

Siebert, Horst

Working Paper — Digitized Version

Trade policy and environmental protection

Kiel Working Paper, No. 730

Provided in Cooperation with:

Kiel Institute for the World Economy – Leibniz Center for Research on Global Economic Challenges

Suggested Citation: Siebert, Horst (1996) : Trade policy and environmental protection, Kiel Working Paper, No. 730, Kiel Institute of World Economics (IfW), Kiel

This Version is available at:

<https://hdl.handle.net/10419/878>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

Kieler Arbeitspapiere

Kiel Working Papers

Kiel Working Paper No. 730

TRADE POLICY AND ENVIRONMENTAL PROTECTION

by
Horst Siebert



Institut für Weltwirtschaft an der Universität Kiel
The Kiel Institute of World Economics

ISSN 0342 - 0787

Institut für Weltwirtschaft
Düsternbrooker Weg 120, 24105 Kiel

Kiel Working Paper No. 730

TRADE POLICY AND ENVIRONMENTAL PROTECTION

by
Horst Siebert

März 1996

662233

The authors themselves, not the Kiel Institute of World Economics, are solely responsible for the contents and distribution of each Kiel Working Paper. Since the series involves manuscripts in a preliminary form, interested readers are requested to direct criticisms and suggestions directly to the authors and to clear any quotations with them.

Contents

1. The Consistency of Environmental Scarcity Prices with WTO-rules.....	1
2. Preventing the Erection of New Trade Barriers	5
3. Approaches to Global Issues.....	9
4. A Multilateral Environmental Order.....	13
References.....	16

Abstract

The paper analyzes the relationship between trade policy and environmental protection. National and global environmental issues are distinguished. In principle, there is no conflict between an institutional order for international trade and national environmental policy. Protectionism against environmental policy, eco-imperialism and environmental policy as a trade strategy are not justified. Uncertainty in international trade arising from environmental policy should be reduced by the principles of first-best solution, of the appropriateness of means, of non-discrimination, of necessity, of the limits of territorial sovereignty, and of country-of-origin. With respect to global issues, international agreements, trade sanctions, side payments and trade liberalization are discussed. Finally, the paper looks at rule consistency between environmental and trade agreements.

-

International rules for trade and investment have evolved without explicitly taking into account environmental protection. The institutional arrangement for the international division of labor, laid down in the norms of GATT and of the newly set up World Trade Organization, attempts to provide a multilateral economic order in which the exchange of goods and the movement of resources can flourish in order to increase the wealth of all nations. Environmental policy has as its main aim to protect the natural living space of mankind and to integrate environmental scarcity into the economic decisions. Both policy areas thus relate to defining the institutional framework for decentralized economic decision making. A priori it cannot be ruled out that frictions between the two policy areas arise. In the following paper, I look at these frictions, I analyze how these frictions can be prevented or at least be reduced and how environmental issues can be integrated into the system of multilateral trade rules.

The environment has two functions for the economy: it is used for consumption and it serves as receptacle for wastes and emissions. In its role as a good for consumption it is a public good; in its capacity of absorbing wastes it is in principle a private good although it has been used as a common property resource with free access in the past. Environmental policy determines the optimal quality of the public good and establishes property rights and explicit or implicit prices for the use of the environment as a receptacle of waste (Siebert 1995). Since the environment is defined over space, policy approaches to express environmental scarcity vary with respect to the spatial dimension of the environment. In the context of trade issues, national and global environmental issues have to be distinguished.¹ In the case of national environmental issues boundaries of environmental systems more or less coincide with political frontiers. Global environmental systems such as the depletion of the ozone layer relate to the world as a whole.

1. The Consistency of Environmental Scarcity Prices with WTO-rules

When the environment can be treated as a national public good, environmental policy is consistent with the basic philosophy of the international division of labor.

I appreciate comments from Gernot Klepper, Rolf J. Langhammer and Katrin Springer.

¹ I neglect transfrontier pollution problems.

