

Environment and Trade Series: No. 1

NAFTA Effects

**A Survey of Recent Attempts to Model
the Environmental Effects of Trade: An
Overview and Selected Sources**

**Commission for Environmental Cooperation
April 1996**

The Commission for Environmental Cooperation (CECs) established by Canada, Mexico and the United States in 1994 to address transboundary environmental concerns in North America. While the idea to create such a commission originated during the negotiations of the North American Free Trade Agreement (NAFTA), it derives its formal mandate from the North American Agreement for Environmental Cooperation (NAAEC). The NAAEC builds upon and complements the environmental provisions established in the NAFTA. It creates a North American framework whereby goals related to trade and the environment can be pursued in an open and cooperative way.

Environment and Trade Series

- No. 1 NAFTA Effects — A Survey of Recent Attempts to Model the Environmental Effects of Trade: An Overview and Selected Sources

- No. 2 NAFTA Effects — Potential NAFTA Environmental Effects: Claims and Arguments, 1991-1994

This publication was prepared for the Secretariat of the Commission for Environmental Cooperation (CEC) as a background paper. The views contained herein do not necessarily reflect the views of the CEC, or the governments of Canada, Mexico or the United States of America.

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Introduction and Acknowledgements

This report is one of a series of studies prepared by the Commission for Environmental Cooperation (CEC) as a contribution to the preliminary phase of the NAFTA Effects Project (P95.10). Over the long term and on an ongoing basis, the CEC's NAFTA Effects Project will establish a framework to assess the effects of the North American Free Trade Agreement (NAFTA) on the environments in the three NAFTA countries. It responds to the mandate given to the CEC in the North American Agreement on Environmental Cooperation ("The Agreement", Article X;6) that calls for the CEC to "cooperate with the NAFTA Free Trade Commission to achieve the environmental goals and objectives of the NAFTA by *(inter alia)*... (d) considering on an ongoing basis the environmental effects of the NAFTA".

This report reviews current theoretical understandings about the impact of trade, trade liberalization and trade agreements on the environment, and the state of knowledge about modelling the environmental effects of trade. Section I introduces the subject with a brief, analytic survey of the effects of trade and trade liberalization on the environment. Section II includes a review of existing empirical analyses and modelling efforts that examine the trade-environment relationship. Section III presents a critique of some of the current models and suggests areas in which further research is required to enhance existing modelling efforts and to enrich future efforts.

Annex A contains the results of a survey of organizations throughout North America. The survey was conducted to determine what other work is underway that might be important for this study, and to ensure that the CEC incorporates other relevant efforts and individuals into the design of the NAFTA Effects Project. The results of the survey indicate that while there is some important policy work being conducted on trade and environment in North America in general, there appears to be little empirical research on the trade and environment link and, specifically, on the effects of NAFTA on the environment. Among the apparent reasons for this dearth of research are the enormity of the task, its multidisciplinary nature, a fragmentation of expertise, and a lack of dedicated resources. Therefore, the CEC's mandate to assess the environmental effects of NAFTA, its capacity to channel resources to this task, and its ability to facilitate and encourage others to participate in the process is critical.

This report was prepared by Dan Esty as part of the research process for the project. The Annex was compiled with the assistance of Mary Vanderbilt, Tim Egan, Leòn Bendesky and Jane Barr.

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I. Trade Effects on the Environment: an Analytic Survey

Assessing the effects of trade, trade liberalization and trade agreements on the environment is a difficult task. The extraction of *trade-related* environmental impacts from all other pollution and public health effects under the dynamic circumstances in which trade occurs is especially challenging. Numerous methods of dissecting the environmental-trade relationship have been proposed.

For example, Ford Runge suggests that the impacts of trade integration on the environment can be determined by the complex interaction between static, spatial, and dynamic effects, as well as by the examination of the volume of trade, industrial structure, and technologies in use (Runge 1994). Others use simpler models, but there is no absolute answer to the question of whether trade helps or harms efforts at environmental protection. From a theoretical perspective, the expected environmental results will depend on the assumptions made about the kind of trade or trade liberalization to be analyzed. Any particular trade agreement may have both positive and negative environmental impacts in different sectors. Indeed, the sector-specific impacts of trade liberalization may be so significant that generalizations are impossible. However, certain theoretical environmental effects of trade have been identified and serve as a useful basis for an analysis of the environment-trade relationship.

1. The Environmental Effects of Trade

Any exchange of goods or services will have some environmental impact. The environmental effects of trade *per se* can be broken down into three basic categories: product effects, scale effects and structural effects.

a. Product Effects

The product effects of trade on the environment — what happens as trade in certain goods expands — can be both positive and negative. On the positive side, trade may permit the dissemination of environmentally-superior goods beyond their home markets. For example, the spread of low-pollution engines is a *positive* effect. On the negative side, trade can broaden the reach of environmentally-harmful products. The expanded use, for instance, of disposable “clamshell” packaging for fast food hamburgers represents a *negative* product effect.

b. Scale Effects

The greatest trade-related impact on the environment is what has come to be known as “scale effects” as producers increase their output to meet expanded demand from overseas markets. Again, scale effects may be either positive or negative. On the positive side, trade may permit production with greater scale economies, thereby generating greater profits. In this way, trade may lead to a greater accrual of wealth, some portion of which may be devoted to environmental investments. Moreover, scale economies in the production of the environmentally-sound goods may lower their price and expand their market. Trade also may act as a “magnifier”, however, exacerbating existing environmental problems. Indeed, many environmentalists fear that trade promotes unsound patterns of production and consumption — the same that exist in a world without trade. They fear, however, that in a world *with* trade, the amount of activity on an environmentally-unsustainable basis will increase. Proponents of this point of view think this will result in increased environmental degradation and the consumption of resources at an unsustainable pace.

c. Structural Effects

A third type of environmental effect that may arise from trade is referred to as a “structural” or “indirect” effect. The concern is that trade may shape the patterns and processes of production in ways that negatively affect environmental and resource uses. For example, trade may encourage “dirty” industries to locate their facilities in countries either with low environmental standards or lax enforcement of their standards. The resulting “pollution havens” make it harder for producers in high-standard countries to compete. This creates downward pressure or “political drag” on environmental standards everywhere.

2. Environmental Effects of Trade Liberalization

One problem with trade *liberalization* is that, to the extent that trade itself creates environmental problems, increased trade creates more problems. Any effort to promote trade liberalization will be viewed with suspicion by some environmentalists. Those who adhere to a “limits to growth” philosophy perceive any attempt to expand trade as likely to lead to further industrialization and thus to additional environmental problems. From this perspective, trade liberalization translates into economic growth that results in increased pollution, the consumption of non-renewable resources at increased speeds, and the unsustainable consumption of renewable resources.

Even environmentalists who do not adhere to a strict “no growth” point of view fear that trade liberalization, undertaken in the absence of a strategy to address the environmental effects of expanded trade, will lead to environmental degradation rather than sustainable development. They

argue for the incorporation of environmental policy commitments into trade liberalization efforts.

Free-trade advocates often take an opposite perspective. They see trade liberalization providing not only expanded access to environmental goods but also to more efficient (less resource-intensive) production. In addition, they argue that expanded trade generates wealth and financial resources, some of which will be spent on environmental protection. Moreover, they note that poverty is one of the greatest causes of environmental degradation. Therefore, to the extent that trade helps to alleviate poverty, it is also environmentally rewarding.

The issues can be divided into a number of categories. First, the product effects of trade liberalization may be positive if the expansion of trade leads to greater access by people in markets around the world to environmentally-friendly technologies and services. On the other hand, expanded trade may simply mean more circulation of environmentally-harmful products such as hazardous waste.

The scale effects of trade liberalization are also a source of concern to many environmentalists. Specifically, while freer trade may increase the amount of resources available for environmental investments, it may also encourage production under circumstances where environmental damage is left “uninternalized”. That is, the costs of environmental problems are not borne by those who create the problem. Again, the issue is the magnifier effect of trade. The activities in which they are engaged will be expanded inappropriately if environmental costs are not fully internalized in the prices that producers or consumers see and pay, creating environmental degradation.

Two sets of harmful effects deserve particular mention in this context. First, when the degradation in question is global in scale, it is very likely that currently there is no appropriate internalization of these environmental costs. This lack of internalization reflects the fact that there are few established rules regarding global emissions and very limited enforcement of them. Because of this, expanded trade creates an incentive for producers to make more globally-polluting goods. Producers recognize that they themselves do not pay the full costs for the environmental effects of their products. For example, to the extent that the ozone-layer-depleting chemicals are not controlled, those who produce goods using these chemicals will benefit from being able to “externalize” part of their cost of production to society at large. With freer trade, the opportunities for sales under these environmentally-damaging circumstances expand.

Second, to the extent that environmental degradation arises because some resources constitute a “commons” or a “public good”, trade will exacerbate overuse of common property resources. Due to the absence of collective action to control how much of the common resource an individual is allowed to consume, users of a commons or a public good

lack incentives to restrain their behaviour. With opportunities for export sales increasing their markets, producers using public goods often find they are able to increase profits in the context of freer trade, keeping their costs down by not paying for environmental controls in their production processes. Thus, the incentive to produce in a manner that externalizes environmental harms can be considerable and increases under the circumstances of trade liberalization.

Another set of “structural” or “indirect” environmental effects of trade liberalization should also be mentioned. In a positive sense, the elimination of trade- (and environment-) distorting public policies can be broadly beneficial. When trade liberalization eliminates subsidies, for example, both trade flows and environmental quality often improve. Thus, lower agricultural subsidies reduce the farmer’s incentive to farm marginal land, which often requires large doses of environmentally-harmful chemicals. On the other hand, the structural or indirect effects of freer trade may be negative. For example, opportunities for expanded exports may induce environmentally-damaging changes in land use. In many countries, the opportunities for export earnings has led to the increased production of commodity crops that often involves environmentally-harmful farming practices. An example of this is deforestation for the purposes of clearing the land or monoculture for commodity crop production.

