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Paul S. Kibel

Golden Gate University School of Law, pkibel@ggu.edu

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Editors' Summary: In environmental economics, the concept of negative externalities refers to the costs of adverse environmental effects that result from resource extracting and industrial activities and that are borne by the public, rather than the responsible entity. While this concept is widely accepted, serious debate exists as to whether environmental regulation for internalizing environmental externalities is market correcting or market distorting. This debate is rooted in disagreement and uncertainty as to what constitutes an environmental externality and in the difficulty of assigning a specific monetary value to environmental externalities. Many environmentalists seek to correct the market failure associated with negative externalities by forcing the entity producing the product in question to internalize the costs of environmental protection. Free market advocates, however, often counter this strategy by citing the comparative advantage theory, which holds that government regulation that reallocates costs and benefits can reduce economic efficiency. Under a comparative advantage analysis, policies that impose environmental costs on producers often can be viewed as the causes of, not the solutions to, market distortions.

This Dialogue attempts to place the conflict between the principles of negative externalities and comparative advantage in a less theoretical context. To that end, the author examines the relationship between national incentives to protect natural resources and international trade rules that seek to restrict the use of natural resource subsidies. The author further evaluates the extent to which the international trade rules account for the problem of negative externalities, and the extent to which the rules recognize the potentially effective role that national incentive programs can play in correcting market failures. From this evaluation, the author concludes that the legitimacy of "green" subsidies under international trade rules is uncertain. The current trade rules define green subsidies too narrowly and may discourage the use of national incentive programs to improve protection of natural resources and the environment. Therefore, the author proposes changes to ensure that national incentives to protect natural resources are effectively recognized and preserved under international trade law.

Paul S. Kibel is an adjunct professor at Golden Gate University School of Law, a lecturer at Stanford University, and an environmental associate at Fitzgerald, Abbott & Beardsley in Oakland, Cal. In 1998, Routledge Press of New York published a collection of his essays entitled THE EARTH ON TRIAL: ENVIRONMENTAL LAW ON THE INTERNATIONAL STAGE. He holds an LL.M. from Berkeley's Boalt Hall Law School. The author thanks Brennan Van Dyke of the Center for International Environmental Law in Washington, D.C., and David Johanson of Stewart & Stewart in Washington, D.C., for their comments on an earlier draft of this Dialogue.

One of the most widely accepted concepts in the field of environmental and natural resource economics is that of the "negative externality." The concept is relatively straightforward. In many resource extracting and industrial activities, there are impacts that adversely affect the health, environmental, and economic interests of the public at large. Examples of such impacts are easy enough to find. The runoff of pesticides and petroleum fertilizers from farming can damage water quality. Intensive logging of steep slopes can lead to flooding in lowland areas because there are no longer hillside forests to retain rainfall. The draining of wetlands and marshes can remove critical habitat for birds, thereby leading to species decline. The air pollution from a factory can cause respiratory illness in the surrounding community. Economists refer to these impacts as negative externalities because the costs associated with the damage are not borne by the entity causing the damage. Rather, these costs are externalized onto society at large.
From an economic efficiency standpoint, the problem with negative externalities is that they result in the inaccurate pricing of products. The true costs of producing a product [29 ELR 10412] are not reflected in the price that consumers pay and, hence, the unregulated market does not operate to curtail or discourage environmentally damaging practices. Moreover, the total costs of the negative externality often exceed the profits made by the business entity causing the externality, placing a drag on the overall economy. The underlying goal of many environmental policies, therefore, is to correct the market failure associated with negative externalities by forcing the entity producing the product to internalize the costs of environmental protection. These corrections help the market to function better by ensuring that environmental costs, along with other costs such as labor, transportation, and resources, are reflected in the final price.

