ch. 2). Another OTA study, expected to be issued in the summer of 1992, is examining the implications of U.S.-Mexico trade, technology, and investment in detail.

Newly industrializing countries such as South Korea and Taiwan, with substantial manufacturing capacity but weaker environmental standards, probably present the greatest potential difficulty. Taiwan is in the early stages of implementing environmental reforms; South Korea lags behind. Legal standards alone are an imprecise gauge of competitive impact; implementation and enforcement have to be taken into account. There may be more likelihood that environmental standards will be enforced and implemented in a country, like the United States, with open political processes and substantial opportunities for citizen action, than in countries with less open systems. Even when standards and enforcement are roughly comparable, governments can differ in the form of regulation, the level and kind of support (e.g., tax incentives, technical assistance) to help their industries comply with environmental regulations, and the nature of the relationship between government and industry. This subject will be addressed more fully in the final report in this assessment.

Another question to be considered is the degree to which regulations affect competitiveness. Although higher U.S. standards, when they are present, can constitute a competitive disadvantage for U.S. manufacturing in some sectors, there are many complicating factors. Some firms have implemented strict U.S. regulations in ways that reduce any competitive disadvantage or even create a competitive advantage. This can happen in two ways, only mentioned here but to be treated more fully in OTA's final report. First, compliance with higher standards can sometimes lead to process improvements that increase manufacturing efficiency.[24] Second, higher U.S. standards can put U.S. firms in the lead for technology to meet those standards. Being first with the technology could give U.S. firms an edge in countries that subsequently adopt similar standards. Higher standards can also give U.S. companies an edge in the market for environmental goods and services. Germany, the United States, and Japan are the largest producers and exporters of environmental equipment and services because of their relatively strict environmental standards. (See app. D.)

Various responses (including both trade and domestic measures) could be taken in cases where lower standards abroad do put U.S. firms at a disadvantage. A possible trade response would be to treat weaker foreign regulations as a subsidy, and to levy countervailing duties.[25] This approach has an appealing logic. According to economic theory, environmental regulations are supposed to "internalize' the costs of pollution to society; that is, to make the polluter pay those costs. When costs are internalized, the market operates more efficiently, producing private behavior that in theory maximizes social welfare. Compared to this situation, a failure to internalize costs of pollution amounts to a kind of market-distorting subsidy to the polluter. Under U.S. law, subsidized imports can sometimes be subject to countervailing duties. These are extra import tariffs designed to neutralize the effect of the subsidy, thus in principle counteracting a market distortion and removing U.S. firms competitive disadvantage.

Whether it would be appropriate to apply such duties to imports to adjust for lax (or nonexistent) foreign environmental regulations would depend on many factors. Some economists point out that more permissive regulations abroad do not necessarily represent a major distortion of the free, cost-internalized market.[26] Factors such as industrial makeup, population density, and social priorities (this latter influenced by the country's degree of wealth) enter into the calculation (see ch. 3). Nevertheless, regulations in other countries, especially in developing countries, are often less strict than would best serve that country's interest—especially in the longer term (ch. 3); in such cases, the absent or lax regulation distorts the market. Moreover, a country's regulations will not normally take into account harm done abroad by domestic

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24 U.S. Congress, Office of Technology Assessment, *Serious Reduction of Hazardous Waste: For Pollution Prevention and Industrial Efficiency*, OTA-ITE-317 (Washington DC: U.S. Government Printing Office, September 1986), pp. 6,20,77.

25 See app. B for discussion of some countervailing duty legislation proposed in the 102d Congress.

26 For example, see Judith M. Dean, *Trade and the Environment: A Survey of the Literature*, paper prepared for the World Bank, 1991.

activities that produce transborder or global environmental degradation; from the point of view of the world as a whole, this is another market distortion, which countervailing duties could address.

In particular, when transborder or global environmental degradation affects the United States, the environmental damage suffered in the United States might outweigh whatever bargain the price of the goods represents. In that case, countervailing duties could be appropriate to stop a transaction that hurts the United States. In a case of what seems to be purely local pollution, the goods' mode of production might not have an adverse environmental effect on the United States—but could have a competitive impact, depending on the industry.

Even when weak foreign regulations act as a market-distorting subsidy, it is not always in the United States' own economic interest to levy countervailing duties. This is true for subsidies in general, not just those in the form of lax environmental standards.[27] Also, levying countervailing duties based on the level of environmental standards could spark resentment, especially from developing countries. Some developing countries see protectionism as the motive underlying developed countries' efforts to raise developing countries' environmental standards (see ch. 3). Finally, countervailing duties on lax environmental regulations probably would be deemed to violate GATT. if challenged.[28] (It is unlikely GATT's members would agree to change this.) A unilateral U.S. decision to apply them could provoke rounds of retaliation and counter-retaliation.

Another concern is whether countervailing duties would be effective. The threat of trade measures such as countervailing duties sometimes can in itself prompt change in a foreign country's policies. However, OTA's previous studies on trade show the present countervailing duty laws are not very effective in counteracting foreign advantages. Reasons include: delay before duties can be applied; difficulty of discovering and proving subsidies; cost of legal proceedings as a disincentive to seeking relief; difficulty in quantifying subsidies; and difficulty of satisfying the injury requirement.[29] To some extent, these problems could be ameliorated. For example, the government could pursue cases on its own, without waiting for industry (as is now permitted under U.S. law but very rarely done), and the injury test might possibly be made easier to satisfy under U.S. law. Even with these changes, questions about effectiveness would remain. The use of countervailing duties as a response to inadequate environmental standards would probably suffer many of these same problems.

Treating weaker foreign regulations as subsidies would raise new issues in the administration of countervailing duty laws. To quantify the subsidies would require computing the hypothetical extra costs foreign firms would incur if they had to meet U.S. standards. It could be difficult to determine precisely what a foreign firm would have to do in this case, and how much it would cost (including time spent as well as money paid). Moreover, it is not clear what it would mean for a foreign country to have comparable standards as the United States. For example, a country that imposes less strict air pollution emission requirements on industry than the

27 Countervailing duties will often be beneficial to the country imposing them when foreign subsidies involve a key industry, one that contributes disproportionately to a country's wealth because of factors such as increasing returns to scale, increasing returns to learning, and technology spillovers to other industries. When a domestic industry experiences a sudden surge in competition from imports, countervailing duties can help to avoid sudden displacement of workers and facilities, and to permit orderly restructuring and downsizing to improve competitiveness. However, in both cases, domestic measures to aid the industry are normally preferable to trade measures. In general, whether countervailing duties are desirable is hard to say; it depends on many factors including the condition of downstream industries that use the imported item. U.S. Congress, Office of Technology Assessment, *Competing Economies: America, Europe, and the Pacific Rim,* OTA-ITE-498 (Washington, DC: U.S. Government Printing Office, October 1991), pp. 55, 122-124, 153-154.

28 While GATT does not precisely define the concept of subsidy and the matter is not free from doubt, a GATT ruling that countervailing duties are a permitted response to lax environmental regulations is unlikely. If countervailing duties were permitted to address how a firm benefits from lax environmental regulation, they might also appear justified to address benefits from lax governmental regulations in other areas such as labor, and worker health and safety laws. This would be quite an extension of the currently understood scope of permitted application of countervailing duties under GATT.

29 U.S. Congress, Office of Technology Assessment, *Competing Economies: America, Europe, and the Pacific Rim,* OTA-ITE-498 (Washington, DC: U.S. Government Printing Office, October 1991), pp. 138-154. The injury requirement is the requirement to show that the domestic injury suffering or threatened with material injury. GATT normally permits countervailing duties only if this showing is made. As interpreted by the International Trade Commission and the courts, this requirement has often been difficult to satisfy, especially for industries promising growth and high reward. However, since countervailing duties based on low foreign environmental standards are probably to begin with inconsistent with GATT, there might be no compelling reason for U.S. law to include the injury requirement in this context.

United States might still achieve the same or abetter level of ambient air quality. The other country might have less industry, or might have topographic features that discourage atmospheric inversions. Other problems could arise. Standards can vary from state to state within the United States. Also, different countries might frame regulations in ways that make comparisons difficult.[30]

A possible alternative to countervailing duties would be some form of border tax adjustment (defined below). Border tax adjustments could only be applied when domestic environmental requirements take the form of a tax on a product. Since this is seldom the case now, the immediate opportunities would be limited. There could be different ways to apply a border tax adjustment, each with different strengths and weaknesses as to GATT consistency, administrative workability, and achievement of environmental objectives. No approach is fully satisfactory.

If a nation taxes a domestic product, GATT, as it has been interpreted, permits the nation to levy an equivalent tax (a "border tax adjustment") on the same product when it is imported, regardless of how that product is taxed abroad. When the taxed product is incorporated into a downstream product, GATT has also been interpreted to permit an equivalent tax on the import of that downstream product (again, a "border tax adjustment' '), based on the quantity of the first product present. These interpretations were made in a dispute concerning U.S. taxes under the 1986 Superfund Amendments and Reauthorization Act, in which the United States taxed domestic and imported petroleum, certain domestic and imported feedstock chemicals, and imported products derived from those chemicals.[31] While there is no guarantee, it appears probable that GATT in the future would be interpreted along the same lines.

A border tax adjustment might be applied to neutralize the foreign advantage of more permissive environmental regulation of manufacturing processes. However, to do so, domestic regulations would need to be changed so as not to regulate a polluting process as such, but instead to tax a product. (There could for example be an excise tax levied when the product is first sold.)

One approach would be to tax a product that happens to be the end product of a polluting process. This would be easy to do administratively, and would probably be deemed GATT-consistent. This approach might reach the economic objective of preventing competitive disadvantage; however, an end-product tax could have perverse results from an environmental standpoint. If the taxis on the product as such, it would not depend on what production process was used; there would thus be no incentive for domestic or foreign manufacturers to reduce pollution, and no incentive for foreign countries to adopt regulations limiting that pollution.

An alternative approach would be to adjust the end-product tax depending on the process used both at home and abroad. This would restore incentives to minimize environmental degradation. However, GATT would likely prohibit such taxes if they were challenged.[32] Also, such a tax would face some of the same formidable administrative problems that the countervailing duty approach would entail. The government would need to investigate the process by which foreign and domestic goods are made, and periodically update that information. Separate investigations would be needed for each product from each country, and perhaps broken down by companies within a given country. Only then would the government know enough to apply the tax.

Another approach would be to tax not an end product but a raw material to a polluting process,

30 The countervailing duty approach aims t. remove the competitive disadvantage to U.S. firms only in the U.S. market. It has been proposed that the competitive disadvantage facing U.S. exports could be addressed by an export subsidy. When a good is sent to a country where that good is cheaper to make because of less strict environmental standards, the U.S. Government could pay a subsidy to makeup that difference. Most export subsidies would violate GATT; export subsidies also would present the same practical and conceptual problems discussed above in identifying and quantifying the cost differences due to different environmental regulations. The export subsidies would also cost the government money.

31 The case is described in app. A. The taxes on imports were found to be permitted under GATT so long as imports were taxed at the same rate as domestic goods. The U.S. law in some cases taxed imports at a higher rate; that feature was found to violate GATT.

GATT also permits the taxes to be rebated when products are exported, regardless of how the products are taxed in the destination country. See GATT Subsidies Code, Annex (Illustrative List of Export Subsidies), items (g), (h).

32 The decision in the Superfund case did not make it explicitly clear that GATT would prohibit such taxes. However, a tax that depends on the manufacturing process used seems outside the purview of the border tax adjustment doctrine as set out in that case; and such a tax would likely be deemed to violate the most-favored-mtion and national treatment requirements because they treat physically identical products differently based on their origin (see annex to ch. 2).

such as fossil fuel.[33] This could encourage pollution prevention and resource conservation by domestic manufacturers, since the more fuel or material a manufacturer consumes, the more tax it would pay. Imports of products could be taxed based on the fossil fuel or material used to produce the product, again providing an incentive for conservation. This approach would likely be deemed consistent with GATT, at least under some circumstances.[34] However, it would have the administrative problem of determining amounts of the raw material used in processes at home and abroad.[35]

Despite the cautions raised above, trade measures such as countervailing duties or border tax adjustments might still be considered as part of a strategy to safeguard U.S. competitiveness. In this regard, several alternative approaches might be considered either separately or in tandem with trade measures. One approach would be to use negotiations or other means to encourage other countries to adopt similarly strict regulatory approaches. The 1990 amendments to the Clean Air Act, for example, call on the President to report to Congress with an evaluation of competitive impacts and a strategy for addressing impacts through trade consultations and negotiations (see ch. 2 and app. E). In the NAFTA negotiations and parallel-track environmental discussions, the attraction of increased access to the U.S. market has become an incentive for Mexico to strengthen its environmental regime. In other circumstances where new trade agreements with developing countries are anticipated, it might be appropriate to begin discussions on environmental matters well before trade discussions begin. The United States very likely would need to offer technical and/or other assistance to help these countries develop and implement higher standards (see ch. 3). While current budgetary constraints limit options, initial steps might include technical assistance to developing countries for planning, institution building, and pilot projects on the environment.

Also, as discussed below, domestic policies could play an important role in ensuring U.S. competitiveness. Strategic use of domestic policies may make trade responses to lax foreign regulations unnecessary.

GOVERNMENT ENVIRONMENTAL ASSISTANCE TO MANUFACTURING FIRMS

The discussion up to now has focused on trade measures as a response to a competitive disadvantage due to variations among countries' *regulatory strictness.* Trade measures are also urged by some as a response to a competitive disadvantage due to national variations in *government assistance with regulatory compliance.* For example, it is possible some countries that have standards roughly comparable to the United States may offer their firms more help (e.g., research and development support, technical assistance or other industrial services, tax incentives, and/or favorable financing) in meeting the standards. (Variations among national approaches will be more fully addressed in the final report of this assessment.)

Under current U.S. law, the government could in some cases levy countervailing duties on imported goods produced with the aid of subsidies. This would in principle be consistent with GATT, though amendments under consideration in the Uruguay Round would exempt some R&D assistance from countervailing duties.[36] However, in addition to the limitations discussed above, countervailing duties have very limited effectiveness in counteracting the effects of government subsidies that promote the development and application of new technology. Such subsidies can have an effect that grows with

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33 The EC is thinking of such a "carbon tax" along these lines, though it is not yet considering applying the tax to imports Of downstream products. (See box 2-A.)

34 The border tax adjustment based on raw materials used in the foreign production would appear to fall within the border tax adjustment doctrine of the Superfund case. However, the reach of tbat doctrine is not clear. It is possible, for example, that GATT would approve of the border tax adjustment if the taxis on feedstock chemicals, whose molecules are physically incorporated into the downstream product (as was so in the Superfund case), but not if it is on fuel, whose molecules are not physically incorporated into the downstream product. Also, on a practical level, verifying the amount of fuel used in a process could be harder to do than verifying the amount offeedstock chemicals used.

35 A product tax and border adjustment could also make environmental sense, and would be easy to apply, when concerned with the product's use or disposal. For example, a tax on products to represent their disposal costs would provide an incentive to minimize production and consumption of such products. However, in this case a *product tax* would not be needed to prevent a competitive disadvantage, since a tax on the *disposal* of end-products would have the same competitive impact on imported and domestic products.

36 Dunkel &@ pp. I.9, I.10. The Dunkel draft would also exempt certain subsidies for disadvantaged regions, which could include subsidies fOr environmental compliance. Earlier drafts of proposed amendments included a broader exemption for environmental compliance subsidies.

time, rather than dissipating with time as countervailing law assumes.[37]

Apart from questions of effectiveness and GATT consistency, it is worth considering whether it is appropriate for governments to respond with countervailing duties when other governments' provide environmental assistance. The answer depends in part on the type of government help. Some subsidies (such as permanent operating subsidies) can perpetuate inefficient activity. Other forms of assistance, such as support for the development and application of new technology, can produce broad societal benefits. Because firms cannot capture all the benefits their R&D brings to society, and sometimes cannot take the risks inherent in ambitious R&D programs, the free market acting alone will likely induce less R&D than would be best for society. Government policies thus have an important role in encouraging R&D, including environmental R&D.