The technological effects of trade liberalization may also be either environmentally helpful or harmful. When the expansion of trade brings cleaner technologies to countries that otherwise might not have access to them, the effects will be positive. In fact, one of the very significant potential environmental gains from trade is the encouragement it provides to multinational companies to set up environmentally-sound operations in developing countries. For many of these developing countries, access to the environmental technologies and management systems of multinational corporations is an enormous environmental boon. In some circumstances, however, trade may promote the dissemination of products that are made using outdated technologies or less environmentally-friendly (cheaper) technologies.

A final set of effects that deserve mention are the “regulatory” effects of trade liberalization. In some respects, this can be seen as a separate category of environmental effects of trade agreements *per se*.

Environmentalists often fear that the conclusion of a trade agreement will result in the downward “harmonization” of standards: they worry that harmonization of laws and regulations will result in the lowering of environmental standards to an average or, even worse, to a baseline level. Other environmentalists fear that a harmonization process will deprive local (state, or even national) communities of the right to make their own environmental regulatory decisions. Specifically, they see the “market access” obligations, which are generally part of trade agreements, as a mechanism by which trade goals trump environmental principles if these

two realms clash. This perceived loss of sovereignty is considered by some observers to be the central issue in the goal of trade liberalization with improved environmental protection.

Liberal traders argue that the commitments undertaken to open markets in the context of trade agreements need not be seen as environmentally harmful. They note that there would be no tension between freer trade and environmental protection if environmental regulatory strategies relied on an appropriate pricing of environmental harms. They argue that if the environmental community were to adopt the “polluter pays principle” and seek full implementation of “cost internalization”, there would be no negative environmental effect of freer trade. Those supporting free trade also note that some trade agreements limiting a nation’s freedom of choice in other realms can be positive. For example, as trade agreements move countries towards eliminating agricultural subsidies, behaviour that is damaging in both the trade and environmental contexts is discouraged.

One of the biggest concerns about trade and trade liberalization relates not to the economic effect of freer trade, but to its political impacts. Many environmentalists fear that movement toward freer trade will make it harder to adopt optimal environmental standards. Specifically, they note that internalizing environmental costs often raises prices and can competitively disadvantage industries if their competitors in the global marketplace are not similarly required to internalize the costs of the environmental harms they are causing. Thus, one of the most prominent concerns in the NAFTA debate centred on the fear that Mexico would become a “pollution haven” (French 1993).

Those supporting liberalized trade argue that fears about environmental degradation arising from freer trade are wrong. In addition, they suggest that if environmental regulation were cast in economic incentive terms there would be no tension between environmental protection and the economic growth brought about by trade liberalization. Furthermore, free-traders note a number of other reasons to be optimistic about the role of freer trade in protecting the environment. They suggest that because many environmental harms are caused by the short-term thinking that comes with poverty, the prospect of economic growth arising out of freer trade can be seen as an environmentally-positive development. Moreover, free traders and their economist allies often note that as the wealth of a society goes up, its commitment of resources to environmental protection generally increases as well (Grossman and Krueger 1994). Thus, to the extent that freer trade promotes economic growth, the efforts at trade liberalization will be environmentally positive.

How trade liberalization will effect particular sectors may, of course, be hard to forecast at a broad degree of generality. The Organization for Economic Cooperation and Development (OECD 1994) undertook a series of case studies looking at the environmental effects of freer trade in a range of sectors. The authors explored a variety of trade-environment

hypotheses. For example, in his study of the transport sector, Landis Gabel identifies five possible impacts from trade and trade liberalization in the transport sector:

1. direct impacts related to liberalization of the transport sector;
2. effects of trade liberalization in areas of particular significance to the transport sector, including the potential effects on energy supply and transport equipment;
3. increased use of transport as a result of the specialization of international production;
4. effects of increased growth rates on production and per capita incomes that may lead to more aggregate consumption and/or investment in the transport sector; and
5. the impact of trade liberalization on environmental standards, including pressure for harmonization of these standards and the surrender of control over their regulation to such international bodies as the World Trade Organization (WTO).

Gabel notes that expanded use of transport is likely to create air pollution since most cars, trains, ships and airplanes burn fossil fuels of one sort or another. In addition, Gabel observes that expanded transport may result in the following: increased emissions of greenhouse gases; the contamination of surface or ground water due to oil spills; the modification of hydrological systems as a result of the construction of roads, canals, or airports; the promotion of excavation and use of minerals such as gravel during road construction; and an increase in pollution (emissions) and the generation of wastes (e.g., old vehicles). Gabel concludes that environmental degradation may well be associated with any trade liberalization that expands the transport sector.

There is much greater optimism that expanded trade will be environmentally benign or even helpful in the agricultural sector. By reducing trade-distorting agricultural subsidies, governments discourage farmers from over-producing on marginal land — a process that usually requires environmentally-harmful, chemically-intensive production processes.

Similarly, trade agreements may be very helpful in the context of protecting fisheries. In the absence of a regime that coordinates behaviour for the benefit of all, individual countries and fishermen are likely to over-exploit common resources such as the oceans. Indeed, recent problems in managing the fisheries of Georges Bank and other areas of the North Atlantic demonstrate the potential benefit of a coordinated regime. Trade agreements may be able to provide a mechanism for addressing “the tragedy of the commons” in that many environmental problems may benefit from collective action through the trade liberalization process. Thus, one of the most promising areas for positive environmental effects from trade liberalization is in the context of “public goods” or resources

that lie in a “commons”. These resources are susceptible to over-exploitation in the absence of an agreement controlling their access and consumption, and trade agreements may provide the needed control mechanism.

II. Empirical Analysis and Modelling

Despite recognized limitations, empirical analysis of the environmental effects of trade and trade liberalization can be a valuable tool for policymakers. If potential environmental problems can be identified and quantified in the trade liberalization process, particular policy interventions to address these concerns can be devised. This section reviews the existing state of knowledge concerning the modelling of the trade-environment relationship.

Models are commonly grouped into a number of different categories: economic assessment models, environment assessment models, and combinations of the two, including specific trade-environment models.

To help understand and assess the environmental effects of trade liberalization, various methods of categorizing trade-related environmental effects have been developed. For example, the OECD's analytical work divides the environmental effects of freer trade into five categories: scale, structural, product, technology and regulatory effects.

With regard to the substantive results of the trade-environment link, Grossman and Krueger (1994) postulate an inverted U-shaped curve reflecting initially low pollution levels at low levels of economic activity, with higher levels of pollution at a mid-range of economic activity and again, lower levels of pollution in the wealthiest of countries. Although this work associates environmental conditions with economic growth instead of trade liberalization, expanded trade is widely recognized as being connected to economic growth. Similar empirical conclusions — positive correlation between trade liberalization and various measures of environmental quality — were reached by the OECD team of Beghin, Roland-Host, and van der Mensbrugge (OECD 1994).

As with all models, these studies must be viewed with some measure of caution. In particular, there is considerable methodological uncertainty surrounding efforts to isolate the impact of trade on the environment from other variables.

1. Economic Assessment Models

Macro-economic models can be used to assess economy-wide sectoral and national effects of trade liberalization. Using a combination of linked macro-economic models and applied general equilibrium (AGE) models, economists have tried to capture interactions resulting from economy-wide policy changes. These modelling exercises help to identify indirect effects of trade liberalization resulting from changes in income, savings and investment. AGE models can further simulate interactions between producers and consumers as well as resource competition between different sectors. All of this facilitates analysis of pollution and resource utilization under varying economic (or trade) scenarios.

An example of an AGE model is the Global Trade Analysis Project (GTAP), which allows for assessment of indirect environmental effects of freer trade at a sectoral level, e.g. agriculture, forestry, fishery products, mining, processed food and beverages, textiles, and wood products. It has also been noted that the value of GTAP and other AGE models may be limited because the product categories may be too broad and the limited geographic regions create gaps, especially with regard to developing countries (Vaughan *et al.*, 1995).

Another type of economic assessment model is the computable general equilibrium (CGE) model used by a number of analysts, including economists at the WTO. The CGE model used by the WTO Secretariat incorporates a 19-sector, 13-geographic region model of the world economy. This type of model uses an “input-output” structure to stimulate explicit linkages between industries from processed goods to finished products. Direct relationships between sectors can be modelled by examining the links between the sectors, or intermediate sectors can be included to examine indirect sectoral relationships. These analyses, however, depend on a number of economic assumptions and may be criticized to the extent that these assumptions (e.g., concerning how competition operates) do not mirror reality.

2. Environment Assessment Models

Environment assessment models, which identify correlations between economic variables and environmental effects, are now widely available. While most do not specifically incorporate trade liberalization, they often reflect broader environmental data sets that are lacking in the CGE and AGE models. In recent years, considerable progress has been made in obtaining accurate environmental data on which to base these models. However, it is still difficult to produce policy-relevant environmental assessments. This is because of remaining data gaps and the complexity that results from using data collected for one purpose in different settings. Indeed, many environment assessment models focus on specific environmental problems such as climate change, acid rain or species extinction. Therefore, trying to extract environmental information relevant to the trade context is problematic. Nevertheless, some of the most extensive environmental modelling work has been done in the context of climate change and other specific environmental issues linked to economic growth.