Consistency of the Polluter-Pays-Principle with the Principle of the Division of Labor. Take as a typical case when pollutants are generated in production from stationary sources. Environmental abundance or environmental scarcity differs between countries, for instance, because of differences in the natural assimilative capacity, in the demand for assimilative services (as a result of a given industrial structure or of technologies used) and in preferences for the public good. Domestic environmental policy that succeeds in equalizing private and social costs and thus in internalizing environmental costs expresses the „correct“ environmental scarcity (abundance) and consequently the "correct" relative comparative advantage of a country. Environmental policy can be interpreted as correcting a distortion in the allocation of resources. In this context, in which the traditional trade theorems can be applied (Siebert et al. 1980, Siebert 1995, Rauscher 1996), trade and investment flows are a mechanism by which differences in endowment are exploited to generate benefits from trade. Countries will specialize according to their comparative advantage in terms of environmental endowment. There is no conflict between an institutional order for international trade and national environmental policy. The Polluter-Pays-Principle (applied nationally) is consistent with international trade rules.

The fallacy of protectionism against environmental policy. Trade measures against a less strict environmental policy elsewhere are not justified. If firms in other countries are facing less strict environmental rules, they can exploit that comparative advantage. From a welfare point of view there is no justification for domestic firms demanding „a level playing field“ for the producers at home. Domestic import-competing sectors ask for import taxes or quotas for products that have been produced with a higher pollution intensity abroad. Or, pollution-intensive export sectors at home which lose their comparative advantage due to a strict domestic environmental policy push for compensations or countervailing measures to make up for the loss of their relative position.

If these political demands are satisfied, environmental policy will give rise to new trade distortions. The idea of the international division of labor will be violated. The costs of such a policy are bound to be high in the long run since such a policy means that each country will try to compensate its comparative disadvantage by policy measures. A country poorly endowed with labor will protect itself against labor-intensive imports; a country poorly endowed with capital will protect itself against capital-intensive imports; a country poorly en-

dowed with technical knowledge will protect itself against technology-intensive inputs. And a country poorly endowed with environmental services will protect itself against pollution-intensive goods. In such a scenario, the idea of the advantage of international specialization is dead.

The fallacy of eco-imperialism. Ecologists require other countries to strive for the same environmental quality as their home country. Such an eco-imperialism is not justified, either, if environmental abundance (including preferences) differs. Countries with a larger abundance of the environment (and/or a lower demand for environmental quality) need not charge the same scarcity price for using the environment as a receptacle of wastes as a country scarcely endowed with environmental goods. From a theoretical point of view, there are at least three factors that justify diverging environmental regulations as a response to seemingly identical environmental problems: First, the environmental capacities to assimilate pollutants may differ between countries. Second, different preferences for environmental quality may prevail in different regions. Third, income differences may be a reason for divergences in environmental policies even if preference schedules are identical (Maestad 1992, p. 63). Under these conditions, an artificial harmonization of environmental policy instruments and standards would cause an inefficient factor allocation and would result in smaller (possibly negative) gains from trade.

The fallacy of environmental policy as a trade strategy. It cannot be ruled out, however, that a country deliberately undertakes no environmental policy at all or only a lax one in order to promote its exports and domestic import-substitutes. This would indeed represent a distortion which can be labelled eco-dumping in the sense that environmental costs of production do not sufficiently enter into the product price. For such a policy to have an impact on relative prices in the world, however, the country must be sufficiently large. It should also be noted, that the country explicitly hurts herself and is willing to accept environmental damage in order to improve its competitiveness for products. It is hard to see how such a policy can be followed unless it corresponds to the preferences of its citizens. Therefore, one can rely to some extent on a self-correcting mechanism as a check on this policy. Also, in quite a few cases, damages may have long-run negative impacts. It does not seem to be too promising to use a lax environmental policy in the context of strategic trade policy where — at least in the model — policy interventions such as subsidies are

supposed to lead to gains in the future due to an early start if at the same time, a lax environmental policy will be associated with long-run opportunity costs of environmental degradation.

As an alternative to relying on the self-correction due to national welfare, one would need an international code with respect to environmental policy in analogy to the subsidy code. This would be especially relevant if the country is large. Relative to problems of the traditional subsidy code the additional difficulty would consist in defining a frame of reference for the „correct“ national environmental abundance from which distortions can be delineated. Such a code incidently would allow to specify subsidies for environmental purposes and to rule out exemptions for environmental protection in the existing subsidy code.