Given the broad benefits of R&D, it is not surprising the Uruguay Round proposals would exempt R&D support from imposition of countervailing duties. This proposed change is in essence a recognition that R&D should be encouraged rather than discouraged. Similarly, OECD's Polluter Pays Principle, which states that firms should bear the costs of complying with environmental regulations, allows for a possible exception for government aid to promote development of new pollution control technologies and equipment (ch. 2).

Some other forms of government assistance, while not directly developing technology, can do so indirectly. An example: incentives to aid manufacturers or other customers purchase equipment embodying new technology. Japan gave an important boost to its computer industry by subsidizing and facilitating computer leasing.[38] Today Japan is supporting its fuel cell industry through anew policy of subsidizing fuel cell purchases;[39] it is also requiring utilities to reimburse fuel cell cogenerators of electricity. (Although an energy technology, fuel cells have environmental benefits over many traditional forms of energy generation.)

Given foreign governments' industrial promotion, and the limited effectiveness of countervailing duties, other possibilities might be considered as part of a strategy to help ensure that strict U.S. regulations do not disadvantage U.S. fins. Examples include government incentives for development of U.S. environmental technology and technical assistance to help firms adopt pollution prevention approaches. Previous OTA studies have discussed a broad range of domestic policy options to enhance manufacturing competitiveness in general.[40] The final report in this assessment will consider what domestic policies might be appropriate for competitiveness concerns arising specifically from environmental compliance.

Possible policies might be considered in the broader context of the emerging global opportunities in environmental technologies and services. As environmental concerns increase and environmental costs become a greater fraction of total manufacturing costs, access to improved environmental technology could be helpful to a wide range of industries. Increasingly, such technology will entail process and equipment changes that meet environmental objectives while improving the efficiency of manufacturing.

There is a growing global competition in the provision of environmental technology and services, a competition that will be discussed in detail in the final report of this assessment. Many U.S. environmental firms have focused on the U.S. market, which is by far the largest market for such goods and services. (See app. D.) Japan, which has used support for technology development and diffusion to promote many industries, including automobiles, semiconductors, and computers,[41] has began to use similar means to promote its environmental industry, through R&D support, export promotion, and foreign aid programs. Germany and several other European Community countries are also actively promoting their environmental industries, as is the EC itself.

37 See OTA, *Competing Economies*, op. cit., pp. 152-153 and footnote 162.

38 OTA, **Competing** *Economies*, **op. cit.,** pp. 261-262.

39 "MITI To Offer Subsidies to Energy Savers," *The Nikkei Weekly*, Oct. 12, 1991. Such institutions as hospitals, hotels, and schools were eligible for the subsidies, which were scheduled to begin in April 1992.

40 U.S. Congress, office of Technology Assessment, *Making Things Better: Competing in Manufacturing*, OTA-ITE-443 (Washington, DC: U.S. Government Printing Office, February 1990) and *Competing Economies*, op. cit.

41 OTA, **Competing** *Economies*, **op. cit.,** ch. 6.

Chapter 5

Trade and Environment Decisionmaking

Chapter 5
Trade and Environment Decisionmaking

Until recently, both the United States and international institutions dealt with trade and environment policies separately, with little attention to their interactions. Environmental considerations have been largely absent in the trade regime regulated by the General Agreement on Tariffs and Trade (GATT). Similarly, national environmental policies sometimes have been devised with little concern for possible trade effects.

Several international forums are now examining trade/environment interactions, as are various U.S. Government agencies through the interagency working group coordinated by the U.S. Trade Representative (USTR) (see ch. 2). This chapter discusses the possible need for trade/environment guidelines to facilitate better coordination of trade and environmental policies at all levels. It also reviews possible changes to GATT, such as special recognition of multilateral environmental measures and modification of dispute resolution procedures. The chapter further examines the U.S. environment/trade policymaking process as it relates to domestic competitiveness issues and development of U.S. positions in international forums.

GUIDELINES AND TRADE/ ENVIRONMENT INTERACTIONS

It might be easier to resolve trade and environmental disputes if broadly accepted guidelines were developed. Better coordination between trade/ environment policy could ameliorate the potential for conflict. To have widespread credibility, a process for developing guidelines on trade/ environment interactions ideally would need several features. Both developing and developed countries would need to participate. In some cases, the guidelines would have to consider the special needs of developing countries. The process would also need to involve both trade and environment agencies of participating governments and to safeguard both trade and environment objectives. Making the process open to public participation might give it more credibility with nongovernmental organizations (NGOs) and other interests.

In addition to GATT, other international institutions might contribute to the process. The most thorough discussion of trade/environment interactions to date has been at the Organisation of Economic Co-operation and Development (OECD). Because both trade and environment agencies are involved, OECD discussions may produce guidelines for addressing trade and environment questions in an integrated fashion. OECD members are working to revise the 1972 "Guiding Principles Concerning the International Economic Aspects of Environmental Policies' (see ch. 2). But OECD has no power to set policy for nonmembers. Moreover, developing countries are not OECD members and might not accept OECD's findings. Hence, further discussion and action in forums with broader membership will probably be required.

Various United Nations agencies might contribute. As discussed in box 5-A, the final preparatory meeting before the upcoming United Nations Conference on Environment and Development (UNCED) produced draft language on trade/environment matters, including some possible principles. Some of the UNCED discussion drew on provisional findings from a recent session of the United Nations Conference on Trade and Development (UNCTAD) which, among other things, considered several trade and environment issues within the context of sustainable developmental

New UN arrangements for coordinating environ ment/development issues may also emerge. Several alternatives were discussed in UNCED's preparatory meetings. One possibility would be to use the existing United Nations Economic and Social Council (ECOSOC) as a governing body to deal with en vironment/development connections. Another option would be to establish anew high-level multilateral coordinating mechanism. A third possibility could be to set up regionally or nationally focused mechanisms.

[1] Possible roles for UNCTAD in encouraging sustainable development and in addressing environment/trade issues were discussed by delegations to UNCTAD's eighth session meeting in Cartagena de Indias, Columbia, in February 1992. See, United Nations Conference on Trade and Development *A New Partnership for Development: The Cartagena Commitment*, Feb. 27, 1992, n.p.

Box 5-A—Trade/Environment and Sustainable Development: The UNCED Perspective

Trade and environment concerns will be considered cross-cutting issues, relevant to several agenda items, at the June 1992 United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro. Delegates at the final UNCED preparatory meeting (in March 1992) included several trade/environment principles in a draft text on international cooperation for providing a supportive climate to help developing countries accelerate sustainable developmental

The text calls on governments, through the General Agreement on Tariffs and Trade (GAIT), the United Nations Conference on Trade and Development (UNCTAD), and other multilateral forums, to "make international trade and environment policies mutually supportive in favor of sustainable development'; to clarify the role of GATT, UNCTAD, and other international organizations, including in conciliation or dispute resolution; and to encourage a constructive industry role in dealing with environment and development issues.

In a section on activities for "developing an environment/trade and development agenda,' the draft text calls on governments to encourage GATT, UNCTAD, and other relevant international and regional economic institutions to consider examining several propositions and principles. To paraphrase a few of these, the draft calls on these institutions to consider ways to:

. Avoid unilateral actions to deal with environmental challenges outside the jurisdiction of the importing country. Instead, environmental measures addressing transborder or global environmental problems should be based on international consensus.
- Deal with root causes of environment and development problems so as to avoid adoption of environmental measures that unjustifiably restrict trade.
- Ensure that environment-related regulations or standards (including health and safety standards) do not become a disguised restriction on trade.

Many of the provisions relate especially and explicitly to developing countries. For example, the draft calls on relevant institutions to:

. Encourage participation of developing countries in multilateral agreements through such mechanisms as transitional rules.
. Keep in mind the special factors affecting environment and trade policies in developing countries. It notes that environmental standards valid for developed countries may have unwarranted social and economic costs in developing countries.
. Encourage an open, multilateral trading system, supported by the adoption of sound environmental policies, that would have a positive impact on the environment and contribute to economic development.

The draft statement recognizes that trade provisions in multilateral environmental agreements in some cases have played a role in tackling global environmental challenges. It suggests several specific activities as steps toward improving the process of addressing environment/trade issues. These include:

. Conducting more studies to understand relationships between trade and environment for the promotion of sustainable development;
. Promoting dialogue among trade, developmental, and environmental communities;
. Clarifying the relationship between GATT provisions and multilateral environmental measures; and
- Ensuring public input in the formation, negotiation, and implementation of trade policies.

The suggested actions focus on trade and development needs. Less attention is focused on meeting environmental protection goals.

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1 Preparatory Committee for the United Nations Conference on Environment and Development, *International Cooperation To Accelerate Sustainable Development in Developing Countries, and Related Domestic Policies* (text submitted by the Chairman on the basis of negotiations held on document A/CONF.151/PC/100Add.3, Mar. 31, 1992). The statement will be printed in section 1, chapter 1 of Agenda 21. The draft identified four key items: 1) promoting sustainable development through trade liberalization; 2) making trade and environment mutually supportive; 3) providing adequate financial resources to developing countries and for dealing with international debt; and 4) encouraging macroeconomic policies conducive to environment and development.

The draft text adopted some language from the eighth session of the United Nations Conference on Trade and Development held in February 1992 in Cartagena de Indias, Columbia.

Whatever its specific form, such a coordinating institution might work with GATT (which is autonomous, but affiliated with the United Nations) and/or OECD to further develop some procedural and substantive guiding principles on trade and environment questions. To this end, participation by other international organizations (such as UNCTAD and the United Nations Environment Program) might be encouraged. Existing international environmental and scientific institutions could work with GATT to the same end. A few areas in which guidelines could be useful are identified below. (See also ch. 3.)

Some national environmental regulations might impede imports more than necessary (see, for example, the discussion of the Danish bottles case in ch. 4 and app. A). Application of existing GATT and OECD principles (such as national treatment and nondiscrimination, see chapter 2) have helped limit circumstances in which trade conflicts might arise. In addition, guidelines for balancing trade and environmental concerns would be helpful (see ch. 4)

Guidelines also might help identify appropriate and inappropriate circumstances for application of trade restrictions aimed at influencing environmental conduct by other countries. As discussed in chapter 3, many factors could be considered in evaluating whether such measures are appropriate—for example, the importance of the environmental problem, the domestic efforts made by the country or countries in question to address that problem, the efforts made to reach an agreement that would make trade measures unnecessary, and the financial or other impacts of the trade measures.

In particular, there might be a presumption in favor of multilateral action. To some, multilateralism confers more political legitimacy than unilateral measures. Unilateral measures often do not take foreign interests into account. As a result, laws and regulations can disadvantage foreign firms. This happened with a U.S. tax to pay for Superfund cleanup, in which the United States taxed imported petroleum at a higher rate than domestically produced petroleum (see app. A), and in the ban on certain tuna imports taken pursuant to the U.S. Marine Mammal Protection Act. In the latter case, U.S. tuna fishermen were given a freed limit of dolphin kills each year but their foreign counterparts did not know their limits for a particular year until the year ended.[2]

In the absence of effective international environmental agreements, some countries may view unilateral trade measures as playing a useful environmental role at times. In some cases, these measures or threat of their use may have induced countries to change their behavior more quickly than they otherwise might.[3] This may have happened with several threatened unilateral U.S. trade measures directed at conserving fish and wildlife. U.S. threats to employ Pelly Amendment sanctions[4] led to a commitment by Japan to phase out imports of hawksbill turtle shells.[5] Similarly, U.S. negotiations (backed up by possible use of import restrictions) have been effective in obtaining commitments from 14 targeted countries to change their shrimp catching practices to protect sea turtles.[6]

The justification for unilateral measures to regulate conduct abroad seems stronger when the environmental impacts extend beyond the targeted country. When the effect of the behavior abroad appears localized, trade measures may be harder to justify. However, it is by no means unprecedented for one country to seek change in another country's policies, even when those policies have only internal effects. For example, the United States has in some

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2 16 U.S.C. 1371(a)(2); "United States Restrictions on Imports of 'ha," Report of the Panel, Sept. 3, 1991, GATT Document DS21/R, paragraphs 5.2,5.28. This case is discussed in more detail in chs. 2 and 3.

3 As pointed out in a recent report by the U.S. General Accounting Office, it can be difficult to monitor countries' compliance with international agreements. U.S. Congress, General Accounting Office, ***International Environment: International Agreements Are Not Well Monitored,*** **GAO/RCED-92-43 (Gaithersburg, MD: U.S. Government Printing Office, January 1992).**

4 The Pelly Amendment is a 1971 amendment to the Fisherman's Protective Act of 1967. (Public Law 92-219, adding section 8 to the Fisherman's Protective Act of 1967, codified at 22 U.S.C. 1978.) It gives the President discretion to restrict imports of fish products or wildlife products from countries that engage in practices that diminish the effectiveness of international fishery conservation programs or international programs for endangered species, respectively. While the amendment restricts the President's discretion to measures sanctioned by GATT, what GATT permits is often not known for sure. Trade restrictions under the Pelly Amendment have never actually been imposed. If they are imposed in the future, it is possible that they would be found to violate GATT's rules.

5 S.S. Lieberman, "Japan Agrees To Phase Out Trade in Endangered Sea Turtles," *Endangered Species Technical Bulletin, vol. XVI, No. 7-8,1991.*

6 Report of the Secretary of State t. the Congress of the United States on the Status of *Efforts* fOr the Conservation and Protection of Sea Turtles Pursuant to Section 609 of P.L. 101-162, "The Departments of Commerce, Justice, and State, the Judiciary and Related Agencies Appropriations Act, 1990" (transmitted to Congress Feb. 5, 1991), p. 5.

cases made aid and trade relations contingent on a foreign country's human rights record; GATT itself permits members to ban imports of goods made with prison labor.[7]

Guidelines for national regulations with trade effects might also take into account the need to foster the development of environmental technology. Environmental regulations are sometimes an important driver of environmental technology. For example, national regulations pursuant to the Montreal Protocol, signed in 1987, prompted technology development enabling phaseouts of some categories of ozone-depleting chemicals at a faster pace than most thought possible. When an environmental regulation appears likely to accelerate technology development, that factor might weigh in its favor. Governments can further encourage the development of environmental technology by other means such as research and development (R&D) support and tax incentives. Trade rules might be adjusted to encourage such government action, as recognized in OECD's 1972 Guiding Principles and in the Uruguay Round proposal to exempt certain R&D subsidies from countervailing duties (see ch. 4).

ADDRESSING TRADE/ ENVIRONMENT ISSUES IN GATT

While helpful, guidelines on trade/enviromnent issues will not necessarily resolve conflicts that could arise within GATT. Mechanisms might still be needed for GATT members to finally adopt, agree to, or tap into such accommodations.

International environmental agreements might have a special claim in GATT; indeed, GATT's Secretariat has urged multilateral action with respect to the environment as a way of reducing the potential for conflict. GATT contracting parties could approve resulting trade measures in several ways, including:

- Formal amendment under Article XXX (in some cases requiring unanimous consent and in others two-thirds of all members);
- A waiver under Article XXV, paragraph 5; and
- Separate agreements (like GATT's current Codes).

None are fully satisfactory mechanisms.[8] In the short term the waiver is perhaps most promising. It could, for example, suspend application of GATT requirements for trade measures under specified environmental agreements for a certain number of years. Two-thirds of those voting and a majority of the total GATT members must vote for a waiver. It is easier to accomplish than formal amendments under Article XXX. However, it is not guaranteed that all signatories of a particular environmental agreement that are also members of GATT would vote to approve a waiver for measures taken under that agreement. If some members of the environmental agreement signed reluctantly, perhaps out of fear of trade consequences if they did not, they might ask for compensation in exchange for their vote for a waiver.

GATT also could be amended to automatically approve trade measures under agreements meeting certain criteria. This approach could be modeled on GATT Article XX(h), which permits an exception to GATT's rules for measures:

> . . . undertaken in pursuance of obligations under any intergovernmental commodity agreement which conforms to criteria submitted to the [GATT members] and not disapproved by them or which is itself so submitted and not so disapproved.