3. Combined Economic and Environmental Assessment Models

A number of analytic efforts are underway to try to link models addressing economic variables in general, and trade liberalization in particular, with environmental quality. For example, the World Bank's Policy Research Department Group has a major environmental modelling exercise under development. Led by David Wheeler, the work focusses on estimating thirteen effluents and how they are tied to growth in output. The model allows for separation of differential environmental effects due to changes in the composition of output. Unfortunately, given this model's structure, the only means of reducing emissions appears to be to reduce growth. Nevertheless, as a mechanism for understanding particular environmental consequences of economic development, this model has unmatched comprehensiveness and complexity.

The OECD has also done considerable trade-environment modelling. The OECD's work examines scale effects, composition impacts, and technology impacts in its development of its global dynamic AGE model entitled the GeneRal Equilibrium ENvironmental model (GREEN). The model analyzes international trade linkages associated with climate change abatement strategies and costs, and is intended to highlight the effects of carbon dioxide emission abatement policies on the allocation of resources among sectors, as well as the effects of energy policies on international trade. It is evident that this model actually focusses on the trade effects of environmental policies *not* on the environmental effects of trade liberalization. Nonetheless, its workings may be instructive in some respects.

The GREEN model consists of twelve sub-regional sub-models, eleven producer sectors (e.g. agriculture; coal mining; crude oil; natural gas; refined oil; electricity, gas, and water distribution; energy-intensive industries; and other industries and services), four consumer sectors (food, beverages, and tobacco; fuel and power; transport and

communication; and other goods and services), and up to fifteen primary factors (e.g., labour, capital). The model allows for the testing of various environmental policies, but it lacks a way to model abatement effects and is recognized to overemphasize the costs of pollution controls.

The OECD Development Center is conducting a separate modelling effort that focusses more narrowly on assessing the environmental effects of trade liberalization. Originally focussed on Mexico, it was expanded to include five other “case studies” (Costa Rica, Chile, China, Indonesia and Vietnam). The TEQUILA study — Trade and Environment eQUILibrium Analysis — involves a dynamic, multisectoral CGE built to assess how trade liberalization and induced changes in production processes affect the emission of a set of 13 pollutants. This model also allows for analysis of possible mitigation policies that might accompany trade liberalization.

In examining the NAFTA’s effects on Mexico, the TEQUILA project considers 94 sectors and concludes that trade liberalization will increase Mexican GDP by 3.2 percent and increase major pollutants by 2.5 to 4.8 percent. The other case studies are now moving forward with varying degrees of sectoral complexity: Costa Rica (40 sectors); Chile (90 sectors); China (64 sectors); Indonesia (72 sectors); and Vietnam (40 sectors). The OECD expects to publish results of these case studies in 1996.

This OECD effort suggests that in the absence of appropriate environmental policies, the scale effects of trade liberalization on the environment dominate the other effects and are likely to result in an increase in almost all pollutants in all major sectors. At the same time, there appears to be a positive correlation between trade liberalization and technology change towards cleaner production. Thus, with optimal environmental policies, good rates of economic growth can be obtained with declining pollution levels. The “mitigation” analysis is limited, however, in that it makes no attempt to incorporate the benefits of reduced pollution into the analysis.

Among the most noted studies linking national income gains in the trade context with environmental quality are those of Grossman and Krueger (1994), which analyze the impacts of the NAFTA. The first study employs a reduced-form regression model with inputs from three urban air pollution indicators, thereby linking changes in national income to air pollution levels. As previously mentioned, the general conclusions of the models show an inverted U-shaped relationship between environmental degradation and national income over time. Pollution intensity is generally higher in the early stages of industrialization and decreases as income levels rise.

Grossman and Krueger (1994) have recently developed a new study on “Economic Growth and the Environment” that corroborates the positive link between trade liberalization and environmental protection. In lending

further to their previously identified inverted U-shape relationship, Grossman and Krueger conclude that a downturn in environmental degradation occurs in almost every case after a country reaches a per capita income of \$8,000. Specifically, they note that “for a country with an income of \$10,000, the hypothesis that further growth will be associated with deterioration of environmental conditions can be rejected at the 5 percent level of significance for many of our pollution measures”. Grossman and Krueger do note, however, that there is “no basis for suggesting that this positive correlation is itself automatic”. Thus, the mechanism by which increased wealth translates into added environmental protection remains little understood. Unfortunately, Grossman and Krueger do not plan to do any further work to flesh out the relationship between trade liberalization and environmental protection. They concluded that severe data problems and the heroic nature of the assumptions that must be made to do this sort of modelling would render efforts unrewarding.

4. Other Current Modelling Work

Others working in the trade-environment modelling field include Scott Taylor and Brian Copeland at the University of British Columbia. In an article published in the *Quarterly Journal of Economics* in 1994, they develop a theoretical model of various aspects of the trade-environment relationship, including the effects of scale, composition, technology, and pollution resulting from freer trade. A second article, “Trade and Transboundary Pollution”, forthcoming in the *American Economic Review*, focusses on additional theoretical aspects of the trade liberalization-environment protection linkage, as well as on welfare issues.

Additional modelling work is being done by Michael Rauscher at the Kiel Institute and John Whalley at the University of Western Ontario. In July 1995, Warwick University held a three-week workshop on modelling with separate segments devoted to trade modelling and environment modelling — although little was done to address the link between these realms.

III. Model Critiques and Areas for Future Research

It is important to recognize the limitations of models and the results they can produce. Most critically, the lack of appropriate environmental data hampers all modelling efforts. Moreover, there is a great deal of uncertainty embedded within the assumptions made regarding the effects of trade liberalization on environmental quality. Many of these assumptions (e.g., the lack of an attempt to qualify the benefits of reduced pollution within the OECD modelling effort) fundamentally affect the policy conclusions that might be drawn from the analysis. How closely the models mirror reality remains, therefore, a serious question.

To begin to address these limitations, United Nations Environment Program (UNEP) convened a small, ad hoc, experts' meeting on environmental reviews and trade liberalization in March 1995 in New York City. At this session, it was recognized that more work is needed on modelling the trade-environment relationship. A variety of specific needs were identified including the following: environmental impact assessment and strategic impact assessment methods; macro-economic assumptions and modelling tools; and definitions of trade measures (e.g. quotas, prior informed consent, bans). The limited policy-applicability of current economic models was especially clear.

UNEP plans to hold two further meetings to improve the environmental assessment of trade policy. The first is meant to be a technical meeting at which the participants will seek to review and improve environmental assessment modelling. It was held in November 1995, and included experts in macro-economic, environmental and other modelling fields. The following types of models were evaluated: linked applied general equilibrium and partial equilibrium models; global trade policy analysis models; computable general equilibrium models; and selected environmental models (e.g. climate change models, OECD trade-environment models).

The second UNEP meeting will focus on how to improve public policy awareness and policy responses to environmental assessments. This meeting will draw on the conclusions and recommendations made at the technical meeting and will seek to include government representatives, industry officials, non-governmental organizations (NGOs), and research institutes. The second meeting will not attempt to provide a single, comprehensive environmental assessment of multilateral trade policy. Instead, it will help to identify follow-up options at the national levels, as well as conducting ongoing analysis and capacity building. UNEP plans to do this work in conjunction with a number of other international organizations, including the Commission on Sustainable Development, United Nations Convention Trade and Development (UNCTAD), United

Nations Industrial Development Organization (UNIDO), United Nations Development Program (UNDP), OECD, World Bank, Inter-American Bank, and the WTO.

Evidently, the issue of the environmental effects of trade liberalization is a very broad topic. To make sense of its enormity, some priorities must be identified for further study.

1. Data

There exists little reliable data that suggests strong empirical connections between trade liberalization and environment quality. Beyond the modelling exercises discussed above, there are very few empirical analyses that address, with any degree of rigour, the environmental effects of trade liberalization. The reliance on anecdotal evidence, rather than hard data, creates a gap for policymakers. A collaborative effort among institutions in the three NAFTA countries to monitor changes in the environment over time would be useful. Improved data gathering, better analytic foundations and assumptions, and more refined methodologies for testing the connections between environmental effects and trade liberalization are all areas that, if studied, will advance the current state of knowledge.

The development of a common set of “environmental indicators” with a clear methodology for relating these indicators to trade developments would also be highly useful. In some ways, the entire debate over “trade and the environment” can be reduced to the question of whether trade liberalization will lead to environmental quality improvements or to the deterioration of environmental conditions. While there are theoretical arguments on both sides, there is little empirical data available to settle it.

Special attention might be given to the sensitive border areas around which there has been much political controversy. For example, environmental indicators might be developed for the Rio Grande, the Great Lakes, and the St.-Lawrence Seaway. In addition, a number of representative border airsheds (e.g., El Paso-Ciudad Juarez, San Diego-Tijuana) might also be given particular attention.

The issue of environmental quality is one that extends beyond borders. Thus, a broader set of environmental indicators covering environmental conditions throughout the territory of Mexico, the United States and Canada should be developed. There is a great deal of work already underway on environmental indicators at a number of institutions. Indeed, the U.S. Environmental Protection Agency (EPA) as well as Environment Canada have both been working to develop environmental indicators as part of their ongoing work. Some collaboration with government entities undertaking this work as well as with private sector bodies would be useful. A databank of ten to twenty critical environmental quality indicators, with evidence of how those indicators have changed over time, would provide an invaluable service to those who care about understanding the environmental effects of trade and its liberalization.

2. Parallel Environmental Policy Reforms

Even the most ardent advocates of freer trade recognize that environmental policy reforms must be undertaken simultaneously with trade liberalization efforts if both realms are to see improvements in the course of expanded trade. Currently, Canada, the United States and Mexico have environmental regulatory structures that reflect some commitment to market mechanisms, but which also retain large realms of “command and control” regulation. To ensure that trade liberalization will improve environmental conditions, more effort must be put into guaranteeing that the environmental regulatory structure is connected to economic incentives. In this regard, an effort to develop strategies for market-mechanism-based environmental policy reform in the context of trade liberalization would be well-received.