The fallacy of the pollute-they-neighbor via trade hypothesis. Some fear that environmental policy in industrial nations will improve the comparative advantage of newly industrializing countries in pollution-intensive sectors and will thus increase pollution there. Industrial countries would thus export their pollution via trade (or via investment flows). Such a reallocation would indeed take place under a ceteris paribus assumption of a given environmental policy in the newly industrializing countries. Assume that such a reallocation were not the result of a larger endowment with environmental quality in the industrializing countries but that it is due to a stricter environmental policy in the industrial countries. Then, the newly industrializing countries can undertake their own environmental policy in order to protect their environment. They do not have to accept the increase in pollution from the international reallocation of production.

The advantage of first best policy instruments. Trade policy measures have been proposed in order to correct distortions originating from the divergence of private and social costs. Thus, an export tax is a disincentive for the production of a pollution-intensively produced export good or an import subsidy is an incentive to produce less of the pollution-intensively import-substitute at home. Similarly as product taxes, these policy instruments only have an impact on relative product price which in turn affects demand and, eventually, production. Export and import taxes influence emissions only indirectly; they fail to steer emissions directly. Consequently, trade policy measures are unsuitable instruments for environmental policy.

The innovation of environmental economics relative to the Pigouvian analysis of externalities is to have explicitly modelled technological externalities and introduced the technological (i.e. ecological) systems — the atmosphere, river and ground water systems and other natural systems — that link economic activities via emissions and pollutants ambient in the environment. Consequently, for environmental allocation it is not sufficient to discuss Pigouvian type product taxes but environmental scarcity prices attached to emissions and pollutants ambient in the environments. To deal with environmental degradation, specific environmental policy measures should be used. These instruments should address emissions directly in order to set the right incentives and in order to stimulate all the potential reactions in abatement and production as well as in demand. Therefore, trade policy is only a second-best instrument. Furthermore, the introduction of trade barriers would distort prices whereas the removal of trade barriers contributes to the reduction of price distortions, which is a necessary, albeit not a sufficient condition for internalizing the environmental costs.² A case in point is agricultural overproduction due to protectionism leading to an overuse of the environment.

The advantage of price instruments. In order to minimize the conflict between environmental policy and a free flow of trade and resources price instruments such as emission taxes and prices for emission rights are strictly preferable to administrative or regulatory environmental policy instruments such as licensing procedures, emission standards for production facilities, i.e. for investment goods, or product norms. In the international division of labor, it is quite normal that national prices for immobile resources differ. The environment is one such immobile national resource. Price instruments are therefore ideal in expressing scarcity; they do not erect trade barriers.

2. Preventing the Erection of New Trade Barriers

The consistency between national environmental policy and international trade rules as institutional arrangements for an efficient international allocation becomes less clear if

² For a theoretical analysis of global welfare impacts of trade and trade liberalizations see Maestad (1992). Anderson (1992) investigates the welfare impacts of trade liberalizations from individual country's point of view.

additional aspects of environmental policy are taken into account. One such aspect is the taxonomy of the environmental problem which is much richer than the case of pollutants arising from stationary sources of production (Siebert 1995, p. 180). Examples are pollutants embodied in consumer goods, released in the use of consumer goods or emissions from mobile sources.

The freedom to apply environmental policy instruments. The rules of the World Trade Organization allow national governments to apply environmental policy instruments that are judged necessary (GATT 1992). This includes national emission taxes (their border adjustment in the form of rebates for exports), permit systems, refund schemes for recyclable waste etc. The important condition is that these policy measures including technical regulations should not be formulated in such a way as to constitute unnecessary obstacles to trade. More specifically, environmental policy instruments should not discriminate between domestic and foreign products.

An exception to nondiscrimination is article XX of GATT which permits, under certain conditions, to let health, safety or domestic resource conservation goals overrule the criterion of nondiscrimination. „GATT rules ... place essentially no constraints on a country's right to protect its own environment against damage from either domestic production or imported products. Generally speaking, a country can do anything to imports or exports that it does to its own products, and it can do anything it considers necessary to its own production processes“ (GATT 1992, p. 23).