Economic policies that deal with the problem of negative externalities, however, often run into conflict with another economic principle—comparative advantage. Comparative advantage theory holds that government regulation that reallocates the economic costs and benefits that occur in the open market can reduce the efficiency of the economy. Comparative advantage recognizes that some regulation is required to preserve the proper competitive functioning of a market economy. As such, under comparative advantage analysis, government policies that help internalize environmental externalities can be viewed as market correcting and, therefore, appropriate. However, under comparative advantage analysis, environmental regulation also can be viewed as market distorting on the basis that such regulation improperly reallocates the market's economic costs and benefits. The debate over whether environmental regulation is market correcting or market distorting is rooted in disagreement and uncertainty as to what constitutes an environmental externality, and in the difficulty of assigning a specific monetary value to environmental externalities. Is the destruction of ecosystems an externality? How does one quantify the benefits citizens derive from more parks or decreased pollution? What is the monetary value of avoiding the extinction of an endangered species? What is it worth to prevent global warming or ozone depletion? Free market advocates and environmental advocates are likely to present very different answers to these questions. As a result, although the principle of environmental externalities and the principle of comparative advantage may be compatible in theory, in practice and political reality they can often clash.

This Dialogue attempts to place the conflict between the principles of negative externalities and comparative advantage in a less theoretical context. More specifically, this Dialogue examines the relationship between national incentives to protect natural resources and international trade rules that seek to restrict the use of natural resource subsidies. It evaluates the extent to which current international trade rules account for the problem of negative externalities, and the extent to which these rules recognize the potentially effective role that national incentive programs can play in correcting market failures. The Dialogue concludes that, despite the progress made during the Uruguay Round of the General Agreement on Tariffs and Trade (GATT),3 the legitimacy of green subsidies under international trade rules is still uncertain. The Dialogue, therefore, proposes changes to ensure that national incentives to protect natural resources are effectively recognized and preserved under international trade law.

The Economic Case for Market-Based Environmental Policies

Although policymakers generally have agreed on the goal of internalizing environmental costs, there has been considerable debate over the best regulatory method for achieving this goal. Beginning in the late 1960s and early 1970s, the United States and the countries of western Europe were the first nations to comprehensively address the problem of negative environmental externalities. The first generation of environmental law was based primarily on the "command-and-control" system. Under the command-and-control system, the government sets specific pollution limits (for discharges into air and water) or mandates the use of specific pollution-reducing technology. Although this first generation of environmental laws was able to achieve tangible improvement in pollution control, in the 1980s these laws came under increasing criticism. These criticisms were twofold. First, it was argued that there were other policies that could achieve the same environmental protection goals with increased economic efficiency and less government bureaucracy. Second, it was contended that while the command-and-control approach might work for pollution problems, it was not well-suited to problems relating to natural resource management (such as forestry and agriculture). These critics, many of whom were economists, maintained that the superior alternative to command-and-control environmental regulation was "market-based" or "incentive-based" policies.

The basic premise of market-based environmental regulation is that the most effective method to achieve environmental protection goals is to provide industries with economic incentives to improve environmental
performance. These incentives rely on the forces of the market and economic self-interest and, thus, make command-
and-control regimes unnecessary, or at least a fallback or default strategy of environmental regulation. In the natural
resources field, one example of this alternative form of regulation would be the availability of government subsidies for
timber companies that voluntarily agree to protect wildlife forest habitat, or to refrain from logging on steep slopes or in
riparian zones. Another example would be incentives, such as tax [29 ELR 10413] breaks, for agricultural operations
that voluntarily agree to conserve water, reduce pesticide use, or preserve wetlands and woodlands on farmland. Yet
another example would be providing free or undermarket access to government lands to establish solar or wind energy
facilities. All of these policies use government incentives to make environmentally responsible practices—practices that
do not externalize the costs of environmental damage—more competitive in the marketplace. As Daniel Esty, Director
of Yale's Environmental Policy Center, has observed, government policy needs to provide more "carrots" and less
"sticks," so that the market becomes the ally and not the enemy of natural resource protection.8

A concrete illustration of the market-based approach in the natural resource sector can be found in the European
Union's (EU's) agricultural policy. In 1985, the European Commission released a landmark report that documented the
adverse environmental impacts of industrial agriculture. The report, which became known as the 1985 Green Paper,
concluded that the widespread use of pesticides and chemical fertilizers, and removal of trees and marshes, were
responsible for declining water quality and the destruction of ecosystem habitat for many endangered species.9 In the
early 1990s, the EU passed several pieces of legislation that sought to respond to the environmental problems identified
in the 1985 Green Paper.10