3. Sectoral Analysis

Other areas that might usefully contribute to a better understanding of the environmental effects of trade liberalization are the critical resource sectors that are often pointed to as a source of concern. Case studies aimed at looking at how the NAFTA has affected these sectors would be particularly valuable. Multi-year studies might be undertaken of the environmental implications of trade liberalization in North America on the timber industry, fisheries, agriculture and energy sectors. Careful analysis of what has taken place in these industries regarding environmental impacts in the context of expanded North American trade would be a great step forward in understanding more broadly how trade affects environmental quality.

4. Coordinated Analyses with other Regional Agreements

Finally, coordination with other entities responsible for understanding the environmental effects of trade agreements is important. For example, there are individuals tracking the environmental effects of Asia Pacific Economic Cooperation Forum (APEC), Southern Cone Common Market (MERCOSUR), Association of Southeast Asian Nations (ASEAN), and the European Union (EU). Each of these regional efforts at trade liberalization faces similar challenges about whether the trade expansion promoted by their agreement has a positive or negative effect on the environment of the participating countries. Common studies across these different regional agreements might provide additional data that would illuminate the relationship between environmental effects and trade liberalization.

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- Organization for Economic Cooperation and Development. 1995. *New Dimensions of Market Access in a Globalizing World Economy*. Paris: OECD.
- Organization for Economic Cooperation and Development. 1995. *Report on Trade and Environment to the OECD Council at Ministerial Level*. OECD/GD(95)63. Paris: OECD.
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- United Nations Commission on Sustainable Development. 1995. General Discussion on Progress in Implementation of Agenda 21, Focusing on Cross-Sectoral Issues and the Critical Elements of Sustainability. Commission on Sustainable Development, Third Session, 11-28, (April.)
- United Nations Environment Programme. 1995. Report of UNEP Ad Hoc Experts Workshop on Environmental Assessments of Trade Policy. New York: UNEP (March.)
- Vaughn, Scott *et al.*, 1995. "Environmental Reviews and Trade Liberalization Discussion Paper". New York: UNEP.

Acronyms

AGE	Applied General Equilibrium Model
APEC	Asia Pacific Economic Cooperation Forum
ASEAN	Association of Southeast Asian Nations
BECC	Border Environment Cooperation Commission
CEC	Commission for Environmental Cooperation
CGE	computable general equilibrium
GREEN	General Equilibrium Environmental Model
GTAP	Global Trade Analysis Project
MERCOSUR	Southern Cone Common Market
NAAEC	North American Agreement on Environmental Cooperation
NAFTA	North American Free Trade Agreement
NGO	Non-governmental Organization
OECD	Organization for Economic Cooperation and Development
SAIS	School for Advanced International Studies
TEQUILA	OECD Trade and Environment Equilibrium Analysis
UNCTAD	United Nations Convention on Trade and Development
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
UNIDO	United Nations Industrial Development Organization
WTO	World Trade Organization

Annex — Activities in North America and Internationally: Selected Sources

This Annex includes a listing of those organizations with current projects relevant for the work to be undertaken at the CEC on the effects of NAFTA on the environment in North America. It does not necessarily include all of those organizations that were active on trade and environment issues prior to the NAFTA but which have since chosen to pursue other priorities.

A. General Findings

The American study received responses from public policy “think tanks”, the academic community, NGOs, several American government agencies, trade publications, and foundations. The study found that while a number of organizations continue to monitor the organizational and policy aspects of trade and trade agreements, there are currently relatively few attempts to monitor the physical effects of liberalized trade on the environment. With a few notable exceptions, existing projects tend to be both localized and specialized, such as an attempt to monitor SO₂ increases at specific U.S.-Mexico border crossings.

In the U.S., environmental organizations that previously worked on trade issues, but which have recently curtailed activity in this area, cite a lack of interest among foundations. Generally, they say that trade is not as high a priority for foundations as it was in 1993 and 1994. Representatives of larger foundations and of the Environmental Grantmakers Association refute this claim, asserting that there has been little net change in the amount of foundation funding for trade and environment issues, although the focus has changed somewhat away from policy analysis and lobbying and toward citizen participation efforts. In Canada, the major foundations do not rate trade and environment as a priority area for funding. A similar situation exists in the United States: with a few exceptions, once-active groups are now simply monitoring developments and not undertaking new research programs in these areas.

In Mexico there are a growing number of environmental NGOs, whose activities are very different depending on their geographical location. For example, those NGOs working in cities or states near or at the American border show a greater inclination, but not necessarily the capacity, to consider topics related to trade, especially trade in hazardous substances. The ongoing status of some NGOs is not clear, and of those contacted, few had programs on technical issues such as trade and the environment.

¹ The Instituto Nacional de Ecología published a *Directorio Verde* of NGOs (second edition, 1994) with dozens of entries for each of the states of the country.

Generally speaking, one explanation for the apparent lack of NGO attention to monitoring the environmental effects of trade agreements is that the task is too big for any single organization to embrace. The potential environmental implications of trade agreements in North America alone involve a spectrum of products, processes and policies affecting widely varying habitats and species in a variety of ecosystems. Many of the species involved are migratory and there are numerous transboundary ecosystems.

Moreover, it is difficult to discern which changes result from the trade agreement in question and which result from previous or concurrent governmental policies. For example, approximately six hundred new *maquiladoras*, in bond companies, opened on the U.S.-Mexico border in 1995 to take advantage of the devalued peso.² Indeed, some fingers may point to the NAFTA for intensifying the pressures that brought about the peso crisis. Empirical studies of the environmental impacts of trade policies are relatively few and tend to be localized and specialized. They represent neither the range of influencing factors nor the wealth of environmental resources affected. It can be reasonably argued that the scope of monitoring for this issue is too overwhelming for most organizations to approach single-handedly.

An exception is the fledgling attempt by Paul Faeth and Robert Repetto of the World Resources Institute to create econometric-style models to measure the effects of policy on specific environmental concerns. Although the WRI project is geared specifically toward the 1995 U.S. Farm Bill reauthorization, it will be based on pre-NAFTA and pre-Uruguay Round baselines. Its creators hope to be able to use the model to analyze other policies and legislation.

In Mexico, limited work is being done in the public universities on trade and environment, although research exists on environmental issues unrelated to trade. In 1994, the *Instituto Nacional de Ecología (INE)*, National Institute for Ecology, published a directory of academic programs on environmental areas in institutions of higher education, which confirms this finding.³ In Canada, there appears to be some interest among universities on issues of trade and environment. The Centre for Trade Policy and the Law at Carillon University, and some members of the Faculties of Law at the Universities of Toronto, Calgary and Victoria, however, appear to be the only university affiliates publishing on trade and environment.

² Daniel Seligman, "Comments on the Proposed Expansion of NAFTA to Chile before the Trade Policy Staff Committee of the United States Trade Representative". April 25, 1995.

B. Selected Sources

Note: Publications marked with ★ are available for loan in the Resource Centre at the CEC in Montreal and many of these are also housed at the CEC Office in Mexico City. Otherwise, publications can be obtained by contacting the respective organizations directly.

1. Canada***Canadian Centre for Policy Alternatives (CCPA)***

Address: 251 Laurier Avenue West, Suite 804
Ottawa, ON K1P 5J6

Contact: Bruce Campbell, Executive Director

Telephone: (613) 563-1341

Facsimile: (613) 233-1458

Current Projects: The CCPA was founded in 1980 to promote research on economic and social issues facing Canada. The Centre monitors current developments in the economy and studies important trends that affect Canadians. Membership is open to individuals and organizations. The CCPA conducts ongoing research on issues of trade and the environment, particularly through the efforts of its Executive Director.

Recent Publications:

Campbell, Bruce, "Moving in the Wrong Direction: The North American Free Trade Agreement and Environmental Sustainability", presentation to the Conference on Trade and Environment, Harvard University, Kennedy School, April 28-29, 1994. (Ottawa: Canadian Centre for Policy Alternatives.)

Canadian Environmental Law Association (CELA)

Address: 517 College Street, Suite 401
Toronto, ON M6G 4A2

Contact: Michelle Swenarchuk, Executive Director

Telephone: (416) 960-2284

Facsimile: (416) 960-9392

Current Projects: CELA focusses its research on the environmental impacts of regional and multilateral trading agreements from a trade and environmental law perspective. It has conducted and published research on the GATT, the NAFTA, the Canada-U.S. Free Trade Agreement, and the European Community (Single European Act).

Recent Publications:

Makuch, Zen and Scott Sinclair *The Environmental Implications of the NAFTA Environmental Side Agreement* (Toronto: CELA, 1993).★

NAFTA and the Great Lakes: A Preliminary Survey of Environmental Implications. (Toronto: CELA, 1993).★

The Environmental Implications of Trade Agreements, prepared for the Ontario Ministry of Environment and Energy. (Toronto: CELA, 1993.) ★

C.D. Howe Institute

Address: 125 Adelaide Street East
Toronto, ON M5C 1L7

Contact: Daniel Schwanen, Senior Policy Analyst

Telephone: (416) 865-1904

Facsimile: (416) 865-1866

Current Projects: The C.D. Howe Institute's goals are: to identify current and emerging social and economic policy issues; to analyze options for public and private sector responses; and to recommend, where appropriate, particular policy options that, in the Institute's view, best serve its research. The Institute is the Canadian sponsoring organization of the North American Committee, (previously the Canadian American Committee) a committee of private-sector professionals with direct involvement and experience in relations between the three countries. The committee sponsors research on policy issues affecting North America. Apart from this, the Institute does not have any current projects on trade and environment, but will do an overall reassessment during the summer of 1996 on trade goals.