Principles to prevent obstacles to trade. Trade, however, will be distorted if a country, negatively affected in its environment and in its welfare by imports containing pollution or releasing pollutants when used, protects itself by taxing pollutants, by taxing the imports or by applying product norms. In such a case, imports would contribute to a domestic consumption externality against which measures can be lawfully applied under WTO rules: Yet, such measures would lead to uncertainty in the international division of labor. Therefore, a commitment to rules is necessary; such rules may help also to prevent that environmental policy may be used as a protectionist pretext. Thus, a WTO framework with some skeleton rules for trade with environmentally sensitive products is needed in order to

avoid a segmentation of the world market. The following guidelines may be instrumental in reducing the conflict between environmental and trade policy:

- Principle of First-Best Solution. A clear dividing line between trade policy and environmental policy should be drawn. Trade policy instruments should not be used for environmental protection; environmental policy measures should not be applied in trade policy. As a principle, in each policy area first-best instruments should be used.³

- Principle of the Appropriateness of Means. The principle of First-Best Solution has many names. It may also be called the Principle of the Appropriateness of the Policy Means; it is in line with article XX of GATT. Policy instruments should be chosen such that unnecessary distortions are avoided. Trade policy instruments should be regarded as inappropriate if, for example, emission taxes were available that addresses the environmental problem directly (Sachverständigenrat 1994/95, p. 245). Should trade measures nevertheless be taken into consideration, only those measures should be applied which are the least intrusive on trade, i.e. which are least trade restrictive. This may be called the Principle of Least Restrictiveness on Trade (Beghin et al., 1994, p. 4; Mattoo and Mavroidis, no year, p. 14).

- Principle of Non-Discrimination. Environmental policy instruments should neither discriminate between WTO contracting parties (MFN principle) nor between imported and domestic products (national treatment).⁴ This line has already been developed in the Thailand cigarette case decided in 1990. An exception to nondiscrimination is article XX of GATT which permits, under certain conditions, to let health, safety or domestic

³ Borderlines between the two policies may be floating as the example of a recycling content requirement suggests. Whether or not an imported product complies with this requirement is irrelevant for the achievement of the environmental objective to reduce waste in importing countries. This holds as waste management may not be a problem in exporting countries due to better absorptive capacities. Exempting, however, imports from say a tax on non-recycled content of paper would reduce the willingness of domestic producers to comply with the measures and would seem to be against the non-discrimination rule in GATT/WTO (Sorsa 1995, p. 6).

⁴ The equal treatment of domestic and foreign goods is not always sufficient to satisfy the non-discrimination principle against foreigners as, for instance, the case of recycling requirements which demand the used goods to be taken back by the producer shows (Rauscher 1996, p. 333).

resource conservation goals overrule the criterion on national treatment. However, to comply with the most favored nation clause, "bound" tariffs can only be raised by re-negotiating them according to the GATT procedure.

- Principle of Necessity. In deciding whether an exception to the general obligations of WTO members can be made, WTO panels will decide whether an instrument is "necessary", i.e. whether a departure from WTO rules is unavoidable (Mattoo and Mavroidis n.y.). This necessity test serves to keep the interpretation of exceptions narrow. Note that the list of exceptions in article XX is exhaustive; to reduce exemptions, the burden of proof lies with the party invoking article XX.

- Principle of the Limits of Territorial Sovereignty. Protecting the national environment and conserving a nation's resources as justified under article XX of GATT should not extend to another nation's territory and should be limited to the national territory. A country should not be allowed to justify environmental or trade measures with respect to environmental conditions in other countries. Environmental policy of a country should not address production or processing externalities emerging in another country.⁵

- Principle of Country-Of-Origin. With respect to product standards and norms for production processes, using the rules of the importing country (principle of destination) would erect severe trade barriers. Therefore, the country-of-origin rules should be applied. As a general rule, a country importing a product should not be allowed to apply its environmental standards to the production processes of another country. This principle was established in the Mexican tuna case decided in 1991 (GATT 1992, p. 15).⁶

- The Principle of Determining Product Similarity from the Demand Side. In determining whether products are similar when discussing non-discrimination, the similarity of goods ("like products" in the WTO wording) should be determined from the demand

⁵ Note, however, the difference between the Tuna-I and Tuna-II panel (Mattoo and Mavroidis n.y.); in the legal literature, the interpretation of the extrajurisdictional application of article XX (g) is open (see again Mattoo and Mavroidis).