Two of the most important pieces of EU legislation dealing with the farming-environmental nexus were Regulation
2328/91 (Forestry Regulation)11 and Regulation 2078/92 (Agro-Environmental Regulation).12 Among other provisions,
the Forestry Regulation established that the EU would pay farmers an "annual premium per hectare to cover losses of
income resulting from afforestation of agricultural land."13 Similarly, the Agro-Environmental Regulation established
that farmers could receive aid from the EU if they "reduce substantially their use of fertilizers and/or plant protection
products, or introduce or continue with organic farming methods."14 The basis for and objective of these regulations
was explained clearly by Jacques Delors, President of the European Commission: "One of the tasks of the Community's
environmental policy must be to provide incentives for better farming without damage to the countryside or natural
resources."15

The EU's farming-environmental regulations present us with an economic paradox of sorts. To protect the marketplace
from the distortions and inefficiencies of negative environmental externalities, governments must often introduce
incentives (subsidies/aid) to discourage the practices that are causing the harm. As discussed below, this paradox
becomes particularly problematic when considered in the context of international trade rules.

Subsidies Discipline Under GATT: The Status of National Environmental Incentives

The discussion of natural resources incentives has focused so far on what are often called "green" subsidies, meaning
subsidies to improve environmental protection and reduce negative externalities. In the context of international trade
law, however, the focus has been primarily on subsidies that reduce production costs, or provide export price support,
for natural resource industries. In the environmental policy field, these are often called "brown" subsidies, because they
actually encourage natural resource degradation by artificially lowering the costs of extracting or producing resources.

Negative externalities and brown subsidies, therefore, can be understood as passive and active manifestations of the
same problem—namely, the rest of society picks up the tab for resource industries' costs and damage. As Gareth Porter
of the Center for International Environmental Law explained in a 1996 paper,

from an economic standpoint, the difference between the failure of a government to impose the
internalization of environmental costs on industry and a government's reduction of the costs of production
through an overt intervention is less important than the similarity between the two situations. Both
practices distort markets by causing the private costs of products to diverge from social costs.16

Brown subsidies are prevalent in nearly every natural resources sector. In the hard-rock mining sector, for instance,
U.S. policy on federal lands still operates under the General Mining Law of 1872. Under the 1872 law, the federal
government grants private mining companies the right to mine on public land for only five dollars per acre, far below
the fair market value of the mining right.17 In the marine fisheries sector, for instance, many national governments have
provided and continue to provide grants or low interest loans to cover the costs of new fishing vessels. This overcapitalization of fishing industry has dramatically increased the tonnage of fish caught, but also has overwhelmed the regenerative capacity of fish stocks. In the logging sector, Canadian provincial governments, such as British Columbia, charge private timber companies a fixed and nominal "stumpage fee" for the right to log on federal lands. As with the 1872 General Mining Law in the United States, Canada's stumpage fee is far below the market value. All of these subsidies are considered brown, because they generally lead to overprotection, and abuse and degradation of natural resources.

Although brown natural resource subsidies clearly have a distorting effect on international trade, the elimination of such subsidies has not been addressed directly in international trade agreements. Instead, in the area of subsidies, trade rules have been directed at the reduction and elimination of trade-distorting subsidies. These subsidies have been targeted because of their potential impacts on competitiveness, both between private firms and nations. Whether these trade-distorting subsidies may also have negative (brown) environmental or natural resources impacts has been a question that falls outside the substantive scope of international trade agreements. Even in the area of trade-distorting subsidies, international efforts at regulation are a relatively recent development.

The discipline and reduction of domestic subsidies was not a major priority when GATT was adopted in 1947. The original GATT text did not contain provisions addressing the potential trade distorting effects of subsidies. The first GATT subsidy provisions, in Article XVI, were adopted as amendments in 1956-1958. The Article XVI amendments dealt with export subsidies for both primary and nonprimary products. Although the Article XVI subsidy provisions were somewhat effective in reducing export subsidies on nonprimary products, in the area of primary products, GATT's export subsidy provisions were largely ignored until the early 1970s. Instead, the initial main focus of GATT contracting parties was on eliminating quantitative restrictions on imports and exports, and on reducing tariff rates. As GATT made progress on these initial goals, however, it began to pay closer attention to the subsidies issue.