Recent Publications:

Benidickson, Jamie et al., *Getting the Green Light: Environmental Regulation and Investment in Canada* (Toronto: C.D. Howe Institute, 1994.) ★

Lemco, Johnathan, and William B.P. Robson, (eds) *Ties Beyond Trade: Labour and Environmental Issues under the NAFTA* (Canadian American Committee, Toronto: C.D. Howe Institute, and Washington: National Planning Association, 1993.) ★

Rabe, Barry G., *Beyond NIMBY: Hazardous Waste Siting in Canada and the United States*. (Canadian American Committee, Toronto: C.D. Howe Institute, and Washington: National Planning Association, 1995.) ★

Watson, William G., "Environmental and Labor Standards in the NAFTA". (Toronto: C.D. Howe Institute Commentary No. 57, February 1994.)

Centre for Trade Policy and Law (CTPL)

Address: Social Sciences Research Building, Room 106
Carleton University
1125 Colonel By Drive
Ottawa, ON K1S 5B6
Contact: Michael Hart, Director
Telephone: (613) 788-6696
Facsimile: (613) 788-3981

Current Projects: As part of its research program on trade negotiations and international economic relations, the CTPL is examining the implications of international trade rules and trade negotiations for international environmental cooperation and sustainable development.

Recent Publications:

“Canada’s Environmental Choice Program and Its Impact on Developing Country Trade”, in *Ecolabelling and International Trade* (Geneva: UNCTAD, forthcoming 1996.)

Trade, Sustainable Development, and the Environment: A Bibliography, compiled by Maria Isolda P. Guevara. (Ottawa and Winnipeg: Centre for Trade Policy and Law, and the International Institute for Sustainable Development, 1995.★)

Smith, Murray, G. (ed.), “International Trade and Sustainable Development”, proceedings of a Conference held at the Ottawa Congress Centre, May 13-14, 1993. (Ottawa: Centre for Trade Policy and Law, 1995.)

“Agriculture in Canada and the Greening of Trade: Where Do We Stand? What’s Next?”, summary of Proceedings of a Symposium sponsored by Agriculture and Agri-Food Canada held in Ottawa, March 21, 1995. (Ottawa: Centre for Trade Policy and Law, 1995.)

Other Publications Prepared by CTPL:

Chaitoo, Ramesh and Murray G. Smith, “Canadian Business, NAFTA and the Environment: Challenges and Opportunities Within a North American Context,” report prepared for the Canadian Chamber of Commerce. (Ottawa: Canadian Chamber of Commerce, March 1994.)

“Trade, Competitiveness and the Environment” report prepared by the Centre for Trade Policy and Law and the Institute for Research on Public Policy for the Canadian Council of Ministers of the Environment. (Winnipeg: CCME, July 1993.)

“International Trade and Sustainable Development” background report prepared with David Runnalls of the Institute for Research on Public Policy (IRPP) and Nurul Islam of the International Food Policy Research Institute (IFPRI) for the International Institute for Sustainable Development (IISD) to help determine a research agenda for the Institute. This was the basis of the 1992 report of IISD entitled *Trade and Sustainable Development — A Survey of the Issues and A New Research Agenda*

Conference Board of Canada

Address: 255 Smyth Road
Ottawa, ON K1H 8M7
Contacts: Business and Environment Research Program
Brian Guthrie, Director
Al Howatson, Senior Research Associate
Telephone: (613) 526-3280
Facsimile: (613) 526-4857

Current Projects The Board is an independent, not-for-profit applied research institute, conducting research and networks in the areas of economics, business management and public policy. It is affiliated with the United States Conference Board based in New York. The Board publishes some 30 reports and conducts over 200 conferences, seminars and roundtables annually. The Business and Environment Research Program is one of several research centres within the Board. Since 1990, the Program has conducted research that aims to assist corporations in environmental management and practice, as well as to contribute to the formation of sound environment and economy public policy.

Recent Publications:

St-Pierre, Antoine, “Industrial Competitiveness, Trade and the Environment: A Look at Three Sectors of The Canadian Economy” Report 107-93. (Ottawa: The Conference Board of Canada, 1993.)

St-Pierre, Antoine, “Industrial Competitiveness, Trade and the Environment,” Report on Phase III. (Ottawa: The Conference Board of Canada, 1993.)

Krajewski, Stephen, “Industrial Competitiveness, Trade and the Environment,” Report on Phase II. (Ottawa: The Conference Board of Canada, 1992.) (Also available in French.)

St-Pierre, Antoine and Al Howatson, “Industrial Competitiveness, Trade and the Environment,” Report on Phase I. (Ottawa: The Conference Board of Canada, 1992.)

St-Pierre, Antoine, "The Impact of Environmental Measures on International Trade," Report 76-91-E. (Ottawa: The Conference Board of Canada, 1991.) (Also available in French, Report 76-91-F.)

Dalhousie University

Dalhousie Law School

Address: Dalhousie Law School
The Weldon Building
6061 University Avenue
Halifax, NS B3H 4H9

Contact: David VanderZwaag, Environmental Law Professor

Telephone: (902) 494-1045

Facsimile: (902) 494-1316

*Current Projects:*The university is pursuing an ongoing trade and environment agenda via its existing courses.

*Recent Publications:*Professor VanderZwaag is awaiting the imminent publication of his book *Canada and Marine Environmental Protection: Charting a Legal Course Towards Sustainable Development* (Kluwer Law International) in which marine and environment issues in the context of the NAFTA are addressed.

Contact: Moira McConnell
Business and Environment and ADR Professor

Telephone: (902) 494-1019

Facsimile: (902) 494-1316

E-mail: mlmconn@is.dal.ca.

*Current Projects:*Moira McConnell teaches a business and the environment course in the Fall semester and an ADR course in the winter at Dalhousie. She is currently also serving as Executive Director of the Law Reform Commission of Nova Scotia.

Recent Publications:

McConnell, Moira, "The Human Dimension of the Environment, International Law and the Environment" presentation to Summer Training Institute, Royal Society of Canada, New Brunswick, July 1994.

McConnell, Moira, "The New Protectionism and Environmental Barriers to International Trade Liberalization: Assessing the Bona Fides of Government Action," *Kansas Journal of Law and Policy*, Vol. 43, (1993). ★

Thompson, G., M.L. McConnell, and L. Heustis (co-editors and authors),
Environment, Law and Business in Canada (Canada Law Book
Company, 1993.) (Chapter 13 — International Trade and
Environmental Law.)

Dalhousie School of Business Administration

Address: Dalhousie School of Business Administration
6152 Coburg Road
Halifax, NS B3H 1Z5
Contact: Dr. Donald J. Patton, Professor
School of Business Administration
Telephone: (902) 494-1804
Facsimile: (902) 494-1483

Current Projects: Dr. Patton teaches a course on business and the environment and a course on international business, both of which touch on trade and environment. No specific projects are underway.

Fraser Institute

Address: 626 Bute Street
2nd. Floor
Vancouver, BC V6E 3M1
Contact: Dr. Michael A. Walker, Executive Director
Telephone: (604) 688-0221
Facsimile: (604) 688-8539

Current Projects The Fraser Institute is an independent think-tank whose objective is to redirect public attention to the role of competitive markets in providing for the wellbeing of Canadians. Major research was conducted in support of the NAFTA, and some efforts are now underway to expand free trade into South America.

Recent Publications:

Anderson, Terry L., (ed.) *NAFTA and the Environment* (The Fraser Institute: 1993.)

Anderson, Terry L., (ed.) *Continental Water Marketing* (The Fraser Institute: 1994.)

Greenpeace Canada

Address: 185 Spadina Avenue, 6th Floor
Toronto, ON M5T 2C6
Contact: Jeanne Moffat, Executive Director
Telephone: (416) 597-8408
Facsimile: (416) 597-8422

Current Projects: Greenpeace Canada is an environmental advocacy group that monitors issues of trade and environment on an ongoing basis.

Recent Publications:

“NAFTA and the North American Agreement on Environmental Cooperation (NAAEC): Sidestepping the Environment”. (Greenpeace, 1993.) ★

“The Impact of the North American Free Trade Agreement on the Environment”. (Greenpeace, 1993.) ★

McGill University

Address: Faculty of Law, McGill University
3674 Peel Street
Montreal, PQ H3A 1W9

Contact: Pierre Marc Johnson/Armand de Mestral
Telephone: (514) 398-6666 / (514) 398-6643 (direct)
Facsimile: (514) 398-3233

Current Projects: Pierre Marc Johnson conducts research at McGill University on the relationship between trade and the environment. As of the winter of 1996, he will teach a seminar on the CEC at the McGill Faculty of Law. In his capacity as Vice-Chair of the National Round Table on the Environment and the Economy (NRTEE, see separate entry) and the Chair of its Task Force on Foreign Policy and Sustainability, he has overseen a work program which focussed on trade and environment. Professor de Mestral continues to work in the field of trade and environment.

Recent Publications:

de Mestral, Armand, Paper on the CEC presented at a Conference at Lyons in December 1994.

de Mestral, Armand, and Jan Winter “Dispute Settlement under NAFTA and the EU Treaty,” *Journal of European Integration* Vol. 17, p. 235, 1994.