While Article X.X(h) has never been invoked, and the criteria to be used have never been established, one could in principle amend GATT to provide a similar mechanism for environmental agreements. However, an amendment to GATT's text is quite difficult to achieve. Also, thought would have to be given to the criteria for evaluating the trade provisions of particular agreements. These criteria might, for example, include the number of signatories, the openness of the negotiating process, and the relative roles of trade and nontrade measures.

Finally, some members of GATT could decide to develop a separate code or treaty for environment/ trade matters. Such agreements only bind those who accept it. However, its signatories could agree to apply guidelines or other trade/environment rules among themselves.

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[7] **Article XX(e).**

[8] **John H. Jackson, Hessel E. Yntema Professor of Law, University of Michigan School of Law, memorandum of Nov. 7, 1991, regarding "Changing GATT Rules" (prepared for the Trade and Environment Committee of The Environmental Protection Agency's National Advisory Council for Environmental Policy and Technology).**

Dispute Resolution Procedures

GATT's dispute resolution process was not setup to weigh the merits of competing environmental and trade claims. Yet such a weighing is likely to be needed in the future. Such weighing would first require understanding the limits of an often ambiguous body of scientific evidence. Members of a dispute resolution panel could not be expected to articulate a consensus in cases where the scientific community is divided. Scientific evidence is only one aspect to be weighed. Environmental disputes usually have societal dimensions that require judgments about how to balance environmental, economic, and other concerns, while GATT panels are intended to focus on a single dimension, trade law.[9] A GATT panel could more effectively make these judgments if it worked closely with international organizations with expertise in science, environment, and economic development. Requiring some panel members to possess scientific, environmental, and economic development expertise, as well as trade expertise, could help enable panels to be more effective in weighing interests.

GATT's process for resolving disputes is normally closed. Only governments have the right to make presentations to the panels. Public access to GATT panel proceedings is not allowed, and panel reports normally are not made public until adopted by the GATT Council.

A closed process might make it more likely that parties will settle their dispute without a formal ruling. However, the environment-related disputes brought to GATT are of interest to more than just the governments that are parties to the dispute; a more open process would better inform the panel and help countries weigh competing concerns. Public awareness can be especially important for environmental concerns, because it allows those concerns to be heard by governments.

GATT's dispute resolution process might be better able to address environmental issues if nongovernmental organizations (NGOs) were provided opportunities to present evidence and argument, and if there was prompt public disclosure of both submissions to a dispute resolution panel and the panel's report. NGOs (which could include business groups as well as environmental organizations) often have important information and perspectives; governments might not always present that information, either out of ignorance or for political reasons. Without this input, panels might be poorly informed about some dimensions of the dispute.

U.S. INSTITUTIONS

Closer coordination of trade and environmental policies would be useful. The United States also needs to develop positions as contributions to international forums such as OECD. This is one purpose of the interagency task force on trade and environment.

Policy coordination requires some agreement about goals. Given the different perspectives on trade and environment issues, developing agreement on goals may be difficult. Indeed, given the many agencies involved in the interagency discussions, differences in opinions about trade and environment matters, and how they should be addressed, no doubt will continue to exist.

Guidance from Congress might make the USTR-led interagency work group more effective and better able to resolve differences among agencies. Congressional oversight on the interagency process could be needed to ensure that U.S. negotiators have adequate policy guidance. It might help for Congress to encourage continuing coordination on trade and environment policy, so that coordination would persist despite changes of political party and policymakers.

At some point negotiations (and preparations for negotiations) must be conducted in confidence. However, while U.S. negotiators are still in the early stages of formulating positions, public involvement can contribute to effective policymaking by assuring that all views are considered. International discussions pertinent to trade and environment are progressing in GATT, OECD, and the United Nations. U.S. statements (or lack of statements) can even at this early stage affect the debate. In theory, this

[9] Under current practice, at least in principle, the adoption of the panel's report by the GATT Council is a step at which tradeoffs of different interests could be considered and a political consensus formed. **However, under revised procedures proposed in the Dunkel draft, the Council would lose that function since the Council's adoption of the panel decision (or the decision of an appellate body) would be virtually assured (see annex to ch. 2).**

might lock in U.S. positions before the public has much input into the process.[10]

Although some steps have been taken to broaden access to environment/trade policy discussions, public involvement in the interagency process has been limited. As mentioned in chapter 2, the U.S. delegation to some of the OECD trade/environment discussions has included one representative from an environmental organization and one representative from industry. These representatives have attended some interagency meetings. However, the group meetings are generally not accessible to the public; drafts of background and position papers have been slow to issue forth; and the Administration does not routinely keep the public abreast of developments in international forums or make available copies of public documents issued by those forums.

One issue of longstanding interest to Congress is the effect of environmental regulations on trade and competitiveness. Congress has expressed concern that strict U.S. regulations could harm U.S. firms. Even if regulations are agreed to internationally, the ability to monitor compliance is often doubtful,[11] so that U.S. firms could still be at a disadvantage. Attempts to understand these effects have been hampered by problems with methodology and data (see app. E). Congress might consider calling for assessment of trade and competitiveness impacts when it enacts major new environmental laws, as it did under the 1990 Clean Air Act Amendments (see app. E). If Congress were to establish one agency as the overall leader on competitiveness issues, an option examined in a previous OTA report,[12] that agency might be able to conduct such assessments more easily than any existing agency.

10 This may have already happened with the Dunkel draft. After the Dunkel draft was promulgated, *the* GATT Secretariat seemed quite surprised by the extent of opposition among U.S. environmental groups. This suggests that the GATT Secretariat had not been made sufficiently aware of U.S. environmental groups' opinion as it was putting the draft together. Now that the draft has been circulated, it is much hinder to change.

11 U.S. Congress, General Accounting offic, *International Environment: International Agreements Are Not Well Monitored,* RCED-92-43 (Gaithersburg, MD: U.S. General Accounting office, Jan. 27, 1992).

12 U.S. Congress, Office of Technology Assessment, *Competing Economies: America, Europe, and Pacific Rim,* op. cit., pp. 60-78.

Appendixes

Appendix A
Some Trade Disputes Pertinent to Trade/Environment Interactions

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GATT Disputes[1]

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8. In the Matter of: *Canada's Landing Requirement for Pacific Coast Salmon and Herring, Final Report* of the Panel (Oct. 16, 1989).
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Decisions of the Court of Justice of the European Communities

10. *Commission of the European Communities v. Kingdom of Denmark, 1988* E. Comm. Ct. J. Rep. 4607,54 Comm. Mkt. L.R. 619 (1989).

[1] All but two of these disputes resulted in GATT's adoption of the dispute resolution panel's report. The sixth listed dispute, the so-called tuna/dolphin dispute, has yet to be considered by the GATT Council. In the last dispute, concerning beef hormones, the United States unsuccessfully sought to convene a panel under the Standards Code.

Ch. 2 and the annex to ch. 2 give background on GATT that may be helpful in reading these case summaries, including a discussion of GATT Article xx.

The case summaries in this appendix are provided for the reader's convenience. By providing these summaries, OTA does not mean to take any position on how these cases should be interpreted.

GATT Disputes

1. United States: *Prohibition of Imports of Tuna and Tuna Products From Canada (1982)*[2]
Complaining Party: Canada

The impetus of this dispute was Canada's seizure of 19 U.S. tuna boats caught fishing inside Canada's 200-mile fisheries zone. The United States retaliated by prohibiting the importation of all types of tuna and tuna products from Canada pursuant to section 205 of the Fishery Conservation and Management Act of 1976. These events were part of a broader disagreement between Canada and the United States relating to jurisdiction over Pacific fisheries.

The GATT Panel first determined that the U.S. import ban constituted a quantitative "prohibition" for purposes of the general proscription against quantitative trade measures in GATT. Article X: 1. The panel determined that the ban did not fall under the exception in Article XI:2(c) for limits on agricultural and fisheries imports in connection with domestic production restrictions, even though the United States had limited the catch by U.S. boats of some species of tuna (e.g., Pacific and Atlantic yellowfin, and Atlantic bluefin and bigeye). The exception did not apply because:

(i) The ban applied to the catch of species (e.g., albacore and skipjack) whose domestic production-the United States had not limited;

(ii) The ban was continued even after the limitation on the domestic catch of Pacific yellowfin tuna was ended; and

(iii) While Article XI:2(a) (quantitative measures to relieve food shortages) and Article XI:2(b) (quantitative measures for grading and classification) cover both "prohibitions" and "restrictions," Article XI:2(c) extends only to "restrictions." The U.S. ban was a prohibition.

The panel then considered the United States' claim that its measure fell within the general exception in Article XX(g) for measures relating to the conservation of natural resources. Referring first to the limitations in Article XX's preamble (see annex to ch. 2), it noted that the United States "might not necessarily" have discriminated against Canada in an arbitrary or unjustifiable manner since it had taken similar actions for similar reasons against Costa Rica, Ecuador, Mexico, and Peru. Furthermore, according to the panel, the U.S. action did not constitute a "disguised restriction on international trade" because it "had been taken as a trade measure and publicly announced as such. "

This latter finding is important because it makes part of Article XX's preamble hollow.[3] If publicly announcing a measure is all that it takes to overcome the limitation against a "disguised restriction on international trade," then the limitation offers little help in screening or curbing protectionist trade restrictions posing as safety or environmental initiatives-thus perhaps bringing pressure to bear to interpret the individual paragraphs of Article XX restrictively. This interpretation of the 'disguised restriction" language was essentially followed in a 1983 GATT case, United States: *Imports of Certain Automotive Spring Assemblies.*[4]

The remainder of the panel's report was fairly straightforward. The panel noted that both Canada and the United States had agreed that tuna stocks constituted an "exhaustible natural resource" in need of conservation management for purposes of GATT Article XX(g). However, to fall within the ambit of Article XX(g), the United States needed to have acted in conjunction with restrictions on domestic production or consumption. The panel noted that the U.S. import ban on *all* tuna and tuna products from Canada went far beyond its restrictions on domestic catches of certain tuna species. Moreover, the United States offered no evidence of any restrictions on domestic consumption of tuna or tuna products. The panel concluded that the U.S. embargo did not meet the requirements of Article XX(g) and so was a prohibited quantitative restriction under Article XI:l.

2. United States: *Taxes on Petroleum and Certain Imported Substances (" Superfund Act") (1987)*[5]
Complaining Parties: Canada, European Economic **Community,** Mexico

Canada, Mexico, and the EC brought this case against the United States over the Superfund Amendments and Reauthorization Act of 1986 (SARA). As part of its reauthorization of the U.S. program to clean up hazardous waste sites, that statute provided for:

(i) A change in an existing excise tax on petroleum, which resulted in a higher tax rate on imported petroleum than domestic;

(ii) A continuation of an excise tax on certain "feedstock" chemicals; and

(iii) A new excise tax on certain imported substances produced or manufactured from such taxable feedstock chemicals.

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[2] **United States**: *Prohibition of Imports of Tuna and Tuna Products from Canada*, **Report of the Panel, GATT, BISD 29 Supp. 91 (1982). Note that the official GATT title for a panel report leaves out the name of the complaining country; it lists only the name of the country whose practices were under scrutiny. Unless otherwise noted, all panel reports are cited to** GATT's *Basic Instruments and SelectedDocuments (BISD). The* **citation in this footnote is to the** 29th Supplement volume, page 91.

[3] See Charnovitz, "Exploring the **Environmental Exceptions in GATT Article XX,"** *Journal of World Trade,* **1991, vol. 25, pp. 37,47-48.**

[4] **United States:** *Imports of Certain Automotive Spring Assemblies,* **Report of the Panel, GATT, BISD 30Supp. 107 (1983).**

[5] **United States:** *Trees on Petroleum and Certain Imported Substances,* **Report of the Panel, GATT, BISD 34 Supp. 136 (1987).**

The three complainants claimed that the new excise tax differential between imported and domestic petroleum was inconsistent with the obligations to treat imported and domestic products alike ("national treatment obligation") set forth in GATT Article 111:2. The EC also maintained that the new excise tax on certain imported substances made from taxable feedstock chemicals was not a proper border tax adjustment under GATT (see ch. 4 for a discussion of border tax adjustments). This was the only time that a GATT dispute panel had addressed the legitimacy of a border tax adjustment scheme intended to further environmental objectives.

The EC claimed the purpose of the new excise tax was to tax polluting activities occurring in the United States and to finance environmental programs benefiting only U.S. producers. The EC contended that the Organisation of Economic Co-operation and Development's (OECD) Polluter Pays Principle required the United States to tax just products of domestic origin because only their production gave rise to environmental problems in the United States. The threefold U.S. response to the EC's argument was that the purpose of the tax was irrelevant to its eligibility for border tax adjustment; that GATT did not incorporate the Polluter Pays Principle; and that, even if it did, the Polluter Pays Principle applies only to pollution incident to production, not pollution incident to disposal. The EC also challenged the new excise tax as inconsistent with the national treatment obligations of GATT Article 111:2 because there was no equivalent tax burden imposed on like domestic products. Finally, the EC claimed the national treatment obligations of GATT Article 111:2 were violated by the SARA provision authorizing a penalty of 5 percent of the appraised value of an imported substance against importers who fail to furnish information necessary to determine the amount of tax to be imposed.

The panel concluded that the tax differential between imported and domestic petroleum was indeed inconsistent with the national treatment obligations of Article 111:2. It rejected the United States' contention that the minimal impact of the differential did not nullify or impair benefits accruing to Canada, Mexico, and the EC on the grounds that Article 111:2 protected expectations about the competitive relationship between imported and domestic products rather than expectations about export volumes.

As for the eligibility of the excise tax on feedstock chemicals for a border tax adjustment on downstream imports, the panel noted that:

> [GATT's] tax adjustment rules . . . distinguish between taxes on products and taxes not directly levied on products; they do not distinguish between taxes with different policy purposes. Whether a sales tax is levied on a product for general revenue purposes or to encourage the rational use of environmental resources, is therefore not relevant for the determination of the eligibility of a tax for border tax adjustment.[6]

Thus, the key for the panel was that the excise tax was levied directly on products rather than the purpose of the tax. If it had been a tax not directly levied on products, such as social security or payroll taxes, then it would not have been eligible for border tax adjustment. The purpose of the tax, whether to raise revenue, to correct environmental problems, or to serve some other purpose, was irrelevant in the panel's view.

The panel pointed out, however, that the Working Party on Border Tax Adjustment agreed that the provisions of GATT on tax adjustment only prohibited contracting parties from having a *greater* tax on imported products than on like domestic ones; a country is free to charge the same tax, a lower tax, or none at all:

> Consequently, if a contracting party wishes to tax the sale of certain domestic products (because their production pollutes the domestic environment) and to impose a lower tax or no tax at all on like imported products (because their consumption or use causes fewer or no environmental problems), it is in principle free to do so. [GATT's] rules on tax adjustment thus give. . . [but do not oblige the] party the possibility to follow the Polluter-Pays-Principle. . . .

Noting that its mandate was to examine the case solely "in the light of the relevant GATT provisions,' the panel refused to consider the consistency of SARA's revenue provisions with its environmental objectives or with the Polluter Pays Principle. The panel suggested that if the EC wanted to pursue these points, the proper forum was the then moribund 1971 GATT Working Group on Environmental Measures and International Trade (see ch. 2).

As for the excise tax's alleged inconsistency with the national treatment obligations of Article 111:2, the panel observed that paragraph 2(a) of Article II provides that a tariff concession (that is, an agreement to limit a tariff on a particular product to a particular level) does not prevent the levying of a charge *equivalent* to an internal tax imposed on a like domestic product or on an article from which the imported product has been manufactured or produced in whole or in part. The panel cited the following example given by the drafters of GATT in explaining the word "equivalent" as used in the aforementioned provision:

> If a charge is imposed on perfume because it contains alcohol, the charge to be imposed must take into consideration the value of the alcohol and not

[6] In reaching its conclusion, the panel referred to the report of the 1970 Working Party on Border Tax Adjustments, BISD 18 Supp. 100 (1970).