⁶ Note the difference to the Tuna-II panel.

side and not from the production side. Thus, the criterion should be a high elasticity of substitution in demand between goods and not the technical aspect of production in the country of origin.

Ethical Restraints for Exports. When pollutants are contained in export goods or released in their use, the ethical problem arises whether a nation should apply an environmental standard to their exports different from the one used at home. This becomes especially relevant in the case of toxic wastes. Here the ethical answer is in the biblical tradition „You should not do to others what you don't want done to you“ or according to the Kantian imperative „You should behave in such a way that the guideline of your behavior can serve as a principle of the general laws.“ In a way, this is the ecological analogon to the most favored nation clause in multilateral trade. The rules at home represent the terms of reference. This can be interpreted as an expression of the country-of-origin principle. For the exports of waste, this means that waste only can be exported if the environmental standards of the exporting country are satisfied. This does not prevent the export of waste if other countries have better deposit conditions, for instance, in geological terms.

3. Approaches to Global Issues

Global environmental issues require different answers than national problems. Global environmental quality as a policy target has to be determined by comparing the world wide benefits and costs of environmental protection. Whereas the costs of achieving an environmental quality target can be clearly attributed to nations and therefore represent national costs, the benefit of an improved international quality of a global good accrues, in principle, to all nations. Unlike in the case of national environmental goods, there is no given international institutional arrangement by which the benefits and costs can be evaluated and by which the polluter-pays-principle can be implemented.

International agreements. International environmental agreements are the most efficient (first-best) way to address international environmental problems (Rauscher 1996, Maestad 1992, Beghin et al. 1994), because international cooperation policies can, in

principle, be designed as if the world was a single country and as if the polluter-pays principle was applied world wide.

However, the problem with international environmental agreements is that it may be difficult to arrive at and sustain such agreements. First, such agreements are fraught with free riding because global environmental media are a public good. Second, some countries may attach lower priority to solving a global environmental problem than other countries due to different preferences and risk attitudes. This also includes the fact that countries may disagree about the scientific evidence of environmental problems as it can be observed in the current climate change discussion (Maestad 1992, p. 51). Third, differences in income per capita among countries imply a different evaluation of the global environment, even assuming identical preferences and risk attitudes. Fourth, global environmental problems like, for instance, global warming may affect countries differently if the quality of public good changes which means that the public good in question is not a pure public good (Siebert 1995, p. 199). Fifth, countries may disagree with respect to the distribution of abatement costs (Maestad 1992, p. 52).

Under these conditions, countries can behave strategically. Negative and positive inducements (stick and carrot) may conceivably be a mechanism to induce nations to a cooperative behavior and to stabilize international environmental agreements. But even with sticks and carrots cooperative solutions for global environmental goods are extremely difficult to be achieved.

Trade sanctions. Sanctions such as political penalties or trade restrictions may conceivably force nations to a cooperative behavior. Sanctions inflict losses on countries, for instance, by withdrawing advantages enjoyed such as the participation in the international division of labor.

From a rather theoretical point of view, trade sanctions can have the advantage over several other penalty measures of making signatories (or non-defectors) better off at the same time as the non-signatories (or defectors) are made worse of and hence being more credible. The reason is that unilateral trade restrictions may imply terms of trade gains for the signatories in excess of their costs of a smaller trade volume. This argument, how-

ever, only holds if the signatories have sufficient market power to influence world market prices, if they have not yet implemented their optimal tariffs (Maestad 1992, p. 59) and if the theory of optimal tariff can be applied anyhow.

There are several disadvantages of trade sanctions. The credibility of trade sanctions as a penalty mechanism will be reduced if non-signatories or defectors are likely to retaliate when sanctions are implemented (Maestad 1992, p. 60). Moreover, trade sanctions, even if they can be justified, may open a Pandora's Box of protection bringing uncertainty to the international division of labor and starting a process of disintegration for the world economy. In the long run, the reduction in the gains of trade may offset the initial gains from improving environmental quality (Rauscher 1996, p. 326). Finally, trade sanctions may be connected with a smaller resource transfer to low income developing countries and lower economic growth (and therefore less potential for environmental policy). Consequently, they may lead to further environmental degradation (Subramanian 1992, p. 148). This is due to the phenomenon that income levels and environmental quality are highly correlated. Poverty and low incomes have been shown to crucially determine environmental degradation especially in relation to forest resources. Last but not least, the impact of trade sanctions may be ambiguous (Hufbauer et al. 1990). For all these reasons, the use of trade sanctions is problematic.