Johnson, P.M., “The UNCED Challenge: A View from the North” in J. Kirton and Sarah Richardson (eds) *Trade, Environment and Competitiveness*. (Ottawa: NRTEE, 1992.) ★

Johnson, P.M., “NAFTA and NACE: An Overview and a Canadian Political Perspective” in S. Richardson, (ed.) *Shaping Consensus: The North American Commission on the Environment and NAFTA* report of a workshop, April 7, 1993. (Ottawa: NRTEE and EESI, 1993.) ★

Johnson, P.M., and André Beaulieu, “Trade and the Environment: Some Lessons from NAFTA and the North American Agreement on Environmental Cooperation”, in NRTEE *Background Materials, The GATT, the World Trade Organization and the Environment: Opportunities for Sustainable Development* (Ottawa: NRTEE, March 1994).★

Johnson, P.M., “A Canadian Perspective on the Summit of the Americas”, in S. Richardson (ed.) *Advancing Sustainable Development at the Summit of the Americas* Volume I: Report of a Workshop, July 11, 1994. (Ottawa: NRTEE, National Audubon Society, National Wildlife Federation, August, 1994).★

Johnson, P.M., and André Beaulieu, “NAFTA’s Green Opportunities” *Journal of Environmental Law and Practice* Vol. 5, 1994.★

Johnson, P.M., and J. Kirton, “Sustainable Development and Canada at the G7 Summit”, in J. Kirton and S. Richardson, (eds.) *The Halifax Summit, Sustainable Development, and Institutional Reform*. (Ottawa: NRTEE, March 1995).★

Johnson, P.M., and André Beaulieu *NAFTA and the Environment: New Continental Law*. (Washington, DC: Island Press, forthcoming, 1996.)

National Round Table on the Environment and the Economy (NRTEE)

Address: 1 Nicholas Street, Suite 1500
Ottawa, ON K1N 7B7

Contact: Moira Forrest, Communications

Telephone: (613) 992-7189

Facsimile: (613) 992-7385

Current Projects: Established in 1988 as an advisory body to the Prime Minister, the National Round Table “has a special catalytic role to play in Canadian society in identifying, explaining and promoting the concept of sustainable development for all sectors and regions of the nation”. The NRTEE has had a Task Force on Trade and Sustainability for four years. In 1991, the NRTEE sponsored a conference on Trade, Environment and Competitiveness and published a book by the same name based on the conference results. In 1992 and 1993, the Task Force was actively involved in the creation of the Commission for Environmental Cooperation, and provided advice to the Prime Minister on the form and function of the Commission. In 1994, the Task Force focussed on the Americas, providing advice to the Prime Minister prior to the Miami Summit of the Americas in December 1994, which stressed the importance of incorporating environment and sustainable development

into any plans to create a broad free-trade zone in the Americas. The work plan for 1996 is being developed.

Recent Publications:

Kirton, John and Sarah Richardson (eds). *Trade, Environment, and Competitiveness*. (Ottawa: NRTEE, 1992.) (Available in English and French.) ★

Richardson, Sarah (ed.), “The North American Free Trade Agreement and the North American Commission on the Environment”, report of a workshop, December 7, 1992, Ottawa. (NRTEE, Ontario Round Table on Environment and Economy.) (Available in English and French.) ★

Richardson, Sarah (ed.); “Shaping Consensus: The North American Commission on the Environment and NAFTA”, report of a workshop, April 7, 1993, Washington, DC. (NRTEE, Environmental and Energy Study Institute.) (Available in English and French.) ★

Richardson, Sarah (ed.), “Advancing Sustainable Development at the Summit of the Americas”, Vol. 1, report of a workshop, June 11, 1994, Washington, DC. (NRTEE:1994.) (Available in English, French and Spanish.) ★

Richardson, Sarah, “Advancing Sustainable Development at the Summit of the Americas”, Volume III, Discussion Paper. (NRTEE, October, 1994.) (Available in English, French and Spanish.) ★

Kirton, John and Sarah Richardson (eds). *The Halifax Summit, Sustainable Development and International Institutional Reform*. (Ottawa NRTEE, March 1995.) (Available in English and French.) ★

International Institute for Sustainable Development (IISD)

Address: 161 Portage Avenue East, 6th Floor
Winnipeg, MB R3B 0Y4

Contact(s): David Runnalls, Director, Trade Program (Ottawa: 613-238-2296)

Aaron Cosbey, Program Officer, Trade Program
Nevin Shaw, executive Interchange Fellow, Trade

Program

Telephone: (204) 958-7700

Facsimile: (204) 958-7710

Current Projects: Established in 1990, the IISD is a private non-profit corporation supported by the governments of Canada and Manitoba. Its mandate is to promote sustainable development in decision-making within government, business and the daily lives of individuals. Its scope is international. The trade program of the IISD (one of four IISD programs)

was established in 1991 to encourage the integration of trade, environment and development policies worldwide in support of sustainable development. The principal focus of the Trade Program at the IISD is the GATT, although other activities are underway. The Trade Program also serves as the Secretariat for the Trade and Environment working group of the China Council for International Cooperation on Environment and Development, which seeks to integrate sustainable development into China's trade policy. The IISD is currently compiling an international bibliography on trade and environment in conjunction with the Centre for Trade Policy and Law (edited by Murray Smith and Isolda Guevara). Over the next year, it will also produce a summary of the status of sustainable development since the signing of the NAFTA, with particular consideration paid to the role of the Commission for Environmental Cooperation, as well as to the policy changes occurring as a result of the NAFTA. The IISD will also produce a series of papers that will apply the IISD's principles on Trade and Sustainable Development to the following agreements: Maastricht Treaty; the World Trade Organization; the Asia Pacific Economic Cooperation Forum; International Environmental Agreements; Southern Cone Common Market (MERCOSUR); and the NAFTA. A report will also be prepared on the progress of the WTO's Trade and Environment Committee to assess how that committee's work has advanced in the context of sustainable development.

Recent Publications:

Trade and Sustainable Development Principles (Winnipeg: IISD, 1994.)
(Also available in French and Spanish★)

GATT, the WTO and Sustainable Development: Positioning the Workplan on Trade and Environment (Winnipeg: IISD, 1994.)★

Cosbey, Aaron and Nevin Shaw, "Beyond the WTO: Finding Appropriate Homes for the Issues of Trade and Sustainable Development" prepared for the Trade and Environment Conference sponsored by the Pacific Basin Research Centre, at the Kennedy School of Government, Harvard, April 29-30, 1994★

Queen's University

Address: Queen's University, Faculty of Law
Union Street, McDonald Hall
Kingston, ON K7L 3N6

Contact: Christine Elwell, Adjunct Professor of Law
Telephone: (613) 545-2220 / or (416) 533-5177
Facsimile: (613) 545-6611

Current Projects: Starting in the winter term of 1996, Christine Elwell will teach a course on the NAFTA and its side agreements, designed to teach students how to bring a complaint forward under the side agreements. A course outline is still under preparation.

Recent Publications:

Elwell, Christine, “Sustainably Priced Trade in Forest Products and Their Ecological Services”, in CCIL (ed.) *An International Forest Convention: Canadian Perspectives and Recommendations* (Kluwer International Publications: forthcoming.)

Elwell, Christine, “The Use of the Trade System to Deliver Environmental Objectives”, in *International Trade and Sustainable Development*. (Centre for Trade Policy and Law, January 1992.)

University of Calgary

Faculty of Law

Address: University of Calgary, Faculty of Law
2500 University Drive, NW
Calgary, AB T2N 1N4

Contact: Al Lucas, Professor
Telephone: (403) 220-7115 / (403) 220-7111 (direct)
Facsimile: (403) 282-8325

Current Projects: Al Lucas coordinated a symposium (and submitted the paper cited below) on trade and natural resources issues. He is working on a seminar with an academic advisory group of the International Bar Association (IBA) section on energy and trade law. Lucas heads the group, which includes academics from 15 countries. The IBA has a major biennial conference in Prague in April '96. Lucas' group is planning a project to study energy regulation in a post-privatization environment. As preparation, a session will be held in Portland, Maine in October where papers will be presented. One idea is to develop comparable papers looking at North America and Eastern Europe.

Recent Publications:

Lucas, Al, “Natural Resources Trade under NAFTA: The Interface with International Environmental Treaties” *Journal of Energy and Natural Resources Law*, Vol. 12, No. 1, at p. 175.

Contact: Irene McConnell, Sessional Lecturer
Telephone: (403) 220-7115
Facsimile: (403) 282-8325

Current Projects: Irene McConnell is working on her doctoral thesis at the University of Toronto. Its subject is “Trade and the Environment”, dealing specifically with the positive and negative effects of trade on the environment and how to make the GATT more environmentally friendly. Her work is being supervised by Robert Howse and Michael Trebilcock. Meanwhile, she is a sessional lecturer at Calgary on trade law.

Recent Publications:

McConnell, Irene and Catherine Redgwell, “Balancing Trade and Environment: The EC and NAFTA” *Environmental Liability* Vol. 2, No. 4, at p. 97, 1994. (British journal).★

McConnell, Irene, “NAFTA: Trading Natural Resource Gods and Protecting the Environment” *Journal of Energy and Natural Resources Law*, Vol. 12, No. 1, at p. 151.★

Canadian Institute of Resources Law

Address: University of Calgary, Faculty of Law
Room 3330, PF-B
2500 University Drive, NW
Calgary, AB T2N 1N4

Contact: Owen Saunders, Professor and Executive Director

Telephone: (403)220-3975 / (403)220-3200 (general)

Facsimile: (403) 282-6182

Current Projects: The Canadian Institute for Resources Law was incorporated in 1979. It undertakes and promotes research, education and publication on the law relating to Canada’s renewable and non-renewable natural resources, and conducts ongoing research on forestry, environmental law, water, petroleum, international trade law and mining. Professor Saunders also teaches at the law school. There is no trade and environment program, but ongoing research is being done in both areas.