> the value of the perfume, that is to say the value of the content and not the value of the whole" (EPCT/TAC/PV/26, page 21).

Thus, the panel concluded that the tax was not inconsistent because the imported substances were produced from chemicals subject to an excise tax in the United States, and the tax rate was determined in principle in relation to the amount of these chemicals used and not in relation to the value of the imported substance. If the excise tax had been levied on the appraised value of the imported substances themselves, the panel probably would not have found it consistent with Article 111:2.

Finally, the panel considered SARA's penalty provision. Under that provision, an importer failing to furnish sufficient information on an imported product composition to determine the proper tax could then be subject to a penalty tax of 5 percent of the appraised value of the imported substance. Since that rate was higher than the excise tax U.S. Customs might otherwise levy, the panel believed it was not in conformity with the national treatment obligations of Article 111:2. However, SARA permitted the Secretary of the Treasury to prescribe by regulation, in lieu of the 5 percent rate, a rate that would equal the amount that would be imposed if the substance were produced using the predominant method of production. Taking the U.S. Government's word that in all probability the 5 percent penalty would never be applied, the panel concluded that the existence of the penalty rate provisions as such did not constitute a violation of U.S. obligations under GATT.

This has implications for any border tax adjustment that Congress might consider to "level the playing field" for U.S. companies with regard to environmental standards. Such a program could require importers (and thus their foreign suppliers) to provide substantial data on process and product methods (PPMs) involved in the production of the imported goods (see ch. 4). The Panel report in this case suggests that an *ad valorem* penalty to force the production of such data, at least one that bore no relation to any actual difference in environmental standards, would run afoul of U.S. obligations under GATT. This could limit the GATT--consistent measures available to secure the information for the program to work efficiently and fairly.

3. **Canada:** *Measures Affecting Exports of Unprocessed Herring and Salmon (1988)*[7] **Complaining Party: United States**

The basic issue in this case was the GATT consistency of Canada's prohibitions on the export of certain unprocessed herring, herring roe, and pink and sockeye salmon ("unprocessed herring and salmon"). Canada did not dispute that such prohibitions were inconsistent with the terms of GATT Article XI:l, which provides that GATT members shall not institute or maintain prohibitions on the exportation of any product destined for the territory of any other member. However, Canada invoked as justifications for the prohibitions two exceptions in GATT:

(i) Article XI:2(b) permitting "export prohibitions . . . necessary to the application of standards or regulations for the classification, grading or marketing of commodities in international trade. '

(ii) Article XX(g) permitting any measure "relating to the conservation of exhaustible natural resources . . . made effective in conjunction with restrictions on domestic production or consumption.'

With regard to Article XI:2(b), Canada argued that its prohibitions were necessary to prevent the export of unprocessed herring and salmon not meeting its quality standards for these fish. The panel noted, however, that the prohibitions applied to all unprocessed herring and salmon, not just substandard specimens. The panel therefore found that the export prohibitions could not be considered as "necessary" to the application of standards with the meaning of Article XI:2(b).

Canada also argued that the export prohibitions were necessary to enable Canadian processors to develop a superior quality fish product for marketing abroad and to maintain their share of the Japanese market for herring roe. The panel found that the export prohibitions could not constitute regulations necessary for marketing under Article XI:2(b). The reason: the panel interpreted Article XI:2(b) to permit only export restrictions designed to promote sales of the *restricted product, while* here restrictions on the unprocessed product were designed to promote sales of the processed product.

The panel then considered whether Article XX(g) justified the export prohibitions. The panel agreed with the parties that salmon and herring stocks are "exhaustible natural resources" and that Canada's limitations on the harvesting of such stocks were "restrictions on domestic production" within the meaning of Article XX(g). The panel then examined whether the export prohibitions were "relating to" the conservation of salmon and herring stocks and whether they were made effective "in conjunction with" Canada's harvesting limitations. It interpreted these terms as requiring that the measure be "primarily aimed at" such conservation and "primarily aimed at" rendering effective such domestic restrictions. The Panel then determined that Canada's

[7] *Canada: Measures Affecting Exports of Unprocessed Herring and Salmon,* **Report of the Panel, GATT, BISD 35 Supp. 98 (1988). For further information on this case and the related case decided by a dispute settlement panel convened pursuant to the U.S.-Canada Free Trade Agreement, see T.L. McDorman, "International Trade Law Meets InternationalFisheries Law: The Canada-U.S. Salmon and** *Herring Dispute,* **"** *Journal of International Arbitration,* **December 1990, pp. 107-121.**

export prohibitions were neither primarily aimed at the conservation of salmon and herring stocks nor primarily aimed at rendering effective the restrictions on the harvesting of salmon and herring. This was because the export prohibitions did not limit access of domestic processors and consumers to salmon and herring supplies at all, and only limited the access of foreign processors and consumers to the unprocessed product.

On March 21, 1988, Canada advised the United States that it would accept the adoption by the GATT Council of the report of the GATT Panel and would act to remove the export restrictions. At the same time, it stated that it believed its conservation and management goals could not be met without a landing requirement.

In April 1989, Canada revoked its regulations prohibiting the export of unprocessed herring and salmon. At the same time, Canada introduced new regulations requiring the landing in Canada of: 1) all roe herring, sockeye, and pink salmon caught commercially in Canadian waters (species that were subject to the previous "process in Canada" rule), and 2) all coho, chum, and chinook salmon caught commercially in Canadian waters (species that were not subject to the previous 'process in Canada" rule). Under these regulations, salmon and roe herring had to be off-landed at a licensed "fish landing station" in British Columbia or onto a vessel or vehicle ultimately destined for such a landing station.

After consultations on these new regulations failed to resolve the matter, the United States decided to seek a dispute settlement panel to hear the dispute under the provisions of the Canada-U.S. Free Trade Agreement. The decision of that panel is described in case 8 below.

4. United States: *Section* 337 *of the Tariff Act of 1930 (1989)*[8]

Complaining Party: European Economic Community

This case concerned section 337 of the Tariff Act of 1930, which relates to unfair methods of competition and unfair acts in the importation of articles into the United States, or in their sales including the importation or sale of goods that infringe on valid U.S. patents. As such, this dispute did not involve environmental measures. However, the panel's interpretation of the word "necessary" in GATT Article XX(d) (excepting from GATT's obligations measures "necessary to secure compliance with laws or regulations which are not inconsistent with the provisions of the Agreement") has implications for how future panels might interpret the word "necessary" in GATT Article XX(b).[9] That provision provides an exception from GATT's obligations for measures 'necessary to protect human, animal or plant life or health."

The panel noted that the parties agreed that, for the purpose of Article XX(d), section 337 could be considered as measures "to secure compliance with" U.S. patent law. The conformity of U.S. patent law with GATT was not in question. **Thus, the** issue considered by the panel was the necessity of the section 337 system to enforce U.S. patent law.

The panel concluded that a GATT member cannot justify a measure inconsistent with another GATT provision as "necessary" in terms of Article XX(d) if an alternative measure that is not inconsistent with other GATT provisions is available. By the same token, it said that, in cases where a measure consistent with other GATT provisions is not reasonably available, a contracting party is bound to use, among the measures reasonably available to it, that which entails the least degree of inconsistency with other GATT provisions.

Applying these guidelines to the issue before it, the panel stated that its interpretation of the word "necessary" did not mean a GATT member could be asked to change its substantive patent law or its desired level of enforcement of that law, provided such law and such level of enforcement are the same for imported and domestically produced products. However, if a GATT member could reasonably secure that level of enforcement in a manner not inconsistent with other GATT provisions, it would be required to do so.

The panel rejected the United States' argument that it should consider whether section 337 as a system is "necessary" for the enforcement of U.S. patent laws rather than whether the individual elements of section 337 are "necessary." To do so, the panel said, would permit GATT members to introduce inconsistencies that are not necessary simply by making them part of a scheme containing elements that are necessary. In the view of the panel, what has to be justified as "necessary" under Article XX(d) is each of the inconsistencies that is found to exist with another GATT article.

This decision suggests that any environmental measure for which justification is sought under Article XX(b) is likely to incur considerable scrutiny by a GATT dispute settlement panel. Some scrutiny of a measure's necessity would seem desirable: if measures to protect life or health were given carte blanche under GATT, Article XX(b) could become a smoke screen for trade barriers. However, the decision's language could leave environmental measures open to considerable second-guessing. Even for

[8] *United States: Section 337 of the Tariff Act of 1930,* **Report of the Panel, GATT, BISD 36 Supp. 345 (1989).**

[9] **The panel in a subsequent case involving access of U.S. cigarettes to Thailand's market in fact relied on this case in interpreting the "necessity" requirement in Article XX(b). See the description of Thailand:** *Restrictions on Importation of and Internal Taxes on Cigarettes,* **Report of the Panel, GATT, BISD 37 Supp. 200 (1990), elsewhere in this appendix.**

reasonable measures undertaken with good intentions, it might often be possible in hindsight to find some way that the environmental objective could have been achieved with less trade disruption. Also, it is not clear that a GATT Panel would have the expertise to know if alternative actions would achieve the environmental objective. For example, if a problem is urgent, certain actions (such as negotiating an international environmental agreement) might take too long.

5. Thailand: *Restrictions on the Importation of and Internal Taxes on Cigarettes (1990)*[10] Complaining Party: United States

Thailand prohibited imports of cigarettes except under a license issued in accordance with its 1966 Tobacco Act. It had not granted a license for 10 years. In addition, until just before the panel heard the dispute, Thailand had maintained higher excise taxes on imported cigarettes than on domestic ones.

Thailand defended its action in part under GATT Article XX(b), which provides an exception from GATT obligations for measures "necessary to protect human, animal or plant life or health. " Thailand argued that its trade restrictions were "necessary" to: 1) make effective a domestic program to control smoking, and 2) protect its citizens from U.S. cigarettes, which had additives that might make them more harmful than Thai cigarettes.

This case was thus a further exploration of the term ''necessary,' which had been addressed first (in the context of Article XX(d)) in the panel report on United States: *Section* **337** *of the Tariff Act of 1930 (1989)* **(case 4** above). Following the reasoning in the earlier case, the panel found that the Thai actions were not "necessary" within the meaning of Article XX(b) since Thailand could have employed other means that were compatible with GATT to protect public life and health. Those other means included requiring greater disclosure of cigarettes' composition, banning cigarette advertisements, banning the use of certain additives, controlling price and retail availability, and establishing uniform taxes that did not discriminate between imported and domestic cigarettes.

In this **case,** the parties agreed the panel could consult with the World Health Organization (WHO) on technical matters. On the one hand, WHO acknowledged that in Latin America and Asia the opening up of closed markets dominated by a public tobacco monopoly had led to a rise in consumption. On the other hand, it believed that excise taxes to increase cigarette prices could fully offset the increased demand.

6. United States: *Restrictions on Imports of Tuna, Report of the Panel (1991)*[11] Complaining Party: Mexico

As of March 1992, the panel report had not yet been considered for adoption by the GATT Council, and the parties were attempting to settle the case, without a formal GATT decision. This case is discussed in detail at the beginnin g of chapter 2, and in chapter 3 in the section "Trade Measures and GATT.'

7. United States' Controversy With the European Community Over Beef Hormones

This dispute has not been the subject of a formal GATT dispute settlement panel report. However, it is an example of the potential for trade conflict over differences in product standards relating to environmental and public health or safety concerns.

In December 1985, the European Community adopted the "Council Directive Prohibiting the Use in Livestock Farming of Certain Substances Having a Hormonal Action (EC Hormone Directive) .12 When this prohibition ultimately went into effect on January 1, 1989, the EC banned the importation of all beef treated with growth hormones.[13] As a result, the United States lost an export market valued at approximately $145 million per year.[14]

The United States protested the adoption of the EC Hormone Directive, maintaining that it was not based on scientific evidence and so was a disguised barrier to trade. In January 1987, the United States requested consultations on the measure under the provisions of the GATT Standards Code.[15] When consultations failed to resolve the matter, the United States attempted to invoke the

10 Thailand: *Restrictions on Importation of and Internal Taxes on Cigarettes,* **Report of the Panel, GATT, BISD 37 Supp. 200 (1990).**

11 GATT Doc. *21/R* (Sept. 3,1991).

12 Council Directive 85/649,28 O.J. Eur. Comm. (No. L 382) 228 (1985).

13 The 1985 EC Hormone Directive was scheduled to become effective on January 1, 1988. A procedural challenge to the directive before the Court of Justice of the European Community led to it being declared null and void in 1987. However, the unaltered text of the nullified directive was readopted by the EC Council following a different procedure in March 1988. Council Directive 88/146, 311 O.J. Eur. Comm. (No. L 70) 16 (1988). This is the measure that became effective on January 1, 1989.

14 See ''The U< S.-EC Hormone Beef Controversy and the Standards Code: Implications for the Application of Health Regulations to Agricultural Trade," *North Carolina Journal of International Law and Commercial Regulation, vol. 14, No.* 1, winter 1989, p. 135. Other articles on this dispute include Holly Hammonds, "A U.S. Perspective on the EC Hormones Directive," *Michigan Journal of International Law,* vol. 11, spring 1990, PP. 840-844, and Werner P. Meng, "The Hormone Conflict Between the EEC and the United States Within the Context of GATT,'' *Michigan Journal of International Law,* vol. 11, spring 1990, pp. 818-843.

15 Agreement on Technical Barriers t. Trade, *opened for signature* April 12, 1979, 31 U.S.T. 405, T.I.A.S. No. 9616 (1979). Both the United States and the EC are signatones of this agreement.

Code's formal dispute settlement provisions. Among other things, it requested the establishment of a technical experts group pursuant to Article 14.9 of the Code to examine whether the EC Hormone Directive had any scientific basis and whether it could have been drafted as a technical product standard (prohibiting beef with hormone residues) as opposed to a production standard (prohibiting beef grown with hormones). One of the EC arguments against the applicability of the Code to the dispute was that the Code does not cover processing and production standards.

The EC blocked the U.S. initiative by calling for the establishment first of a panel of government officials to determine whether the EC was attempting to circumvent the Code. The United States blocked this in turn, and a stalemate resulted over the use of the Code's dispute settlement mechanisms.

In December 1987, President Reagan took unilateral action against the EC Hormone Directive by finding that it was a disguised barrier to international trade and so proclaiming retaliatory increases in import tariffs on certain EC products pursuant to section 301 of the Trade Act of 1974, as amended.[16] He suspended this retaliation for so long as the EC did not implement its directive. The retaliation was triggered on January 1, 1989, when the EC Hormone Directive took effect. In February 1989, the United States and the EC setup a bilateral Beef Hormone Task Force in an attempt to settle the matter or at least keep it from escalating further. These talks resulted in interim measures allowing some U.S. beef imports, and thus a reduction in the additional duties on some EC products. The issue continues to be a major concern in U.S.-EC trade relations.

Besides highlighting the inadequacies in the dispute settlement procedures of the GATT Standards Code (which both the United States and the European Community have attempted to address in the Uruguay Round), the dispute has left open the issue of whether the EC Hormone Directive is an unnecessary barrier to trade. The United States argues that there is no scientific evidence showing that proper application of beef growth hormone poses a threat to human health. The EC counters that there is no scientific evidence providing a guarantee that beef treated with growth hormone is totally risk free. The EC maintains that it should therefore have the right to adopt a precautionary ban on such products to protect its consumers.

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8. In the Matter of: *Canada's Landing Requirement for Pacific Coast Salmon and Herring, Final Report of the Panel (Oct. 16, 1989)*[17]

This case arose in the aftermath of the GATT panel report on *Canada: Measures Affecting Exports of Unprocessed Herring and Salmon* (case 3 above). After the GATT dispute settlement panel found Canada's prohibitions on the export of certain forms of unprocessed herring and salmon inconsistent with GATT, Canada advised the United States that it would accept adoption of the report by the GATT Council and would remove the export restrictions.