The first major attempt to deal with domestic subsidies by GATT was during the Tokyo Round in 1973-1979. The Tokyo Round resulted in the 1979 Agreement on Interpretation and Application of Articles VI, XVI, and XXII (Tokyo Round Subsidies Agreement). This agreement sought to strengthen restrictions on export subsidies by setting forth criteria for assessing whether or not a GATT party had been injured by an export subsidy program, and by clarifying what remedies are available to nations that have been injured by export subsidy programs. Only 25 nations, less than one-third of GATT's contracting parties, however, agreed to sign the Tokyo Round Subsidies Agreement. Hence, its scope and international application were somewhat limited.

Because of general dissatisfaction with the effectiveness of the Tokyo Round Subsidies Agreement, subsidies emerged again as a major issue in the GATT Uruguay Round negotiations, between 1986-1994. The Uruguay Round resulted in two new agreements that pertain to natural resources subsidies: the 1994 Agreement on Agriculture (Uruguay Round Agricultural Agreement) and the 1994 Agreement on Subsidies and Countervailing Measures (Uruguay Round Subsidies Agreement). These two new agreements were much more specific in their commitments, and acceptance of these agreements was a precondition to joining the World Trade Organization (WTO), the institutional successor to GATT following the Uruguay Round. As such, they are likely to have a much greater impact than the previous Tokyo Round Subsidies Agreement.

The Uruguay Round Agricultural Agreement requires that each GATT nation develop a schedule to reduce both domestic production and export price support programs. The agreement therefore adopts the same gradual approach that GATT has taken with tariff levels, by which trade measures are phased in over time to reduce sudden economic displacement and political instability. Annex 2 of the Uruguay Round Agricultural Agreement also provides, however, that certain types of government funding are exempt from the price support reduction amendments, including "payments under environmental programmes." To qualify for this exemption, payments must "be determined as part of a clearly defined governmental environmental or conservation programme and be dependent on the fulfillment of specific conditions" and must be "limited to the extra costs of income involved in complying with the government programme." Annex 2 states that the exemption for certain government funding will not apply if the payments "have the effect of providing price support to producers."

The Uruguay Round Subsidies Agreement applies to all products that are not subject to the Uruguay Round Agricultural Agreement. The Uruguay Round Subsidies Agreement created the "traffic light" framework for subsidies, which
establishes three basic categories of subsidies—"red light" subsidies, "green light" subsidies, and "yellow light" subsidies. Red light subsidies are defined as subsidies contingent on either "export performance" or on "the use of domestic over imported goods." Red light subsidies are absolutely prohibited. Yellow light subsidies include any subsidy that results in "(a) injury to the domestic industry of another Member; (b) nullification or impairment of benefits accruing directly or indirectly to another member under GATT; (c) serious prejudice to the interests of another Member." Nations are permitted to offer yellow light subsidies, but other nations are permitted to impose equity-type tariffs to offset such subsidies. Green light subsidies refer to "non-actionable" subsidies, meaning that they are permitted and that other nations are not permitted to impose equity-type tariffs. The category of nonactionable, green light subsidies [29 ELR 10415] includes "assistance to promote adaptation of existing facilities to new environmental requirements imposed by law and/or regulations." To qualify as nonactionable, these environmental subsidies can only be for a "one time non-recurring measure" and must be "directly linked and proportionate to a firm's planned reduction of nuisances and pollution, and may not cover any manufacturing cost savings which may be achieved." To qualify as non-actionable, these environmental subsidies also cannot cover more than 20 percent of the costs of the pollution reduction measure.

The environmental programmes exemption to the Uruguay Round Agricultural Agreement and the green light provisions of the Uruguay Round Subsidies Agreement can be viewed as the first substantive attempt by the WTO to address the question of green subsidies. Both of these agreements recognize that domestic subsidies can play an effective role in improving environmental protection and natural resource conservation, and that international trade rules need to preserve a place for such subsidies.

As the text of these agreements reveals, however, it is not easy to articulate trade rules that can effectively discriminate between incentive programs that have positive (market-correcting) economic-environmental impacts, and market interventions that have negative (market-distorting) economic-environmental impacts. This is because the theoretical distinction between market-correcting and market-distorting subsidies, and between green and brown subsidies, often becomes less clear in the real world of natural resource policy. There are some government programs that appear as brownish-green, or greenish-brown, depending on the observer's policy perspective.