Recent Publications:

Saunders, Owen, “Trade Agreements and Environmental Sovereignty: Case Studies from Canada,” paper prepared for the Environmental Law Section of the California State Bar in January submitted for publication in the *Santa Clara Law Review* ★

Saunders, Owen, “NAFTA and the North American Agreement on Environmental Cooperation: A New Model for International Collaboration on Trade and the Environment” *Colorado Journal of International Environment, Law and Policy* Vol. 5, No. 2, Summer 1994. ★

Saunders, Owen, “International Trade and Environmental Management”, in S. Kennett (ed.) *Law and Process in Environmental Management*. (1993.)

Saunders, Owen, “Trade and Environment: The Fine Line Between Environmental Protection and Environmental Protectionism” *International Journal*, Vol. 17, No. 4, 1992.

Saunders, Owen, “Legal Aspects of Trade and Sustainable Development,” in J. Owen Saunders (ed.) *The Legal Challenge of Sustainable Development*, (1990.)

University of Saskatchewan

Address: University of Saskatchewan, College of Law
15 Campus Drive, Room 207
Saskatoon, SK S7N 5A6

Contact: Don Buckingham, Associate Professor

Telephone: (306) 966-5892

Facsimile: (306) 966-5900

E-mail: buckingham@abyss.usask.ca

Recent Publications:

Buckingham, Don and Nathalie Chalifour, “Counting our Chickens Before They Hatch: New Hope or No Hope for Discipline in International Agricultural Trade” in *The Canadian Yearbook of International Law*, 111-41, 1994. ★

Buckingham, Don *The Ooze: The Progressive Drive for Environmental Provisions in International Trade Agreements*, under preparation. ★

Buckingham, Don, “How the Rules of NAFTA and NAAEC Impact Agriculture — Biotechnological and Other Standards” under preparation.

Centre for Studies in Agriculture, Law and the Environment (CSALE)

Address: University of Saskatchewan
College of Agriculture
51 Campus Drive
Saskatoon, SK S7N 5A8

Contact: Hartley Furtan, Director

Telephone: (306) 966-8893

Facsimile: (306) 966-8894

Current Projects: CSALE is undertaking a three-year project to enquire into how the NAFTA’s new trading rules impact agriculture, to study the impacts of the new agricultural methods on the environment and on health and food safety in the three countries, and to examine the economic and environmental fallout of freer trade in agricultural products — among other things. The project is designed in three phases. The first phase will provide a snapshot of the regulatory framework for agriculture as it exists in each of the three NAFTA parties after the coming into force of the World Trade Organization Agreement. In a second phase, project researchers will analyze the rules of the NAFTA and the NAAEC from three distinct disciplines: law, economics and environmental studies. In a

final phase, researchers from the three branches of enquiry will share their findings and propose an integrated approach as to what the NAFTA might actually entail in terms of a balance between economics and the environment and the kind of regulation necessary to strike that balance in the years to come.

University of Toronto

Faculty of Law

Address: University of Toronto, Faculty of Law
78 Queen's Park Crescent
Toronto, ON M5S 2C5

Contacts: Michael Trebilcock, Professor, (416) 978-5843
Robert Howse, Professor, (416) 978-4201

Facsimile: (416) 978-7899

*Current Projects:*Ongoing research on trade and environment.

Recent Publications:

Howse, Robert and Michael Trebilcock, (eds)*The Regulation of International Trade* (Routledge, 1995). This is the first treatise on trade law with a chapter (Chapter XIII) on trade and environment.

Howse, Robert and Michael Trebilcock, "The Fair Trade-Free Trade Debate: Trade, Labour and the Environment" working paper. (Canadian Law and Economics Association, 1995)

Contact: Sandra Walker, Lawyer, Sessional Lecturer
Telephone: (416) 978-3725 / (416) 863-3031 (direct)
Facsimile: (416) 863-4258

*Current Projects:*Sandra Walker teaches a course on European Community Law that addresses the question of how the European Court of Justice attempts to balance the objectives of free trade and environmental protection.

Recent Publications:

Walker, Sandra,*Environmental Protection versus Trade Liberalization: Finding the Balance*(Brussels: Publications des Facultés universitaires Saint-Louis, 1993). This book discusses the legality of environmental regulation under international trade law regimes, including the GATT, European Community Law and the Canada-U.S. Free Trade Agreement.

University of Victoria

Address: University of Victoria, Faculty of Law
Post Office Box 2400
Vancouver, BC V8W 3H7

Contact: Ted L. McDorman, Associate Professor
Telephone: (604) 721-8181 (direct) / (604) 721-8150
Facsimile: (604) 477-7413

Current Projects: Ted McDorman has written extensively on the topic in the past. His interest focussed primarily on the fisheries issue and free trade, and the tuna-dolphin issue. Currently, he is monitoring the literature.

Recent Publications:

McDorman, Ted, “The 1991 U.S.-Mexico GATT Panel Report on Tuna and Dolphins: Implications for Trade and Environment Conflicts” *North Carolina Journal of International Law and Commercial Regulation*, Vol. 17, pp. 461-488, 1992.

McDorman, Ted, “The GATT Consistency of U.S. Fish Import Embargoes to Stop Driftnet Fishing and Save Whales, Dolphins and Turtles”, *George Washington Journal of International Law and Economics*, Vol. 24, pp. 477-525, 1991.★

McDorman, Ted, “International Trade Law Meets International Fisheries Law: The Canada-U.S. Salmon and Herring Dispute” *Journal of International Arbitration* Vol. 7, No. 4. pp. 107-121, 1990.

McDorman, Ted, “Protecting International Marine Living Resources with Trade Embargoes: GATT and International Reaction to U.S. Practices”, in Georg Blichfeldt, (ed.) *Additional Essays on Whales and Man*. (Reine i Lofoten, Norway: High North Alliance, in press.)

McDorman, Ted, “The Canada-United States Free Trade Agreement and the Canadian Fishing Industry” in David VanderZwaag, (ed.) *Canadian Ocean Law and Policy* pp. 433-459. (Toronto: Butterworths, 1992.)

McDorman, Ted, “Canada and the North Pacific Ocean: Recent Issues” *Ocean Development and International Law Journal* Vol. 22, pp. 365-379, 1991.

McDorman, Ted, “Dissecting Free Trade Agreement Lobster Panel Decision”, *Canadian Business Law Journal* Vol. 18, pp. 445-458, 1991. ★

McDorman, Ted, “Using the Dispute Settlement Regime of the Free Trade Agreement: The West Coast Salmon and Herring Problem” *Canada-U.S. Business Law Review*, Vol. 4, pp. 177-189, 1990.★

McDorman, Ted, “Trade and Environment and the Principle of National Treatment”, in *Pacific Currents: Charting Developments in the Americas and the Far East* (American Bar Association, Section on International Law and Practice, Seattle Conference, pp. 149-170, October 1991.)

McDorman, Ted, “The Impact of International Trade Ideology on Fishing and Shipping”, paper presented in December 1994, Bangkok, SEAPOL Tri-Regional Conference on Current Issues in Ocean Law, Policy and Management: Southeast Asia, North Pacific and Southwest Pacific.

University of Western Ontario

Westminster Institute for Ethics and Human Values

Address: 361 Windermere Road
London, ON N6G 2K3

Contact: Ted Schrecker, Associate Director for Environmental Ethics

Telephone: (519) 673-0046

Facsimile: (519) 673-5016

Current Projects: The Westminster Institute, founded in 1979, is a private non-profit corporation that addresses practical ethical issues in the areas of health care, the environment and law. It engages in research and provides consultation and education to its partners and the community. In 1991, the Institute was restructured as a partnership among Westminster College, The University of Western Ontario, St. Joseph’s Health Centre and Victoria Hospital Corporation, all located in London.

Professor Schrecker heads a research network devoted to Sustainable Development, Growth and Distributive Justice, funded by the Social Sciences and Humanities Research Council of Canada until mid-1996.

Recent Publications:

Conference two years ago of “*Growth, Trade and Environmental Values.*” ★

Conference entitled, “*Surviving Globalization: Economic, Social and Environmental Dimensions*” May 25-27, 1995.

University of Windsor

Address: University of Windsor, Faculty of Law
Canadian-American Research Centre (CARC)
401 Sunset Avenue
Windsor, ON N9B 3P4
Contact: Maureen Irish, Law Professor (International Trade)
Telephone: (519) 253-4232 / ext. 2950
Facsimile: (519) 973-7064
E-mail: mirish@uwindsor.ca

*Current Projects:*CARC is a research centre at the law school at the University of Windsor that encourages research and teaching in the area of cross-border U.S.-Canada relations. It is conducting ongoing research on issues of trade and environment, maintaining a liaison with the Great Lakes Institute of the University of Windsor on regional environmental issues. Professor Irish works in conjunction with Professors Marsha Valiante (Environmental Law, ext. 2963) and Myra Tawfik (Intellectual Property Law, ext. 2957). A CARC conference on “NAFTA: Trade, Environment and Access”, planned for 1995 to 1996, was postponed due to administrative funding cuts at the University. Plans are underway to reschedule the project, which is to address the relationship between the Commission for Environmental Cooperation and other institutions on both the Canada-United States border and the U.S.-Mexico border. In November 1995, CARC hosted a panel on “Trade and the Environment: NAFTA and the International Joint Commission”, with two speakers — Ms. Sarah Richardson, Program Manager, NAFTA/Environment, Commission for Environmental Cooperation and Mr. Paul Muldoon, Counsel, Canadian Environmental Law Association.