In April 1989, Canada revoked those prohibitions, but immediately introduced new regulations requiring the landing in Canada of: 1) all roe herring, as well as sockeye and pink salmon, caught commercially in Canadian waters (species that were subject to the previous "process in Canada" rule); and 2) all coho, chum, and chinook salmon caught commercially in Canadian waters (species that were not subject to the previous 'process in Canada" rule). Under these regulations, roe herring and salmon had to be off-landed at a licensed "fish landing station" in British Columbia or onto a vessel or vehicle ultimately destined for such a landing station, thus preventing direct at-sea sales and direct delivery by Canadian fishermen to U.S. ports.[18] The new regulations provided for the completion of catch reports and other data, as well as on-site examination and biological sampling by Canadian officials at landing stations.

The United States complained that although the new regulations were carefully worded to avoid the appearance of creating direct export prohibitions or restrictions, their clear *effect* was to restrict exports because of the additional burdens on U.S. buyers relating to the extra time involved in transporting the fish, extra cost involved in landing and unloading, possible dockage fees, and product deterioration resulting from off-loading. It noted that the burdens fell solely on exports and thus put U.S. processors at a competitive disadvantage since herring and salmon purchased by Canadian processors must of necessity be landed in Canada in any event.

When consultations between Canada and the United States failed to resolve this matter, the United States had the choice of seeking settlement of the dispute under either GATT or the U.S.-Canada Free Trade Agreement (FTA).[19] It chose to proceed under the latter agreement.

16 Trade Act of 1974, Public Law No. 93. 618, sec. 301, 88 Stat. 1978, 2364 *(1975), as amended, 19* U.S.C. 2411.

17 For additional information, see McDonnan, op. cit., footnote 8.

18 See McDorman, op. cit., footnote 8, p. 116.

19 Done at Washington, DC, Jan-2, 1988; came into force January 1, 1989; reprinted in 27 International Legal Materials (1988), pp. 281-402.

The dispute settlement panel assigned to the case was asked to consider whether the landing requirement was a measure prohibited by GATT Article XI (which FTA Article 407 incorporates into the FTA) and, if so, whether the requirement was subject to an exception under GATT Article XX (which FTA Article 1201 incorporates into the FTA). GATT Article XI prohibits quotas, license requirements, and other "prohibitions or restrictions" (other than tariffs) on, among other things, the "exportation or sale for export of any product destined for" another GATT member, while GATT Article XX lists general exceptions to GATT's obligations, including Article XX(g)'s exception for measures 'relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption. "

The panel first concluded that even if the term "exportation" in GATT Article XI was to refer to the act of exporting at the border alone, the concept of "sale for export' extends the coverage of Article XI to restrictions imposed at an earlier stage of the process, before the act of exportation itself. Thus, Article XI's applicability did not depend on whether the regulations constituted a border measure or an internal measure. The panel also concluded that the term "restrictions" in GATT Article XI encompassed more than just quotas and licenses for import or export.

The panel then rejected Canada's argument that GATT Article XI covers only measures that actually provide for different treatment of domestic and export sales. The panel stated that where the primary effect of a measure is in fact the regulation of export transactions, the measure may be considered a "restriction' within the meaning of GATT Article XI if it has the effect of imposing a materially greater commercial burden on exports than on domestic sales. The Canadian landing requirements, in the panel's view, had such an effect because a considerable number of potential exporters would find the extra expense of making an unwanted landing in Canada to be significant.

The panel did not consider it necessary to demonstrate the actual trade effects of such a measure. It noted that actual data on what would have happened without the measure does not exist, and GATT decisions have not required such proof. It was sufficient, the panel stated, that the measure has altered the competitive relationship between foreign and domestic buyers.

Having concluded that the Canadian landing requirement violated GATT Article XI, the panel next addressed whether the requirement was nevertheless excused by GATT Article XX(g). Both the United States and Canada agreed that the applicable criteria were set out in the GATT panel report on Canada's former export prohibitions on unprocessed salmon and herring (case 3 above). That panel concluded that, "while a trade measure did not have to be necessary or essential to the conservation of an exhaustible natural resource, it had to be *primarily aimed at* [such] conservation" (emphasis added). In interpreting that test, the panel in the instant case asked whether the Canadian landing requirement would have been adopted for conservation reasons alone; the panel in turn interpreted that question as asking whether Canada would have adopted the landing requirement if that measure had required an equivalent number of Canadian buyers to land and unload elsewhere than at their intended destination.

This required the panel to make its own independent evaluation of the conservation justification in question. It recognized that there might be a need to single out the salmon and herring fisheries for special data collection because they were more important commercially and more difficult to manage. It also agreed that just because Canada was forced to accept imperfect data relating to other aspects of the salmon and herring fisheries did not mean it could not insist on better data when it could be obtained.

However, on balance, the panel concluded that a requirement to land a fleet's entire catch did not contribute to these objectives sufficiently so that Canada would have adopted it if the commercial inconvenience had fallen on Canadian buyers. In its view, the Canadian regulations were thus not primarily aimed at the conservation of an exhaustible natural resource and thus not exempted by GATT Article XX(g). The panel stated that a landing requirement could be considered primarily aimed at conservation if provision were made to exempt from landing that proportion of the catch whose exportation without landing would not impede the data collection process. It noted that this might be as little as 10 to 20 percent of the catch, depending on the actual data and management needs of each fishery or group of fisheries.

9. In the Matter of: *Lobsters From Canada,* Final Report of the Panel (May 25, 1990)

On December 12, 1989, the United States enacted an amendment to the Magnuson Fishery Conservation and Management Act to prohibit, among other things, the sale or transport in or from the United States of whole live lobsters smaller than the minimum possession size in effect under U.S. Federal law.[20] The minimum size requirement is intended to allow lobsters to reach sexual maturity and thus ensure stocks for the future. By the 1989 amendment, lobsters originating in foreign countries or in states having minimum lobster size requirements smaller

20 The 1989 amendment is section 8 of the 1989 National Oceanic and Atmospheric Administration and Ocean and Coastal Programs Authorization Act, Public Law No. 101-224, sec. 8, 103 Stat. 1905, 1907 (1989) (codified at 16 U.S.C. 1857 (l)(J)).

than the minimum limits imposed by U.S. Federal law were prohibited, with effect from December 12, 1989, from entering into interstate or foreign commerce for sale within or from the United States.

The legislative history of the 1989 amendment reveals three underlying objectives in extending the prohibition of undersized lobsters to cover imports. First, the measure was expected to facilitate the enforcement and management of the Federal conservation program by deterring unscrupulous U.S. lobster dealers from using fraudulent documentation to show Canadian origin of their lobsters. Prior to the 1989 amendment, U.S. dealers were able to avoid action under U.S. conservation by showing that their undersized lobsters came from Canada. Second, the amendment was expected to strengthen the conservation of U.S. lobster stocks by removing the lure of the already illegal market for subsized U.S. lobsters. Third, the amendment was expected to redress a perception of unfairness by U.S. lobstermen that the Federal size requirement put them at a competitive disadvantage in relation to their Canadian counterparts.

In December 1989, Canada advised the United States that it viewed the U.S. ban on undersized imports as inconsistent with U.S. obligations under GATT. It argued that the measure was a quantitative import restriction covered by GATT Article XI, which prohibits, among other things, quotas, license requirements, and other nontariff restrictions or prohibitions on imports. Canada denied that the measure was exempted by GATT Article XX(g), which exempts measures "relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption."

The United States maintained that the minimum size requirement should be considered an internal measure applying equally to domestic and foreign lobsters rather than a border measure targeted at imports (see the annex to ch. 2). As such, the United States argued that the measure was permitted by GATT Article III, which permits internal regulatory measures as long as they are applied in a manner that does not favor domestic products over imports. Even if GATT Article XI rather than GATT Article III applied, the United States asserted that the measure was a legitimate conservation measure exempted by GATT Article XX(g).

After consultations between Canada and the United States failed to resolve the matter, Canada had the choice of seeking settlement of the dispute under either GATT or the U.S.-Canada Free Trade Agreement.[21] It chose to proceed under the latter agreement.

The dispute settlement panel's report on the matter consists largely of a legalistic examination of the terms and drafting history of GATT's Articles III and XI, which the FTA incorporates. The majority of the panel agreed with the United States that the minimum size requirement was an internal measure permitted by GATT Article III. In reaching its conclusion, the panel apparently did not take into account one way or another an argument made by Canada that its lobsters reach sexual maturity at a smaller size than U.S. lobsters because of differences in water temperature between U.S. and Canadian lobster grounds.

Decisions of the Court of Justice of the European Communities

10. Commission of the European Communities v. Kingdom of Denmark (1989)[22]

At issue was a 1981 Danish regulation providing that gaseous mineral waters, lemonade, soft drinks, and beer could only be marketed in returnable containers, i.e., containers for which there was a system of collection and refilling under which a large proportion of containers used would be refilled. This effectively ruled out plastic or metal containers. Also, except for some limited circumstances, manufacturers could use only containers that the Danish Government had approved.

The Danish system was noteworthy because it went beyond mandating recycling of the containers' material to requiring reuse of the containers. The logistical and administrative burdens of such a system dictate that types of containers be kept to a minimum. That is why the Danish Government said it prohibited most use of nonapproved containers.

Foreign companies perceived these requirements as unfairly disadvantaging them because returning beverage containers for refilling would be more costly for them than for local producers. Moreover, requiring government approval for containers raised the issue whether the Danish Government might limit its approval to a few standard bottle shapes, thus prohibiting foreign companies from using distinctive bottles carrying brand recognition. The Danish regulation was also viewed with suspicion because it did not apply to milk and wine, two products for which Danish producers had little foreign competition.

The European Commission complained that the Danish regulation unduly restricted the free movement of goods among EC member countries contrary to Article 30 of the EC's Treaty of Rome. Initially, the Danish Government tried to mollify the Commission by amending its regula-

[21] Done at Washington, DC, January 2, 1988; came into force January 1, 1989; reprinted in *International Legal* Materials 1988, vo1. 27, pp. 281-402.
[22] Commission *of the* European *Communities* v. *Kingdom of Denmark*, 1988 E. Comm. Ct. J. Rep. *4607,54* Comm. Mkt. L. R. 619 (1989).

tion in 1984 to allow the use of nonapproved containers (except metal) if volume was less than 300,000 liters per producer per annum or if the market was being tested and the new entrant provided for a deposit and return system. However, the Commission continued to object, and in response the Danish Government argued that no further changes in the regulation were necessary and that the measure was justified by the need to protect the environment.

With regard to the deposit-and-return system for empty containers, the court agreed with the Danish Government's position. It noted that protection of the environment is one of the EC's essential objectives, which may as such justify certain limitations on the free movement of goods. Responding to the Commission's argument that there were less restrictive options available to the Danish Government, the court found that the burden of the Danish system on trade was not disproportionate to its environmental benefits.

However, the court did find that requiring foreign manufacturers to use only government-approved containers was disproportionate. Noting that a system for returning nonapproved containers was capable of protecting the environment, the court observed that the volume of bottles at issue would be small in any case owing to the restrictive effect which the deposit-and-return system had on imports. It thus acknowledged that the restrictive effect of the measure would likely be substantial.

This decision is important for a number of reasons. Some observers see it as highlighting how a court or other dispute settlement panel could apply a proportionality test to balance the competing but equally valid objectives of free trade and environmental protection. Some critics argue, however, that the court was too accepting of the Danish law, and that the decision could encourage EC member nations to protect their industries with laws claimed to be necessary for the environment. It bears noting that Denmark has a highly concentrated beer industry. United Brewers, which controls Carlsberg and Tuborg, controls 70 percent of the Danish market for beer.[23] Perhaps encouraged by this case, Germany has fashioned a tough law on recycling of packaging that could also put imported products at a disadvantage.[24]

23 See "The Danish Bottles Case," an unpublished case study prepared by the London Business School and the Management Institute for Environment and Business, Washington, DC, 1991.

24 *Verpackungsverordnung* (Ordinance on the Avoidance of Packaging Wrote), June 12, 1991.

Appendix B

Selected Bills on Trade/Environment Issues: 102d Congress

Numerous bills and resolutions concerning the relationship of international trade and environmental issues have been introduced into the 102d Congress.[1] Some relate to specific trade discussions (e.g., negotiation of the North American Free Trade Agreement) or international environmental agreements (e.g., the Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and Their Control). A number of the other trade/environment bills or resolutions would apply broadly to bilateral or multilateral trade agreements or negotiations. These proposals address several issues, including: 1) whether U.S. trade negotiators should take environmental questions into account in negotiating trade agreements; 2) whether to authorize countervailing duties or other penalties to compensate for competitive disadvantages when other countries have weaker environmental standards; and 3) whether institutions to deal with environmental and/or trade questions need strengthening. Selected issues and legislative proposals are briefly discussed below.

Fast-Track for the Uruguay Round and North American Free Trade Agreement

A major trade/environment issue in the first session of the 102d Congress was whether to deny or condition the extension of the President's "fast-track" negotiating authority. (Under the fast-track procedures, Congress agrees to vote up or down, without amendment and under a specified timetable, legislation to implement trade agreements negotiated by the President). The Administration sought 2 additional years (through May 31, 1993) of fast-track authority to complete the Uruguay Round General Agreement on Tariffs and Trade (GATT) negotiations and also to negotiate a North American Free Trade Agreement (NAFTA) among Mexico, Canada, and the United States.[2]

Proposals to deny extension of fast-track authority to the President failed in both the House (H. Res. 101) and the Senate (S. Res. 78). However, the House, in passing House Resolution 146, noted that fast-track authority was an expression of the rulemaking power of the House and the Senate, respectively, and could be changed by either House. The House resolution also indicated, among other things, that the United States under NAFTA must be able to maintain and enforce strict health and safety standards for imported agricultural products, and that NAFTA must be accompanied by an effective worker adjustment program. It also emphasized the need for a joint border environmental program.

Environmental Objectives and Trade Negotiations

The fast-track debate and the September 1991 tuna/dolphin report by a GATT dispute resolution panel have focused attention on the relation of environmental issues (and other issues such as labor standards) to trade negotiations. Should such issues be part of trade discussion+ or should they be addressed separately or independently? The issue is partly procedural and partly substantive. With respect to NAFTA, the Administration has said that environmental (and labor standards) questions will be addressed in "parallel" discussions.

In addition to NAFTA, several bills or resolutions introduced in the 102d Congress would call on the President and U.S. trade negotiators to include environmental and/or health and labor standards as a part of future trade negotiations.

House Concurrent Resolution 246 would express the sense of Congress on the relation between trade agreements and U.S. health, safety, labor, and environmental laws. It would call upon the President to undertake negotiations in the Uruguay Round to make GATT compatible with the Marine Mammal Protection Act and other U.S. laws, including those intended to protect the environment beyond U.S. borders. The proposed concurrent resolution also asserts that Congress would not approve a NAFTA or Uruguay Round agreement that jeopardizes U.S. health, safety, labor, or environmental laws, including the Federal Food, Drug, and Cosmetic Act and the Clean Air Act.

Another concurrent resolution (H. Con. Res. 227) calls on the President to encourage GATT contracting parties to discourage trade in goods and services produced in a manner harmful to the global environment and world wildlife, and to oppose GATT actions that adversely affect the ability of the United States to protect the global environment and wildlife through "nondiscriminatory" application of trade laws.

House Concurrent Resolution 247 proposes to express the sense of the Congress that the U.S. Government should, among other things, negotiate consideration of different environmental, life and health, and worker rights policies as justifiable exceptions in Article XX of GATT.

[1] For updates on legislative status, see Susan Fletcher and Mary Tiemann, *Environment and Trade,* CRS Issue Brief IB92006.

[2] The United States already has a free trade agreement with Canada.

Countervailing Duties or Other Trade Measures to Address Weaker Environmental Standards in Other Countries

A number of legislative proposals have been introduced that would treat the failure of other countries to enforce environmental standards comparable to U.S. standards as a kind of subsidy for their industries. Trade measures (such as countervailing duties) would then be allowed to makeup the difference in the cost of a product attributable to the lower standards when compared to a similar U.S. product.