For example, consider a government grant program that enabled fishers to purchase new fuel efficient fishing vessels. These new vessels may discharge less pollution and use less petroleum, but they also make it possible to travel to distant water fisheries, thereby increasing the catch and depleting high seas stocks. Consider a government program that pays private timber companies to plant new trees after clearcut logging on public land. This program might contribute to reforestation, but it also validates the continuation of destructive clearcut logging practices. As such, the fishing vessel and reforestation programs could be reasonably characterized as either market-correcting and green, or market-distorting and brown.

Because of the difficulty in distinguishing between market-correcting and market-distorting interventions, the drafters of the new Uruguay Round agreements recognized that the problem could not be solved through an international trade rule that simply permits green natural resource subsidies. The invitation and opportunity for abuse under such a general rule by resource industries would be far too great. If such a broad rule was adopted, industry would simply make certain that all market-distorting subsidies contained some green elements as well, thereby providing the necessary environmental cover for the subsidies to be justifiable under international trade rules. The result would be what noted trade economists Alan Deardoff and Robert Stern have called "acupuncture with a fork." Namely, in attempting to preserve national incentives that protect natural resources, environmentalists might inadvertently be providing industry with a new legal basis to defend environmentally destructive, trade-distorting subsidies. To curtail such abuse, the Uruguay Round Agricultural Agreement and the Uruguay Round Subsidies Agreement set forth an extremely narrow definition of what constitutes a permissible, or nonactionable, green subsidy.

Unfortunately, the narrowness of the green subsidy exceptions in the WTO agreements suggests that many legitimate domestic programs to improve natural resource protection will likely be deemed trade-distorting and, therefore, actionable. In fact, some environmentalists have suggested that the green subsidy provisions in the Uruguay Round Agricultural Agreement and the Uruguay Round Subsidies Agreement were simply "bones" thrown to the environmental community in response to opposition to the proposed WTO regime. These critics suggest that the purpose of these bones was to give the impression of authorizing the use of green subsidies, while not actually doing so. Regardless of whether the narrowness of WTO green subsidy provisions was prompted by valid concerns about abuse,
or by the underlying goal of delegitimizing environmental protection policies, the result is still the same. As currently written, the WTO green subsidies provisions do not adequately preserve the legitimacy of national incentive programs to protect natural resources and the environment.

**Uruguay Round Defects: Defining the Problem of Defining Subsidies**

The Uruguay Round Agricultural Agreement and the Uruguay Round Subsidies Agreement represent an important first step to clarify the status of green subsidies in the context of international trade rules. By requiring that green subsidies be limited to, or proportionate to, the extra costs/lost profits involved in complying with environmental programs, the agreements have proposed a legal basis for identifying and discouraging industry attempts to misappropriate the green subsidy exceptions for general price support programs. These equivalency rules appear to provide a viable means to help ensure that subsidies that exceed the approximate costs/profits will not be protected under the green subsidy exceptions.

The Uruguay Round agreements, however, were less successful in establishing which government incentive programs should properly qualify as nonactionable green subsidies. By adopting an unnecessarily narrow definition of green subsidies, the agreements have limited the potential for national incentive programs to contribute to improved natural resource protection.

In the Uruguay Round Agricultural Agreement, for example, the introduction to Annex 2 (which contains the section on environmental programmes) states that government funding programs can only be exempt so long as they do not have the "effect of providing price support to producers." Because all agricultural subsidies, even environmental subsidies, reduce the production costs of farming, it is unclear how Annex 2's "price support" language might affect the availability of environmental subsidies in the farming sector. If interpreted broadly, this price support language could make it difficult to invoke the environmental programme exception. In addition, there are many natural resources, such as fisheries and hard-rock minerals, that are not covered by the Uruguay Round Agricultural Agreement. Subsidies to improve the environmental performance of these natural resource sectors, therefore, cannot be justified under the agreement's environmental exception. Rather, they must be justified under the rules set forth in the Uruguay Round Subsidies Agreement.