There is even a more systematic problem with sanctions. In a game theoretic context, sanctions can be modeled in such a way that cooperative behavior of countries in environmental issues is induced. Such sanctions may, however, destabilize the institutional order for the area of trade and investment. Thus, from the point of view of an economic order, sanctions may stabilize one order — the *rule system for the environment* — and destabilize the other — the *order for trade and investment*. From the point of view of institutional arrangements or of "*Ordnungspolitik*" in the sense of the Freiburg School, an order for one policy area should not be contingent on the institutional arrangement for another policy area because then the overall order will not be stabilizing. There is a hierarchy of order, and interdependence of subsystems of order in the hierarchy is an important aspect of the overall order. Therefore, care must be taken that the order for trade and investment and the order for the environment are independent of each other.

In any case, sanctions against an individual country should only be used if applied by an international organization within the framework of an existing international agreement which the country has signed. This implies that a system of sanctions has to be accepted by the countries in advance on a voluntary basis in the sense that countries bind themselves; otherwise sanctions can lead to a degenerating process of intensified international conflicts.

Side payments. Positive incentives are likely to be more effective than negative incentives to promote international environmental agreements. Countries placing a high value on global environmental quality would induce other countries to abate pollutants by compensation payments so that the Polluter-Pays-Principle no longer applies and the Victim-Pays-Principle takes over. Transfers can be a mechanism which makes sure that pollutants are abated with lowest costs. However, the prospect of transfers may create moral hazard problems. If a country can expect that transfers will be paid, it may behave strategically in abating less than her national optimum in order to receive more transfers. Cost-sharing and earmarking of transfers may help to correct these distortions in incentives to some extent. Foreign direct investment in environmentally friendly technologies and allowing the deductibility of emission-reducing investment for business taxes across the countries may be ways to bring forth pollution reduction in other countries.

Trade liberalization. A particularly beneficial way of inducing countries to participate in international environmental agreements may be trade liberalization. Trade liberalization will, for instance, improve the income opportunities of many developing countries, thus laying the foundation of a future increase in the willingness to pay for higher environmental quality in these countries. In the long run, trade policy might influence the priorities attached to solving environmental problems (Maestad 1992, p. 72). In fact, side payments in form of increased market access are superior to monetary transfers (provided environmental externalities are appropriately internalized), because trade liberalization is likely to involve positive efficiency effects in addition to their pure redistributive effects (Maestad 1992, p. 60). Additionally, trade liberalization compared with financial transfers may induce less of a moral hazard problem in form of strategic behavior of the recipient countries in order to maximize their transfer gains.

Withdrawal and compensation. Operational criteria should be developed as to whether policies damaging the global environment must be withdrawn and whether a country asked to withdraw an activity should be compensated. The principle of withdrawal and compensation should be favored relative to sanctions.

4. A Multilateral Environmental Order

A multilateral environmental order has to be consistent with a multilateral rule system for trade and investment; it has to reduce or prevent frictions between the two rule systems arising in the case of national and global environmental goods.

Rule consistency between environmental and trade agreements. Environmental agreements and trade agreements have evolved independently from each other in the past. From 1933 to 1990, 127 multilateral environmental agreements were concluded out of which 17 had trade provisions, especially in the area of protecting fauna and flora (GATT 1992, p. 11). It can be expected that environmental agreements will play a larger role in the future. Inconsistencies between institutional arrangements for trade and for the environment should be prevented:

- Both systems of rules must be based on the common target of reducing inefficiencies and distortions; the internalization of environmental cost is one method to reduce distortions.
- Voluntary agreements are to be preferred relative to prohibitions.
- Rules must be clear, so that conflicts are minimized.
- The use of instruments restricting free trade due to environmental concerns such as import bans on endangered species should be limited to specific cases.
- It should be attempted that all countries being members of WTO also adhere to the international environmental agreements.