For example, S. 984, the proposed International Pollution Deterrence Act, would allow inadequate pollution controls and environmental safeguards (including inadequate enforcement of such controls and safeguards) to be considered as subsidies. Countervailing duties in the amount of the cost that it would take the foreign firm to comply with U.S. environmental standards could then be imposed. A pollution control index would be created for the top 50 countries exporting to the United States; the index would attempt to measure each country's compliance with standards similar or equal to U.S. standards, through analyses of technology and actual costs incurred.

Half the revenues collected under S. 984 would go to a Pollution Control Export Fund. The Agency for International Development would administer the fund to assist purchases of U.S. pollution control equipment by developing countries. The remaining revenues would be for a Pollution Control Research and Development Fund, administered by the Environmental Protection Agency (EPA).

Another 102d Congress bill, S. 1965, the proposed Global Clean Water Incentives Act, would require the Secretary of Commerce to impose fees on imported products subject to or manufactured from processes that do not comply with U.S. Clean Water Act standards. The funds would be used to enhance the export of U.S. products with higher prices resulting from the Clean Water Act. It also calls on the U.S. Trade Representative to take steps to initiate amendments to GAIT to allow any country to impose additional duties on imports for countries that do not comply with water quality standards comparable to those in the United States.

S. 59, the proposed General Agreement on Tariffs and Trade for the Environment Act of 1991, would authorize actions to be taken under section 301 of the Trade Act of 1974 (19 U.S.C. 2411) against acts, policies, or practices of foreign countries that would ''diminish the effectiveness" of international agreements on the environment or plant and animal conservation.

Strengthening Institutions on International Trade and Environment Issues

Several bills call for steps to increase knowledge or improve institutions on interactions between trade and environmental issues. S. 59, discussed above, calls on the U.S. Trade Representative and EPA (with consultations from the Departments of State, Commerce, Agriculture, and Health and Human Services) for continuing reporting (through the National Academy of Sciences) on trade and environmental issues, including an analysis of the competitive impact on specific industries of differences between U.S. and foreign country environmental, conservation, and health laws. One purpose of the bill would be to consider ways to establish within GATT (or another institution) mechanisms to: 1) monitor and enforce compliance with international environmental agreements with trade measures, and 2) ensure foreign environment conservation and health laws are not disguised trade restrictions.

Another bill introduced in the 102d Congress, H.R. 3431, calls on the U.S. Trade Representative to seek reform of GATT to take national environmental laws and international environmental treaties, conventions, and agreements into account; secure a working party on trade and environment in GATT that includes representatives from the United Nations Environment Program and the U.N. Conference on Trade and Development; and take an active role in making GATT responsive to national and international environmental concerns.

Still another bill, S. 201, the proposed World Environmental Policy Act, would establish a Council on World Environmental Policy in the Executive Office of the President. The Council, chaired by the EPA Administrator and comprised of the heads of various agencies and departments and Presidential appointees, would develop and update every 3 years a strategic plan for coordinating policy responses to world environmental problems. The bill also proposes the appointment of a U.S. Environmental Negotiator to participate in negotiations relevant to global environmental issues. The bill would direct the President to request that the United Nations set up a temporary new agency, headed by the director of the U.N. Environment Program, to coordinate international environmental efforts and to help developing countries improve their living standards while addressing environmental issues.

Appendix C

Selected Congressional Hearings Relating to Trade and Environment

102d Congress

U.S. Pesticide Exports and the Circle of Poison—February 20, 1992.
House Foreign Affairs Committee, Subcommittee on International Economic Policy and Trade. Not yet published.

U.S. Waste Trade with Mexico and Canada—November 21, 1991.
House Committee on Government Operations, Subcommittee on Environment, Energy and Natural Resources. Not yet published.

Environment and Food Safety Issues Involved in the Proposed North American Free Trade Agreement-October 31, 1991.
House Committee on Energy and Commerce, Subcommittee on Commerce, Consumer Protection, and Competitiveness. Serial No. 102-88.

Trade Policy and the Environment—October 25, 1991.
Senate Finance Committee, Subcommittee on International Trade. Not yet published.

Environmental Issues Associated with the Proposed North American Free Trade Agreement—October 16, 1991.
House Committee on Rules, Subcommittee on Rules of the House. Not yet published.

Basel Convention on the Export of Waste-October 10, 1991.
House Committee on Energy and Commerce, Subcommittee on Transportation and Hazardous Materials. Serial No. 102-66.

Protecting the Environment in North American Free Trade Agreement Negotiations-September 30, 1992.
House Committee on Small Business, Subcommittee on Regulation, Business Opportunities, and Energy. Serial No. 102-44.

GATT: Implications on Environmental Laws-September 27, 1991.
House Committee on Energy and Commerce, Subcommittee on Health and the Environment. Serial No. 102-53.

Preventing Ozone Depletion—June 11, 1991.
Senate Committee on Environment and Public Works, Subcommittee on Environmental Protection. S. Hrg. 102-137.

North American Free Trade Agreement—March 20 and May **8-15, 1991.**
House Committee on Energy and Commerce, Subcommittee on Commerce, Consumer Protection, and Competitiveness. Serial No. 102-12.

Economic and Environmental Implications of the proposed North American Free Trade Agreement—April 23 to May 8, 1991.
Joint hearing before the Senate Committee on Environment and Public Works and the Subcommittee on Labor of the Committee on Labor and Human Resources. S. Hrg. 102-116.

The U.S.-Mexico Free Trade Agreement—April 16, 1991.
House Committee on Banking, Finance and Urban Affairs, Subcommittee on International Development, Finance, Trade and Monetary Policy. Serial No. 102-20.

Issues Relating to a Bilateral Free Trade Agreement with Mexico-March 14 and 22 and April 11, 1991.
Senate Foreign Relations Committee, Subcommittee on Western Hemisphere and Peace Corps Affairs. S.Hrg. 102-95.

101st Congress

Trade and the Environment—July 30,1990.
Senate Finance Committee, Subcommittee on International Trade. S. Hrg. 101-1230.

[1] *Citations are* **listed in reverse chronological order. Published hearings are available from the Superintendent of Documents, U.S. Government Printing Office, Washington DC.**

Appendix D

Trade in Environmental Goods, Services, and Technologies

The global market for environmental goods and services (EGS) is large and growing fast. The United States is the world's biggest producer and consumer of EGS thanks to its size and relatively strict environmental laws. It is also the second largest net exporter of environmental goods after Germany; Japan is the third. Several other industrial countries are competitive exporters of some types of EGS.

There is expanding worldwide interest in "cleaner production" technologies that prevent, rather than control and treat, pollution and waste. Although not usually included in EGS market estimates, demand for cleaner industrial, energy, and agricultural technologies, as well as for "green" products, seems likely to increase as concerns about global climate change, toxic substances, and more familiar soot and sewage' problems continue to mount.

The Organisation for Economic Co-operation and Development (OECD) estimates that the worldwide environmental market was $200 billion in 1990 and will grow at a 5.5 percent annual rate to $300 billion by 2000.[1] OECD defines the environmental industry to include end-of-pipe pollution abatement equipment+. g., water and wastewater treatment, stack gas scrubbers, solid waste handling-plus engineering, management, and consulting environmental services. Thus, OECD considers pollution prevention consulting services in its definition of environmental industry. However, it excludes both technologies incorporated into processes for pollution prevention and "green" consumer products—those that are more energy efficient, made with less toxic components, contain recycled materials, etc.

The U.S. EGS market is 42 percent of the global market; OECD nations together account for 82 percent.[2] EGS markets in newly industrialized and developing country markets are expected to expand. There will be greater opportunities for international trade in EGS as environmental standards and demands grow in stringency in both developed and developing nations. For instance, Mexico's environmental market is projected to increase 15 percent annually during the early 1990s.[3] Some projections have Taiwan spending $105 billion over the next 10 years for environmental protection, with imports of pollution control equipment expected to grow at 20 percent annually.[4] Environment is a concern in Eastern Europe and the former Soviet republics. Those European Community (EC) countries with less developed environmental infrastructures and regulations must upgrade to meet EC standards. The Clean Air Act Amendments of 1990 in the United States[5] and stronger waste minimization and recycling incentives in Germany and France[6] are among initiatives in the industrial nations that will likely add billions of dollars to the world EGS market, and thus to trade opportunities.

As the largest net exporters of environmental products, Germany, the United States, and Japan earn estimated trade surpluses of $10 billion, $4 billion, and $3 billion, respectively.[7] The United Kingdom, France, the Netherlands, and Sweden are also net environmental goods exporters. About 10 percent of U.S. environmental production is exported, while import penetration has grown in the waste and air sectors, accounting for 26 percent in the case of industrial air pollution control equipment. Japan exports 6 percent of environmental equipment production, importing under 3 percent of its consumption. Germany exports 40 percent of its product, about half of that within Europe, but imports only 5 percent of demand.

These figures do not include trade in so-called cleaner production—processes that prevent pollution and waste. Cleaner production encompasses a wide range of technologies, from solar power and "clean coal" burning to less polluting steelmaking processes, chlorofluorocarbon (CFC)-free integrated circuit production, and chromium-free leather tanning. In contrast to end-of-pipe or remedial cleanup technologies, these environmentally preferable

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[1] Organisation for Econonic Co-operation and Development (OECD), *The OECD Environment Industry: Situation, Prospects and Government Policies,"* OCDE/GD (92)1 (Paris: OECD, 1992).

[2] These percentages were derived from data in OECD, ibid.

[3] U.S. Department of Commerce, International Trade Administration, "Market Research Summary: 1991-The Mexican Market for Pollution Instruments Equipment and Services."

[4] ''Taiwan Firms To Buy Waste Treatment Equipment,'' *NewsACTION* (published by International Business Development, Northwestern University), vol. 6, No. 1, spring 1991.

[5] ICF Resources Inc. and Smith Barney, Harris Upham and Co., Inc., ''Business Opportunities of the New Clean Air Act: The Impact of the *CAAA* of 1990 on the Air Pollution Control Industry,' draft report prepared for the Office of Air and Radiation, U.S. Environmental Protection Agency, January 1992.

[6] "Green Germany Drags Brussels Into Environmental Arena,'' *Financial Times,* Jan. 24, 1992, p. 2.; "France Launches Attack On Waste,'' *Financial Times,* Jan. 24, 1992, pp. 1, 14.

[7] OECD, op. cit., is the source for all data in this paragraph.

technologies are integral to production processes.[8] Markets and trade in cleaner products and processes are therefore very difficult to define and quantify. Should scrap-using electric arc steel mini-mills be considered in this market because they have fewer environmental impacts than integrated steel production that starts with iron? Should all industrial monitoring and control instruments be included because, in addition to contributing to productivity and product quality, they can diminish materials and energy waste? Probably not. As an analog, one probably would not count apples and running shoes as health expenditures. Regardless of these taxonomic difficulties, demand for cleaner production seems likely to accelerate. Trade opportunities arise from industrialization of developing countries, reconstruction of Eastern European and former Soviet economies, and from demand for new and replacement capital stock within OECD.

Trade in environmental technologies-both end-of-pipe and cleaner production-is not greatly impeded by tariffs and explicit nontariff barriers (e.g., local content requirements). For instance, tariffs imposed on U.S. air pollution control equipment by major foreign markets are typically under 5 percent, although there are some exceptions—South Korean and Canadian tariffs are being phased down from higher levels (in 1990,20 percent and 9.2 percent, respectively) .[9] Preliminary research by OECD on transfer of seven commercially available clean technologies to developing countries suggests that trade-related policies (e.g., tariffs, local content requirements, patents, and currency restrictions), while sometimes an issue, are not major obstacles to environmental technology trade.

Trade and transfer of environmental technologies to developing countries can be expected to increase if those countries have greater resources to implement environmental regulations and finance technology acquisition. Without regulation, industry has little incentive to invest in pollution control or to adopt clean technologies that offer no cost advantage. (Some pollution preventing processes do offer cost advantages, however, even in the absence of environmental control costs.) Inadequate financial resources are a major constraint in expanding environmental trade to developing countries, Eastern Europe, and former Soviet republics. Credit and foreign exchange are often lacking. Poor cash flow can even keep firms from purchasing pollution preventing processes that offer lower operating costs and improved productivity.[10] (See box 3-B in ch. 3, "Financing Environmental Measures in Developing Countries," for further discussion.)

Differing standards further complicate efficient market entry and reduce economies of scale by requiring companies to alter their products and procedures for each country. These inconsistencies can offer advantages to home country firms. The problem of differential regulation across different jurisdictions is not limited to the international arena. In the United States, disparate State and local standards and procedures present similar problems to domestic producers of environmental technologies.

The U.S. Government has taken some steps that encourage trade in EGS and the transfer of environmental technologies. For instance, the United States Environmental Training Institute was recently established as a joint venture between the U.S. Government and the private sector to train developing country public- and private-sector participants. The Institute may familiarize foreign trainees with U.S. equipment, procedures, and expertise, creating brand loyalty for U.S. products while strengthening developing countries' capabilities to manage their environment.

The U.S. Agency for International Development (AID) has a variety of programs for developing country technical assistance and project financial support that can benefit U.S. environmental industries. The U.S. Environmental Protection Agency (EPA) engages in foreign technical assistance that may promote use of U.S. brand equipment. EPA, AID, and the Department of Commerce cooperate on trade missions and other export promotion activities. The Department of Commerce is trying to advance U.S. firms' awareness of foreign environmental market opportunities. The Department of Energy leads the interagency Committee on Renewable Energy Commerce and Trade (CORECT) that seeks to promote renewable energy related commerce.

The Overseas Private Investment Corporation (OPIC) is a Federal agency that supports U.S. business ventures in developing and Eastern European countries (and soon former Soviet republics) through information, investment missions, project financing, and insurance programs. OPIC's Environment Investment Fund, as well as general and specialized regional funds for Asia and Africa, can promote U.S. environmental exports and investments. The Trade and Development Program's financial support for project feasibility studies, Export-Import Bank credit and insurance programs for U.S. exports, and the Small

[8] U.S. Congress, Office of Technology Assessment, **Serious Reduction** *of Hazardous Waste: For Pollution Prevention and Industrial Efficiency*, OTA-ITE-317 (Washington, DC: U.S. Government Printing Office, September 1986).

[9] U.S. Department of Commerce, International Trade Administration, "b. Competitive Assessment of the U.S. Industrial Air Pollution Control Equipment Industry," August 1990, table 20, p. 40.

[10] Ibid.

Business Administration are other sources of help for U.S. environmental companies seeking to compete overseas.

There are special U.S. Government-sponsored regional efforts to promote foreign environmental capability which can benefit the U.S. EGS industry. The United States-Asia Environmental Partnership (US-AEP) was recently established by the Administration to promote the use of U.S. expertise and technology to solve Asian environmental challenges. US-AEP involves over 20 Federal agencies. Assistance for Eastern Europe, including the Support for East European Democracy Act, first passed by Congress in October 1989, contains environmental components. For the U.S.-Mexico border region, the Administration has proposed environmental spending of $203 million for fiscal year 1993. This will be in addition to $460 million over 3 years announced by the Mexican Government for environmental purposes in the border region.[11]

Opening foreign market channels will not, by itself, assure a strong, internationally competitive U.S. environmental industry. The United States faces stiff competition from other nations, notably Japan and Germany, whose governments are actively promoting the development and deployment of new environmental technology. These efforts, as well as U.S. effort and options, will be analyzed in the final report of this assessment, to be delivered in 1993.

[11] Jan Gilbreath Rich, "Financing Environmental and Infrastructure Costs Under a North American Free Trade Agreement With Emphasis On the Texas-Mexico Border," draft presented to the Institute of the Americas conference "Latin American Environment and Technological Cooperation," La Jell% CA, Nov. 17-19, 1991.