The green incentives exception in the Uruguay Round Subsidies Agreement is even narrower than the exception in the Uruguay Round Agricultural Agreement. This exception only applies to "one time non-recurring measures" to improve industrial "facilities," and thus could not be used to improve the general extraction or harvesting practices of industries such as hard-rock mining, fishing, or timber. Moreover, the green subsidies exception in the Uruguay Round Subsidies Agreement only applies to requirements that are imposed by law. However, environmental incentive programs intentionally do not impose any requirements. Rather, they provide economic benefits to those that choose to participate in the programs. It is, therefore, not clear that incentive-based environmental programs would fit within the green exception set forth in the Uruguay Round Subsidies Agreement.

It is possible that the WTO could adopt a more inclusive definition of green subsidies than the one set forth above. By essentially disregarding the price support condition of the Uruguay Round Agricultural Agreements, and by essentially disregarding the "one time recurring measure" and "facilities" conditions of the Uruguay Round Subsidies Agreement, the WTO could create a viable green subsidies exception in international trade. It is also possible that the WTO could justify green subsidies that are inconsistent with the Uruguay Round agreements by appealing directly to the natural resources conservation exceptions set forth in Articles XX(b) and (g) of GATT's main text. Article XX(b) permits measures necessary to protect human, animal, and plant life and Article XX(g) permits measures related to the conservation of nonrenewable resources.

There is little indication, however, that the WTO will adopt such an interpretation of either the Uruguay Round agreements or the Article XX exceptions. In past disputes involving the environmental exceptions to general trade rules, GATT panels and the WTO have consistently interpreted these exceptions very narrowly. For instance, in 1998 the WTO's Appellate Body—a new post-Uruguay Round institution—issued two important environmental rulings. The first ruling involved a challenge by the United States to the EU's ban on beef grown with artificial hormones. The second ruling involved a challenge by India, Malaysia, Pakistan, and Thailand to a U.S. law that prohibited the sale or importation of shrimp caught without devices to protect sea turtles. In the first ruling, the WTO Appellate Body held that the European beef hormone ban could not be justified under the 1994 Agreement on the Application of Sanitary...
and Phytosanitary Measures (SPS Agreement).48 The SPS Agreement was adopted to determine under what conditions WTO member states may adopt measures to protect public health.49 In the second ruling, the WTO Appellate Body held that the U.S. sea turtle measure could not be upheld under the Article XX(g) conservation of exhaustible exception.50

As the recent beef hormone and sea turtle rulings indicate, GATT and the WTO have traditionally adopted a restrictive interpretation of trade provisions which authorize environmental protection policies. At this point, there is little reason to anticipate that the WTO will interpret the environmental exceptions in the Uruguay Round Agricultural Agreement and the Uruguay Round Subsidies Agreement any more broadly than it has interpreted the GATT/WTO exceptions in the past.

Conclusion: Reconciling Ecological Subsidies and Trade

Increasingly, there are policy efforts to reconcile the legal relationship between environmental protection policies and international trade rules. Articulating the proper role of subsidies will undoubtedly continue to be a critical aspect of this reconciliation effort. More specifically, there will be efforts to craft trade rules that preserve government incentives to improve environmental protection, while restricting subsidies that lead to environmental abuse and degradation.

[29 ELR 10417]

Although the Uruguay Round agreements represent a first attempt to recognize green subsidies under international trade law, this attempt has not adequately resolved the problem. Current WTO rules define green subsidies too narrowly, and may therefore discourage national incentive programs to improve protection of natural resources and the environment.

The WTO's restrictive approach to green subsidy programs is troubling because the alternative to these incentive-driven policies is the traditional command-and-control approach, which is already under attack.51 The consequence of narrowing the use of green subsidies may lead not to a return to command-and-control regulation, but rather to the absence of effective policies to internalize the negative environmental impacts of the unregulated marketplace. From both an environmental and an economic standpoint, this is clearly a bad result.

To avoid this scenario, perhaps the next step is to bring together the relevant provisions of the GATT main text, the Uruguay Round Agricultural Agreement, the Uruguay Round Subsidies Agreement, and the Uruguay Round SPS Agreement, and to develop a consolidated Ecological Subsidies Code (Ecosubsidies Code) under the WTO. An integrated Ecosubsidies Code could correct some of the defects in the current WTO regime. First, it could apply equally to all environmental and natural resources measures, not just certain agricultural products or certain manufacturing facilities. Second, it could remove the limiting "price support," "one time non-recurring measure," and "facility" conditions that have improperly narrowed the green subsidies exception. Third, it could clarify the legal relationship between the WTO green subsidies provisions, Article XX of GATT, and the Uruguay Round SPS Agreement. These changes would help to preserve the place of green subsidies in international trade.