No waiver. In the history of GATT, policy areas with a large complexity where multilateral solutions could not easily be found were exempted from the GATT rules. Thus, a waiver was applied for agriculture, for trade in textiles and for preferential agreements. It would

be costly to follow such an approach for environmental issues. Policy issues where a waiver has been used have proven to be a permanent source of friction in the past; moreover, as agriculture and preferential agreements show, exemptions have been an invitation for departing from the most favored nation principle. An initially intended temporary nature of the waiver could not be sustained. Last not least, the environment cuts across all sectors, so that unlike agriculture an environmental waiver does not represent a sectorial exemption; disputes in this area would more or less affect the complete spectrum of the international division of labor.

Dispute Settlement Procedure. The procedure for dispute settlement of the WTO should be extended to the environmental arena. Procedural rules, if agreed upon, can help to solve conflicts. Agreements on principles in substance are important in establishing rules for the world economy.

Some Tentative Conclusion. The international order for trade and for environmental protection should be consistent with each other. Since both institutional arrangements attempt to establish rules for coping with the issue of scarcity, albeit in different areas, there is no systematic contradiction between the two institutional arrangements:

- In the case of national environmental issues, putting a price tag on the use of the environment should be the dominating guide line; this is consistent with the concept of the international division of labor.
- Care must be taken to make sure that environmental policy does not erect new trade obstacles. Here the principles of first best solution, of the limits of territorial sovereignty, of the country-of-origin instead of destination, of non-discrimination and of determining product similarity from the demand side can be instrumental.
- With respect to global environmental goods, side payments, especially in form of increased market access via trade liberalization, should be used as a carrot to bring forth environmental improvement.
- Operational criteria should be developed as to whether policies damaging the global environmental quality must be withdrawn and how the country asked to withdraw its policy should be compensated.

- The trade and environmental order should not be contingent on each other; the rules in each area must hold independent of the other. The use of trade policy instruments for environmental protection should be minimized. Criteria of application should be defined ex ante in the WTO framework.
- No waiver should be applied for the area of environmental protection.
- The procedure for "dispute settlement" of the WTO should be extended to the environmental arena.

References

- Anderson, K. (1992), The Standard Welfare Economics of Policies Affecting Trade and the Environment. In: K. Anderson, R. Blackhurst (eds.), The Greening of World Trade Issues, Harvester Wheatsheaf, London, and University of Michigan Press, Ann Arbor 1992, 25–48.
- Beghin, J.D., D. Roland-Holst, and D. van der Mensbrugge (1994), A Survey of the Trade and Environment Nexus: Global Dimensions. OECD Development Centre Paris 1994.
- Eglin, R. (1993), International Economics, International Trade, International Environmental Protection. In: Wirtschaftspolitische Blätter 40 (3/4), 1993, 304–317.
- GATT (1992), International Trade 1990–91, Vol. 1, Geneva 1992.
- Hufbauer, G.C., J.J. Schott, K.A. Elliott (1990), "Economic Sanctions Reconsidered: History and Current Policy". Institute for International Economics, Vol. 1, 2nd ed., Washington D.C.
- Maestad, O. (1992), Trade Policy and the Environment. SNF-Report 33, Bergen 1992.
- Mattoo, A. and P.C. Mavroidis (n.y.), Trade, Environment and the WTO: How Real-is the Conflict, mimeo, probably 1995.
- Rauscher, M. (1996), International Trade, Factor Movements, and the Environment. Forthcoming, Oxford University Press.
- Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung (1994), Den Aufschwung sichern — Arbeitsplätze schaffen. Jahresgutachten 1994/95, Stuttgart 1994.

Siebert et al., (1980), *Trade and Environment. A Theoretical Enquiry*. Elsevier, Amsterdam 1980.

Siebert, H. (1995), *Economics of the Environment*. 4. ed., Berlin, Heidelberg 1995.

Sorsa, P. (1995), *Environmental Protectionism, North South Trade and the Uruguay Round*, IMF Working Paper 95/6, Washington, D.C.

Subramanian, A. (1992), *Trade Measures for Environment: A Nearly Empty Box?*. In: *The World Economy*, 15 (1), 1992, 135-152.