Appendix E

Assessing Trade and Competitiveness Impacts of Environmental Regulations on U.S. Manufacturing

There have been attempts to assess the competitive impacts of environmental regulation on U.S. manufacturing at least since the early 1970s. A number of studies were done in the early to mid-1970s; after a period of reduced interest, the topic appears to be gaining scholarly and government attention today.[1] The U.S. Government was involved early and continues to work in this area.

The majority of studies dealing with this question have concluded that environmental regulation does increase the costs for U.S. producers, but that these increases are relatively small. Some studies have failed to find a relationship between environmental regulation and trade and investment. However, other studies have found an effect, but have judged the overall effect to be small. In certain sectors facing high environmental control costs, the effects on trade performance were larger.

However, serious problems with both the data and the methodology make anything but limited and/or tentative conclusions problematic. Limitations of the research methodologies make valid assessments difficult. Many of these studies may underestimate the total costs of environmental regulation, particularly for some industries; at the same time, they may neglect the benefits of regulation, such as increased energy and materials efficiency and increased public health.

Moreover, it is important to note that much of the research dates from the 1970s, and thus many of the conclusions about the effect of environmental regulation on trade come from a time when U.S. industry was just beginning to feel the competitive pressures that have so greatly intensified in recent years. As a result, what were modest impacts on a competitively strong industry then could be more significant today when competition as a whole is more intense. Thus, while the studies generally concluded that the effects were small, this does not mean that these effects are currently insignificant and should not be addressed.[2] This is particularly true given the new and stricter environmental regulations which will go into effect in the 1990s. In an era of heightened competition, increased environmental costs can diminish trade performance, and when combined with other effects (e.g., cost of capital, foreign industrial policies, etc.) may contribute to significant competitiveness difficulties. But, as other OTA reports have shown, factors such as capital availability, a well-trained workforce, and strong development and diffusion of commercially oriented technologies remain important determinants of competitiveness.[3]

The Impact on Trade

Economic theory suggests that the increased environmental control costs borne by U.S. producers would reduce their competitive advantage in global markets as they face increased competition from producers in nations with lower environmental control costs. Many of the empirical models of the effect of environmental regulation on trade hypothesize that increased environmental control costs will worsen U.S. trade performance.

While studies have been done on the relation between environmental regulation and economic growth, only a few have assessed the cost of environmental regulation and examined its impact on international trade and investment.[4] Overall, the studies are difficult to summarize and offer somewhat mixed conclusions.

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1 The studies on the relationship between environmental regulation and trade are distinct from those examining the impact of regulation on overall economic growth. This report limits its focus to the trade impacts of environmental regulation. Other material has examined the effect of environmental policies on overall U.S. economic growth (e.g., GNP, investment, jobs). (See, e.g., Dale W. Jorgenson and Peter J. Wilcoxen, "The Impact of Environmental Legislation on U.S. Economic Growth, Investment, and Capital Costs,' paper presented at the U.S. Environmental Policy and Economic Growth conference, sponsored by the American Council for Capital Formation, Washington DC, Sept. 12, 1991.)

2 For example, in a study of the steel industry, OTA concluded, "In a world industry in which profits are low or absent, environmental costs can be significant even though they may account to only a small percentage of costs." See U.S. Congress, Office of Technology Assessment, *Technology and Steel Industry Competitiveness* (Washington, DC: U.S. Government Printing Office, June 1980), p. 83.

3 See U.S. Congress, Office of Technology Assessment, *Making Things Better: Competing in Manufacturing,* OTA-ITE-443 (Washington, DC: U.S. Government Printing Office, February 1990); also *Competing Economies: America, Europe, and the Pacific Rim, OTA-ITE-498 (Washington* DC: U.S. Government Printing Office, October 1991).

4 Ugelow reviewed earlier studies done in the 1970s, while Dean surveyed studies done through 1990. Judith L. Ugelow, "A Survey of Recent Studies on Costs of Pollution Control and the Effects of Trade,' in Seymour J. Rubin and Thomas R. Graham (eds.), *Environment and Trade* (London: Frances Pinter Ltd., 1982); Judith Dean, "Trade and the Environment: A Survey of the Literature," Background Paper, *WorldDevelopmentReport, 1992,* World Bank, April 1991; see also Charles S. Pearson and Robert Repetto, "Reconciling Trade and the Environment: The Next Steps, " prepared for the Trade and Environment Committee of the EPA, December 1991.

Virtually all studies agree that environmental regulation increases the cost structure of firms producing in the United States.[5] For example, the U.S. Bureau of the Census reports that in 1988 the average cost of environmental regulation for 445 manufacturing industries was 1.1 percent of value added.[6] Some other estimates are higher.[7] For example, world business leaders surveyed by Organisation for Economic Co-operation and Development (OECD) report that environmental costs average 2.4 percent of sales income and are anticipated to rise to 4.3 percent by the end of the decade.[8]

While relatively small overall, the costs of environmental regulation are higher for certain industies. For example, 14 percent of 445 industries have environmental regulation costs of more than 2 percent of value added.[9] Copper smelting or refining, petroleum refining, steel, and cement all have relatively high costs from environmental regulation. Dow Chemical estimates a 2.5 to 3 percent price increase because of environmental capital investments.[10] When compared to the trade shielding effects of tariffs, environmental regulation costs are by no means trivial.[11]

Even though environmental regulation imposes expenses on U.S. producers, it is another matter to show whether these costs negatively affect trade performance. To do this, economists usually rely on economic models that include a number of variables, including the cost of environmental regulation, to either measure or predict trade performance and overseas investment.

Some studies find that it is impossible to isolate the effect of environmental regulation on trade, particularly because other variables, such as the cost of capital and exchange rate fluctuations, overshadow the effects of increased environmental regulation costs. For example, in 1979 the U.S. Department of Commerce concluded that its studies "have disclosed no evidence of either significant out-migration of U.S. industries to 'pollution havens' or of trade pattern dislocations directly attributable to pollution control costs."[12] They expected any cost differentials to be masked by other factors affecting the state of the economy.[13] Similarly, a later study, looking at net exports in five pollution-intensive industries, found no trade impact from environmental control costs.[14]

However, other studies have found more evidence of impacts-albeit small. A 1978 OECD study concluded that the general increase in prices due to environmental regulation is not highly significant, "but is nevertheless sufficient to trigger some reduction in private consumption and in exports. "[15] Another study found that "pollution abatement regulations have a negative and fairly significant effect on trade performance (in the 1970s)."[16] A third study found that a 1 percent increase in cost due to environmental regulation would result in a net reduc-

[5] This background paper focuses on the impact on trade of process regulations that limit pollution from industrial facilities. It does not examine the impact of other types of environmental regulation, including product regulations (e.g., automobile emission standards), regulations on product reuse (e.g., recycling laws), or other types of regulations.

[6] The main source for data on pollution control costs for industry is from the Bureau of the Census, *Manufacturer's Pollution Abatement Capital Expenditures and Operating Costs*, published annually.

[7] There are two different ways to express environmental control costs. The first uses the share of environment control costs paid directly by the firm as a ratio of value added. A second measure, relying on an input-output model, includes both the direct costs to the firm plus the indirect costs of environmental controls embedded in the firm's inputs and supplies. These cows are higher but they are divided by the total firm costs, not the lower value added. However, using only direct environmental control costs as a share of total costs, rather than value added, as is sometimes done, results in estimates that understate the true cost of environmental regulation. See Joseph P. Kalt, "The Impact of Domestic Environmental Regulatory Policies on U.S. International Competitiveness, " in A. Michael Spence and Heather A. Hazard (eds.), *International Competitiveness* (Cambridge, MA: Ballinger Publishing Co., 1988).

[8] Preliminary information from OECD, 1991.

[9] U.S. Trade Representative, "Review of U.S.-Mexico Environmental Issues," February 1992.

[10] Charles J. Hahn, Comment on "International Comparisons of Environmental Regulation," Raymond J. Kopp, Paul R. Portney, and Diane E. Dewitt, in *Environmental Policy and the Cost of Capital*, American Council for Capital Formation, September 1990, Washington, DC.

[11] By 1979 the average tariff for nonprimary products (products other than ores, timber, and the like) imported into industrialized countries was down to 4.7 percent. (John Jackson, *The World Trading System: Law and Policy of International Relations* (Cambridge, MA: MIT Press, 1989), p. 53.) Given that environmental control costs in the most affected industries are above 2 percent of value added, their magnitude in comparison to tariffs can be significant. See also Ingo Walter, "International Economic Repercussions of Environmental Policy: An Economist's Perspective," in Rubin and Graham, op. cit.

[12] U.S. Department of *commerce*, "U.S. Pollution Control Costs and International Trade Effects-1979 Status Report" (mimeo), September 1979, p. 3.

[13] Cited in Ugelow, Op. Cit.

[14] J. Tobey, "The Effects of Domestic Environmental Policies on Patterns of World Trade: An Empirical Test," *Kyklos*, vol. *43, No. 2*, 1990, *pp. 191-209.*

[15] Organisation for Economic *Co-operation* and Development, Macroeconomics *Evaluation of Environmental Programmes*, 1978, p. 11. cited in Ugelow, op. cit. Pasurkaalsofound small impacts of environmental regulation see Carl Pasurka, "Environmental Control Costs and U.S. Effective Rates of Protection" *Public Finance Quarterly*, vol. 13, No. 2, April 1985, pp. 161-182.

[16] Kalt, op. cit.

tion of the U.S. balance of trade of $6.5 billion in 1982.[17] While the study concludes that this is a small effect, if the impact was the same in 1990, it would result in an $8.6 billion worsening of the U.S. merchandise trade deficit of $101 billion. Yet another study found that a pollution tax imposed on Mexico equal to the value of environmental control costs of the counterpart U.S. industries would lead to a 1.2 to 2.6 percent reduction in Mexican exports to the United States.[18] This would reduce U.S. imports from Mexico by approximately $375 million a year.

While assessments generally conclude that the economy-wide effects are minor or nonexistent, some studies suggest that sectoral effects are more significant. For example, the Commerce Department concluded that while it could find no relationship between environmental control costs and overall trade patterns, environmental regulation in 1979 did add $7.30 more per ton to the costs of U.S. bleached kraft pulp (paper) over that of Sweden or Canada for a 5.8 to 8 percent increase.[19] Because U.S. producers already held a competitive cost advantage, the study concluded that the impacts on trade would be minimal. Similarly, the Commerce Department found that environmental control costs averaged 6.6 cents per pound in the U.S. copper industry, but only 2.7 cents in Canada, and 0.5 cents in Peru and Chile. The report predicted that U.S. copper imports would rise from 167,000 tons in 1974 to 661,000 tons in 1987, and that 16 percent of this increase (79,000 tons) would be attributable to additional environmental regulatory controls on U.S. copper producers.[20] The Department classified these impacts as small. By contrast, in 1988, OTA concluded that the cost to the U.S. copper industry, particularly copper smelting, of environmental regulation "has been large, with substantial negative impacts on competitiveness and capacity."[21] Another study estimated that water pollution control expenditures would lead to differential trade impacts, for example, an increase of shoe imports of less than 1 percent, but an increase in steel imports of 6 percent.[22] Because the products of many industries with high control costs tend to be highly standardized intermediate goods purchased by other industries (e.g., chemicals, petroleum, minerals) with high price elasticity of demand, small changes in price may cause larger changes in sales.[23]

Finally, one study found that between 1973 to 1982 the United States increased its net imports of goods more from industries with higher environmental control costs than from those in which such costs were lower.[24] In other words, as a ratio of imports to exports, the United States increasingly imported goods in industries that had high environmental control costs. However, the ratio did not change for imports from Canada, a country whose environmental regulations are similar to those of the United States.

The Impact on Investment and Relocation

In addition to affecting trade directly, some argue that uneven regulation may induce U.S. firms to migrate to countries with lower levels of regulation-the so-called pollution haven effect. Studies of the location impacts of environmental regulation are inconclusive, but suggest that the effect is modest. There are reasons to suggest that the migratory effect of environmental regulation is likely to be less than the trade effect.

Unlike decisions to buy discrete items, U.S. overseas investment decisions are often driven by such considerations as foreign market access or savings in areas such as wages. For relocation decisions driven by cost considerations, the savings have to be large enough to overwhelm

17 H. David Robison, "Industrial Pollution Abatement: the Impact on Balance Of Trade," *Canadian Journal of Economics*, vol. 21, No. 1, February 1988.

18 Patrick Low, "Trade Measures and Environmental Quality: Implications for Mexico's Exports," paper presented at the Symposium on International Trade and the Environment, sponsored by the World Bank, Washington, DC, Nov. 21-22, 1991.

19 Us. Department of Commerce, 1979, Op. Cit., p. 12.

20 U.S. Department of Commerce, 1979, op cit., app. 2, p. 4. The Congressional Budget Office estimated that environmental regulation also contributed to significant declines in the zinc smelting industry. (U.S. Congress, Congressional Budget Office, *Environmenta/Regulation and Economic Efficiency*, March 1985.)

21 U.S. Congress, Office of Technology Assessment, *Copper: Technology and Competitiveness*, OTA-E-367 (Washington, DC: U.S. Government Printing Office, September 1988).

22 Public Research Institute, Th. *Effects of Effluent Discharge Limitations on Foreign Trade in* Selected Industries, Report to the U.S. National Commission on Water Quality (Arlington, VA: February 1976).

23 General Agreement on Tariffs and Trade (GATT), "Trade and the Environment" Feb. 12, 1992, p. 20.

24 Robison, op. cit.

the costs of opening up a new plant (which can be substantial).[25] Many firm location decisions are not driven by low cost, as access to markets, skilled labor, and quality infrastructure may be more important. And usually savings from lax environmental regulations will be relatively modest compared to the savings from other factors, such as low wages. However, many countries with low labor costs also have low levels of environmental and worker health and safety regulations, which when combined, can result in even lower costs.

Most economy-wide studies suggest a low impact on investment from differing environmental regulation.[26] Leonard found no significant effects on investment of differential environmental regulation.[27] A study of U.S. "maquiladoras" plants (plants locating in Mexico near the U.S. border through a special Border Industrialization Program) found no relationship between the level of low Mexican regulations and U.S. investment.[28]

While economy-wide studies find no investment effect, anecdotal evidence, case studies, and surveys of firms suggest that lower environmental regulation does play a role. For example, one study found that 26 percent of maquiladora operators in Mexicali cited Mexico's lax environmental enforcement as an important reason for their relocation there.[29] The U.S. General Accounting Office found that between 11 and 28 wood furniture manufacturers in the Los Angeles area relocated to Mexico between 1988 and 1990, taking with them 960 to 2,547 jobs.[30] About 80 percent of the firms cited stringent air pollution standards as well as lower labor costs as major factors in their location decision. In Mexico, these firms faced no air pollution standards for the application of paint coatings and solvents.[31]

Case studies may find impacts because environmental regulation affects some industries more than others. For example, U.S. operations that moved to Mexico were either relatively labor-intensive light manufacturing operations and generally not highly polluting, or producers of hazardous waste such as asbestos.[32] A few industries more likely to relocate due to environmental regulation include some mineral processing, toxic products, and intermediate organic chemicals.[33] This is consistent with a finding that environmental regulation does not affect industry location in the United States overall, but that it may have some effect on the location of highly polluting industries.[34] For the subset of industry that is labor cost sensitive, is relatively footloose or is making new investment decisions, and has high environmental compliance costs, low environmental regulation can add to the cost advantage gained by low labor costs.

Limitations of the Studies

These studies do not provide definitive conclusions. Studies relying on economic models are limited by several factors. First, it is difficult to separate the effects of environmental regulation from other variables, such as wages and exchange rates, on overall trade patterns. OECD concluded that in relation to differing environmental costs among OECD nations, the fact that there have been no evident changes in competitive status does not suggest that environmental costs have not affected competitiveness, but that the totality of influences on competitiveness is such as to disguise any effect.[35]

Second, data limitations relating to the costs and benefits of environmental regulation make it difficult to accurately assess the competitiveness impact. Some of these limitations would suggest that the actual impacts are even lower than currently measured, but others would lead in the opposite direction, to suggest larger impacts.