4. See Daniel C. Esty, Toward a Multi-Frame World: Boundaries in Environmental Law and Policy, Paper Presented at the Institute for International Studies, University of California at Berkeley 2 (Mar. 8, 1999). In this paper, Esty notes that "questions must still be addressed about what sorts of [externalities] should be permitted . . . . It depends on what is defined as an externality." Id. Esty also notes that the "definition on externalities is a function of community standards," highlighting that the process of quantifying environmental externalities involves moral, political, and social judgments as much as objective economic analysis. Id.


7. See PAUL R. PORTNEY, NATURAL RESOURCES AND THE ENVIRONMENT: THE REAGAN APPROACH (1984); Stephen Lovejoy & Kathleen Heaphy, Look to the Market to Provide Incentives, EPA J., Sept./Oct. 1992, at 34 ("Instead of a few thousand industries to control, there are a billion acres of farmland and a few million farmers and landowners. Enforcement of command-and-control regulation would be extremely difficult. In fact, it might be impossible.")


13. Forestry Regulation 2328/91, supra note 11, § (a)(c).

14. Agro-Environmental Regulation 2078/92, supra note 12, art. 2(a).


20. See John A. Ragosta, Natural Resource Subsidies and the Free Trade Agreement: Economic Justice and the Need for Subsidy Discipline, 24 GEO. WASH. J. INTL L. & ECON. 255, 273 (1990) ("Low resource prices often encourage excessive removal and discourage governments from paying for adequate environmental protection measures including timber replanting …. For example, the relatively poor record of the Canadian provinces on reforestation can arguably be traced to the ridiculously low prices they charged for timber.").

21. See GATT, supra note 5, art. XVI.

22. See JOHN JACKSON ET AL., LEGAL PROBLEMS OF INTERNATIONAL ECONOMIC RELATIONS 1162 (1995) ("GATT rules applicable to export subsidies were interpreted so as to make them largely meaningless.").


24. See JACKSON ET AL., supra note 22, at 769.


27. See Agreement on Agriculture arts. VI, VII, VIII, IX, and X, in DOCUMENTS SUPPLEMENT TO LEGAL PROBLEMS IN INTERNATIONAL ECONOMIC RELATIONS 102-06 (1995).

28. Id. annex 2 & 2(12), at 114.

29. Id.

30. Id. annex 1(b) & 2, at 110.


32. Id. art. 5, at 256-57.

33. See id.

34. Id. art. 8(2)(c), at 262 (emphasis added).

35. Id. arts. 8(2)(c)(i) & (iv), at 262.

36. See id.


39. For a thorough discussion of the effect of subsidies and international trade rules on the fishery sector, see Christopher D. Stone, Too Many Fishing Boats, Too Few Fish: Can Trade Laws Trim Subsidies and Restore the Balance in Global Fisheries?, 24 ECOLOGY L.Q. 505 (1997)

40. See Ken Cook, Farmers Must Do More Than Take Green Subsidies, EPA J., Sept./Oct. 1992, at 33 ("A green agricultural policy presided over exclusively by agricultural interests may look new, but in fact will mean business as usual both for taxpayers and the environment, something neither can afford.").


44. GATT Article XX provides that nothing in the agreement shall be construed to prevent measures "(b) necessary to protect human health, animals or plant life or health … [or] (d) relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption …" GATT, supra note 5, art. XX.
In all of the following GATT Panel decisions, the subsidy and/or environmental exceptions were rejected as bases for validating the government program being challenged: Canada Measures Affecting Exports of Unprocessed Herring and Salmon, Mar. 22, 1988, GATT B.I.S.D. (exempt Supp.) at 98 (1989); GATT Dispute Settlement Panel Report on United States Restrictions on Imports of Tuna, 30 I.L.M. 1594 (1991); WTO Report of the Appellate Body in United States Standards for Reformulated and Conventional Gasoline, 35 I.L.M. 603 (1996).


See WTO Beef Hormone Ruling, supra note 46, at 16.

See id.

See GATT. supra note 5, art. XX(g).

See supra notes 7-9.