None of the models include the benefits from environmental regulation and as a result may overstate the impact on trade. Firms may indeed accrue benefits from environ-

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25 However, the savings from lax environmental regulations maybe a more important determinant for new investment decisions than for relocations.

26 For example, see Ingo Walter, "Environmentally Induced Industrial Relocation to Developing Countries," in Rubin and Graham, op. cit.

27 H. Jeffrey Leonard, *Pollution and the Struggle for the World Product (New* York NY: Cambridge University Press, 1988).

28 Gene M. Grossman and Alan B. Krueger, "Environmental Impacts of a North American Free Trade Agreement," paper presented at the conference on the U.S.-Mexico Free Trade Agreement sponsored by the Mexican Secretary of Commerce and Industrial Development, Oct. 8, 1991.

29 Thirteen percent of the firms said that weaker environmental legislation was a major factor in selecting Mexico, while another 13 percent said it was an important factor. (Roberto Sanchez, "Health and Environmental Risks of the Maquiladora in Mexicali," *Natural Resources Journal, vol. 30,* winter 1990.) One economic development official for the Mexican state of Sonora suggests, "The red tape and expense of American environmental law is a powerful incentive for some companies to locate in Mexico. I've had a couple ocompanies come down solely for that reason." (Quoted in Sandy Tolan, "Hope and Heartbreak," *The New York Times Magazine,* Best of Business Quarterly, winter 1990-91.)

30 us. Congress, U.S. General Accounting Office, "U.S.-Mexico Trade: Some U.S. Wood Furniture Firms Relocated From Los Angeles Area to Mexico," April 1991.

31 Ibid.

32 Leonard, op. cit.

33 Ibid.

34 Tim Bartik, "The Effects of Environmental Regulation on Business Location in the United States," *Growth and Change,* summer 1988.

35 Preliminary information from OECD, 1991.

mental regulation. For example, OTA found that environmental regulations accelerated steel industry modernization.[36] Pollution prevention efforts may increase competitiveness, if they result in firms paying closer attention to energy and materials efficiency and continuous process improvement.[37] Lower pollution costs may also be reflected in lower health care costs, increased agricultural productivity, and lower costs in other pints of the economy from reduced pollution.[38] Companies can benefit from these both directly and indirectly (cheaper supplies and inputs). Further, as other nations develop stricter environmental regulation, U.S. firms may receive some first-mover benefits as firms in other nations spend money to catch up. Finally, the United States may run a trade surplus in environmental protection products and services that acts to offset to some extent negative trade effects from environmental regulation-induced cost differentials (see app. D).

Third, it is not clear that the models accurately measure cost, either in the United States or other nations. Most of the studies rely on data on pollution abatement expenditures from a survey by the Bureau of the Census. However, there is some evidence that these surveys underreport environmental control costs.[39] For example, in the copper industry, Census data indicate that environmental control costs added 4 cents per pound to the price of copper in 1985.[40] However, at least four other sources, based on actual examination of copper smelting firms, found that the expenses were much higher, ranging from 7.5 cents per pound to 15 cents per pound.[41] The Census surveys may underreport true costs if the respondents do not have complete knowledge of all expenditures. Chapman found that survey results of the copper mining and smelting industry may not have included costs such as monitoring and planning activities, environmental activities that are part of the production process, interest expense on equipment, and productivity loss.[42]

Moreover, costs may be underestimated if other expenses are not calculated, including: administrative and legal fees and fines (these can be sizable in the Resource Conservation Recovery Act (RCRA) and Superfund proceedings);[43] costs of having to substitute new materials or processes; costs associated with bans on certain products or on production of certain hazardous products (e.g., zinc smelting, arsenic, benzidine-dye); increased costs of the effects of environmentally related industrial zoning; costs related to workplace health and safety protection; fees and taxes for permits; administration and recordkeeping; and research and development (R&D) for environmental controls.[44] In addition, some argue that the environment, particularly hazardous waste issues, occupies a significant portion of time for some top executives. Finally, even though costs may not be all that high now, new and stricter environmental regulations put in place in the 1990s may change this picture, particularly for some industries. This all suggests that current estimates of U.S. environmental costs, based on surveys, may in fact be too low, which would lead to impacts that are underestimated.

Another limitation of the studies is that few include foreign costs of environmental regulation in the models, which leads to an overestimation of the impact of environmental regulation on trade and investment. The United States has among the most advanced environmental regulations in the world, although some other nations (Canada, Japan, Denmark, and Germany) have

36 U.S. Congress, Office of Technology Assessment, *Technology and Steel Industry Competitiveness*, op. cit., p. 83.

37 See *us*. Congress, Office of Technology Assessment, *Serious Reduction of Hazardous Waste: For Pollution prevention and Industrial Efficiency*, OTA-ITE-317 (Washington, DC: U.S. Government Printing Office, September 1986); also Michael Porter, "America's Green Strategy," *Scientific American*, April 1991, p. 168.

38 See Organisation for Economic Co-operation and Development *Environmental Policy Benefits: Monetary Valuation* (Paris: OECD, 1989).

39 For e-pie, as discussed above, Tobey (op. cit) concluded that environmental control costs had no impact on trade. However, his cost estimates appear too low. For example, he calculated that environmental control costs accounted for only 2.05 percent of the copper smelting industry total costs. In contrast, as discussed below, the true costs appear to be at least three to five times greater.

40 Data from the Bureau of the Census, based on the *Manufacturer' sPollution Abatement Capital Expenditures and Operating Costs*, 1987.

41 See U.S. Congress, Office of Technology Assessment, *Copper: Technology and Competitiveness*, op. cit.—lo to 15 cents per pound; National Research Council, *Competitiveness of the U.S. Minerals and Metals Industry* (Washington, DC: National Academy Press, 1990)-9 to 15 cents per pound; "Counting the Cost of Clean Air," *E&MJ*, January 1990-7.5 cents per pound; Duane Chapman, "Environmental Standards and International Trade in Automobiles and Copper: The Case for a Social Tariff," *Natural Resources Journal*, vol. 31, winter, 1991, pp. 449-461—10 to 15 cents per pound. Total U.S. copper production costs averaged 65 cents per pound.

42 Chapman, op. cit.

43 For example, Portney estimates that costs of litigation and other non-cleanup related expenses could exceed 20 percent of total Superfund cleanup costs. (Paul Portney, "The Economics of Hazardous Waste Regulation" paper presented at U.S. Waste Management Policies: Impacts on Economic Growth and Investment Strategies, sponsored by the American Council for Capital Formation, Washington, DC, Nov. 7, 1991.)

44 Chapman, op. cit.

also developed strict and comprehensive approaches.[45] Other OECD nations, including France, United Kingdom, Switzerland, Spain, and Italy, have less strict standards, and non-OECD nations have even lower standards.[46] In addition, even among countries with similar levels of environmental regulation, there is wide variation in enforcement.[47] Moreover, countries differ in the forms of regulation employed and the relationship between government and industry in forming environmental policy. Some forms of regulation (e.g., tradeable permits) may result in lower overall costs to industry while still achieving a stated environmental goal.

As a percent of gross domestic product (GDP), the United States spends more than any other nation (1.5 percent of GDP and $78 billion) on environmental goods and services.[48] Japan spends about half the U.S. rate (0.7 percent), northern European nations spend slightly more than half (0.9 percent), and southern European nations only one-third (0.5 percent) .49 The costs of regulation in less developed countries, including the newly industrializing countries (NICs), is significantly lower than in OECD nations. Table E-1 compares costs for different regions.

Even though many less developed countries have low or no regulations, this situation appears to be changing. Many countries, especially the NICs, are putting in place stricter environmental regulations.[50] Moreover, some argue that even though many less developed countries have minimal or no regulations, some multinational corporations (MNCs) may apply their high home country standards to their plants in less developed nations.[51] However, little systematic evidence has been presented to substantiate this claim. Thus, it is unclear the extent to which MNCs do this, particularly smaller firms that relocate to less developed nations. For example, while U.S. maquiladoras suppliers say that they don't illegally pollute, others dispute this claim and argue that sewage and other runoff from the area is often highly polluted with industrial wastes.[52] Even if the MNCs abide by home country standards, they may receive a cost advantage if local suppliers are unregulated.

Finally, the impact on U.S. firms can be even more significant because favorable tax treatments and subsidies in other nations for their firms can help offset these costs, and change the cost structure between nations.[53] Not all nations are as committed to the polluter pays principle (an OECD principle that says that polluters should bear the cost of complying with environmental regulations) as the United States.

Table E-l—Estimated Per Capita Expenditures on Environmental Goods and Services

Regions	costs ($)
United States	313
Canada	270
Japan	197
Northern Europe	194
Southern Europe	84
OECD average	214
Rest of world	8

SOURCE: Preliminary information from OECD, 1991.

U.S. Government Efforts

Congressional concern about the competitive and trade impacts of U.S. environmental regulations is not new. Congress has on different occasions called on the executive branch to assess the impact of U.S. environmental standards on the competitiveness of American

45 Preliminary information from OECD, 1991; Kopp, Portney, and Dewitt argue that OECD air and water pollution control policies were generally the same, and that any cost differential the United States bears is likely to be small, but that hazardous waste policies were different. In particular, Resource Conservation Recovery Act (RCRA) and Superfund imposed more stringent requirements on U.S. manufacturers than on overseas. (International Comparisons of Environmental Regulation Raymond J. Kopp, Paul R. Portney, and Diane E. Dewitt, in *Environmental Policy and the Cost of Capital, American* Council for Capital Formation, September 1990, Washington, DC.)

46 Preliminary information from OECD, 1991.

47 Ibid.

48 A recent report by the Environmental Protection Agency (EPA) estimated higher costs for the United States of protecting and restoring the environment—$115 billion annually, or about 2 percent of U.S. gross national product. However, EPA estimates include all costs associated with municipal and private solid waste collection (approximately $20 billion) as well as costs of pollution control equipment on automobiles and other mobile sources (approximately $8 billion). Without these, the EPA estimate is $87 billion, closer to the OECD estimate. U.S. Environmental Protection Agency, *Environmental Investments: The Costs of a Clean Environment, EPA-230-90-084* (Washington DC: December 1990).

49 Preliminary information from OECD, 1991.

50 Paul Cullen Beately, "The Benefits of a Global Environmental Compliance Strategy, " *Corporate Management,* vol. 158, No. 3, pp. 14-19, June 1989.

51 USTR, op. cit.

52 For example, see Joseph La Dou, "Deadly Migration: Hazardous Industries' Flight to the Third World," *Technology Review,* vol. 94, No. 5, July 1991; Sanford Lewis et al., "BorderTrouble: Rivers in Peril. A Report on Water Pollution Due to Industrial Development in Northern Mexico," National Toxics Campaign Fund, May 1991; Diane M. Perry, Roberto Sanchez, William H. Glaze, and Marisa Mazari, "Binational Management of Hazardous Waste: The Maquiladora Industry at the U.S.-Mexico Border, *Environmental Management,* vol. 14, No. 4,1990, pp. 441-450; and Sandy Tolan, "Hope and Heartbreak," *The New York Times Magazine,* reprinted in *Best of Business Quarterly,* winter 1990-91.

53 For example, the Japanese give industrial grant aid to help reduce cost of compliance.

industry. It has also called on the executive branch to prompt other countries to raise their environmental standards.

Water Pollution Control Act Amendments of 1972

The Federal Water Pollution Control Act Amendments of 1972 directed the Secretary of Commerce to periodically study and report to Congress on the international trade impacts of the law. The Secretary, among other things, was asked to make a determination of the "probable competitive advantage" for foreign goods produced in countries without pollution control standards, or with lesser standards, or with subsidies or reimbursements for manufacturers' environmental costs.[54] In succeeding years the Secretary released four studies.[55] The last report focused on an industrial sector-aluminum—that is among the most sensitive to environmental controls because of its high electricity demands. Why the reports were discontinued is not clear. A fifth report[56] was written in 1977 but not released because it was judged inconclusive.[57] The report compared pollution abatement expenditures and exports and imports for 47 manufacturing sectors between 1973 and 1976. According to its author, the study could not determine to what extent pollution control expenditures affected trade.

A 1979 Commerce Department status report on the congressionally mandated studies summarized the overall findings as having disclosed "no evidence of either significant out-migration of U.S. industries to 'pollution havens' or of trade pattern dislocations directly attributable to pollution control costs."[58] The summaries of two sector-specific reports (pulp and paper, and copper) were less optimistic, stating that foreign imports may be slightly advantaged.

The amendments to the Water Pollution Control Act also directed the President, as a means of heading off competitive disadvantages, to negotiate "international agreements to apply uniform standards of performance for the control of discharge and emission of pollutants from new sources, uniform controls over the discharge and emission of toxic pollutants, and uniform controls over the discharge of pollutants into the ocean."[59] According to one analyst, President Carter unsuccessfully tried to implement this policy.[60]

1990 Amendments to the Clean Air Act

Competitiveness concerns were prominent in the debate about the 1990 Amendments to the Clean Air Act.[61] This law, the first major revision of Federal air pollution control requirements since 1977, significantly strengthened U.S. clean air requirements. Much of the burden of meeting the law's requirements will fall on U.S. business. Congress recognized this in section 811 of the 1990 Amendments, which noted (among other things) that U.S. business would need to make significant air quality investments and could incur additional costs in implementing the law's requirements.[62] Congress also expressed concern that complying with the act might make it difficult for American jobs, production, processes, and products to compete with countries with less demanding environmental requirements. Congress also found that mechanisms 'should be sought through which the United States and its trading partners can agree to eliminate or reduce competitive disadvantages. '

The law called on the President to report back to Congress within 18 months (May 15, 1992) with an evaluation of competitive impacts and a strategy for addressing such impacts through 'trade consultations and negotiations. The strategy is to include options that might be employed to deal with competitive disadvantages caused by differences in standards among U.S. major trading partners. Examples of such options stated in the law were harmonization of standards and trade adjustment measures. A number of bills and proposals currently before the 102d Congress seek to promote foreign environmental standards through trade negotiations or measures (see app. B).

To respond to section 811, the EPA Office of Air and Radiation assembled an interagency team including EPA,

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54 Public Law 92-500, section 6.

55 U.S. Department of Commerce, *The Effects of Pollution Abatement on International Trade* (Washington, DC: U.S. Department Of Commerce, 1973). Also for years 1974 and 1975; U.S. Department of Commerce, *Environmental Standards and Comparative Costs of Production in the Aluminum Industry* (Washington, DC: November 1976).

56 Loren E. Casement, Effects *of Pollution Abatement Costs on Exports and Imports by Selected SIC's* (Washington, DC: U.S. Department of Commerce, 1977).

57 Loren Casement, U.S. Department of Commerce, personal communication, Jan. 28, 1992.

58 U.S. Department of Commerce, "U.S. Pollution Control Costs and International Trade Effects-1979 Status Report," internal document, September 1979, p. 3.

59 Public Law 92-500.

60 Jeffrey Leonard, *Environmental Regulations Driving U.S. Industry* Overseas? (Washington, DC: The Conservation Foundation 1984), p. 31.

61 Public Law 101-549.

62 Based on the Administration's original Clean Air Act proposal, the act would add roughly $14.6 billion in costs per year by the year 2000, resulting in total annual air costs to $45 billion. (U.S. Environmental Protection Agency, Office of Policy, Planning, and Evaluation, *Environmental Investments: The Cost of a Clean Environment* (Washington, DC: December 1990).

Department of Commerce, U.S. Trade Representative, and the State Department that is preparing a two-part study. The first phase, which as of March 1 has been completed in draft form, compares air quality controls of United States with those of Canada, Germany, Japan, Korea, and Mexico. The report examines not only the different air pollution standards and regulations in each nation, but also the degree to which regulations are actually achieved and enforced. The second phase, which is underway, will identify and assess the economic effects of the Clean Air Act on four U.S. industries and calculate the likely effect on trade of the price increases. The reports are expected to be delivered to Congress on or before May 15, 1992. As of March 1992, evaluation of means to address the competitive impacts of the act through trade consultations or negotiations had not begun.

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