World Wildlife Fund (WWF), Canada

Address: Suite 504, 90 Eglinton Avenue East
Toronto, ON M4P 2Z7
Contact(s): Julia Langer, Director, Wildlife Toxicology Program
Sarah Ives, Toxicology Assistant
Telephone: (416) 489-8800
Facsimile: (416) 489-3611

*Current Projects:*The WWF focusses on the protection of endangered species around the globe. Beyond monitoring, there has been no activity on trade and environment in Canada since 1992.

Recent Publications:(WWF International)

“International Trade, GATT, and the Environment: WWF International Position Paper, May 1992”. (Gland, Switzerland: World Wide Fund for Nature, 1992).★

York University

Faculty of Environmental Studies

Address: York University, Faculty of Environmental Studies
Lumbers Building, York University, 4700 Keele,
North York, ON M3J 1P3

Contact: Ellie Perkins, Assistant Professor

Telephone: (416) 736-5252

Facsimile: (416) 736-5679

Current Projects: Ongoing academic research on trade and environment.

Recent Publications:

Perkins, Ellie, "Trade Disputes and Environmental Regulatory Chill: The Case of Ontario's Environmental Levy" *The Journal of World Competition*, Vol. 18, No. 2. (December 1994)★

2. Mexico

Camara Nacional de la Industria de Transformacion (CANACINTRA)

Address: Av. San Antonio 256
Col. Ampliacion Napoles
México D.F. 03849
Contact: Ing. Gerardo Olvera, Director of Ecology
Telephone: (525) 615-0111
Facsimile: (525) 611-3269

Current Projects: The Director of Ecology works with the National Association of Standardization and in conjunction with the National Sanitation Foundation (NSF) in the U.S. and the Canadian Standards Association. They have a group dealing with private sector disputes on environmental standards and trade. They will also take part in meetings to be organized by *Secretaría de Comercio y Fomento Industrial (SECOFI)*, Secretariat of Commerce and Industrial Development, between the private sector and government concerning the issues of ecology and trade.

Centro de Calidad Ambiental, Centre for Environmental Quality

Address: Instituto Tecnológico y de Estudios Superiores de Monterrey, ITESM
Ave. Eugenio Garza Sada 2501 sur
64849 Monterrey, Nuevo León
Contact: Dr. Alberto Bustani, Director del Centro
Dr. Enrique Voguel, Coordinador General del
Centro de Estudios Ambientales Urbanos
Telephone: (8)328 4141 / 328 4032 / (8)358-2000 ext 5210
Facsimile: (8)359 6280

Current Projects The Centre is studying environmental normativity in Mexico and air quality in the city of Monterrey. It is also conducting a binational project financed by the World Bank.

Centro Mexicano de Derecho Ambiental (CEMDA)

Address: Atlixco 138
Col. Condesa
México 06140 D.F.
Contact: Mr. Gustavo Alanis, Director General
Telephone: (525) 211-2457 / 286-3323
Facsimile: (525) 211-2593
E-mail: cemda@laneta.apc.org

Current Projects: On October 13 to 14, 1994, CEMDA organized Mexico's first Conference on Trade and the Environment, with

participants from Canada, U.S., Chile, Argentina and Mexico. There are plans for a second conference pending the availability of funds. CEMDA is also involved in the publication of a book on trade and the environment with the *Instituto Nacional de Ecología* and the Center for International Environmental Law in Washington, DC, which will be available in the fall of 1995. CEMDA is also preparing booklets for the public explaining both the environmental aspects of the NAFTA and the environmental issues under consideration at the OECD and the WTO. These will be available by the end of 1995. CEMDA has a library on topics on trade and the environment for use by researchers as well as a database on environmental legislation, currently being developed for the CEC.

Recent Publications:

Comercio y Medio Ambiente: Derecho, economía y política (Mexico: Instituto Nacional de Ecología, Centro Mexicano de Derecho Ambiental, A.C., Centre for International Environmental Law, 1995.)

***Confederacion de Camaras Industriales de los E.U.M.
(CONCAMIN)***

Address: Manuel Ma. Contreras 133 — 1 piso
Col. Cuauhtemoc
México D.F. 06500

Contact: Dr. Francisco España, Gerente de Capacitación e información en la Dirección de Ecología, Salud y Seguridad de la CONCAMIN

Telephone: (525) 592-0092 / 566-6851

Facsimile: (525) 535-6871

Current Projects: The Ecology Directorate has developed a database on suppliers, including consulting on environmental issues for the associated industrial chambers. It studies the needs for, and sources of, environmental training.

***Consejo Empresarial de Comercio Exterior (COECE)—
Environmental Commission***

Address: Asociación Nacional de la Industria Quimica
Providencia 1118
Col. del Valle
México D.F. 03100

Contact: Ing. Miguel Benedetto, Director de Medio Ambiente
Telephone: (525) 559-2208 / 559-7833
Facsimile: (525) 559-5589

Current Projects: Most of the business sector's work concerning the issues of trade and the environment is concentrated around COECE, a group of businessmen and organizations that have actively participated in the negotiations and implementation of the NAFTA that have direct contact with the CEC. COECE has prepared working papers on topics such as the Mexican position on trade and the environment, production methods, eco-labelling, and green dumping. Some of its members have created the National Council on Environmental Research.

El Colegio de la Frontera Norte (COLEF)

Address: Abelardo Rodriguez 2925
Zona del Río, Tijuana B.C. 22230

Contact: Dr. Alfredo Hualde
Telephone: (661) 33 535
Facsimile: (661) 33 065

Current Projects: Dr. Roberto Sánchez has published some of his research on Trade and the Environment in English and Spanish. COLEF also carried out a broad research project on the potential implications of the NAFTA on the U.S.-Mexico border. The project was directed by Dr. Eduardo Zepeda and included a chapter on Environmental Issues by Dr. Roberto Sanchez. COLEF's Department on Urban and Environmental Studies has years of experience on environmental issues at the U.S.-Mexico border. In addition, Mtro. Alfonso Mercado is currently involved in a project on Industry and the Environment.

El Colegio de México

Address: Camino al Ajusco #20, col. Pedregal de Santa Teresa
México 01000 D.F.
Contact: Dr. Boris Graizbord (Assistant: Mr. Justo Casillas)
Telephone: (525) 645-5955 Ext. 4216 or 4223
Facsimile: (525) 645-0464
E-mail: graizbord@lead.colmex.mx

Current Projects: El Colegio de México offers the Programa de Estudios Avanzados en Desarrollo Sustentable y Medio Ambiente. This is an academic program that offers training for five weeks per year for two years to people of several areas working on issues concerning the environment. El Colegio de México operates the Mexican chapter of the Leadership for Environment and Development (LEAD).

Greenpeace-México

Address: Av. Cuauhtémoc 946
col. Vértiz Narvarte
México D.F. 03020
Contact: Rafael González
Telephone: (525) 523-2314 / 536-4173
Facsimile: (525) 536-4167

Current Projects: Greenpeace México is undertaking a project on trade in dangerous industrial residues and the prohibition of the importation of dangerous residues.

Grupo de los Cien

Address: Sierra Jiutepec 155 b
Col. Lomas de Barrilaco
Delegación Miguel Hidalgo
11000 México D.F.
Contact: Juan Carlos Cantú
Tel: (525) 540-7379
Fax: (525) 520-3577

Current Projects: Current projects related to trade and environment include trade in animals (parrots, reptiles, marine turtles), trade in marine turtle products, and a campaign to stop the saline works in the Laguna de San Ignacio, Baja California.

Instituto Leadership for Environment and Development (LEAD)

Address: Callejón del Aguacate 92-b,
Coyoacán, México, D.F.
Contact: Dr. Fernando Tudela, Director
Telephone: (525) 554-1609
Facsimile: (525) 554-0606

Current Projects: The institute organizes several activities in the area of the environment with partial financing from the Rockefeller Foundation. LEAD held a conference on trade and sustainable development September 20-30, 1995 in Thailand.

Instituto Tecnológico Autónomo de México Monterrey

Centro Jurídico de Comercio Interamericano (Centro JURICI)
División de Administración y Ciencia Sociales
Address: Instituto Tecnológico y de Estudios Superiores de
Monterrey, (ITESM)
Ave. Eugenio Garza Sada 2501 sur
64849 Monterrey, Nuevo León, México
Contact: Dr. Ismael Aguilar, Dr. Craig Raymond Giesze
Telephone: (83) 52 8000 (8) 358-2000 ext 4394, 4395 y 4397
(83) 52 8244
Facsimile: 352-8000 ext 4398

Current Projects: *Manejo del Agua en el Río Bravo* deals with increased demands upon natural resources deriving from the NAFTA, conducted with the support of the United States Environmental Protection Agency and the National Science Foundation.

Red Mexicana de Acción Frente al Libre Comercio (RMALC)

Most of the organized and specific work on the relations between trade and the environment is done by this network, composed of over 40 NGOs and about 70 social organizations (unions, co-operatives and diverse social groups).

Contact: C. P. Bertha Lujan, Miembro de la coordinación Nacional

Frente Autentico del Trabajo (FAT)
Godard no. 20
Col. Guadalupe Victoria
México D.F. 07790

Telephone: (525) 556-9375 / 9314 / 0642

Facsimile: (525) 556-9316

Environment Division

Contact: Dr. Alejandro Villamar, Hilda Salazar

Status: The main task of the Environment Division is the observation of the functioning of the NAFTA in Mexico and the development of proposals for the creation of a national council on environmental policies. It is the Advisor to the Commission of Fisheries of the Chamber of Deputies. The Mexican Congress is working on a General Law on Environmental Equilibrium.

Current Projects: The RMALC has established a critical position concerning the NAFTA and has produced documents exposing them, including those dealing with the environment. ~~TRMALC~~ RMALC has an Environmental Commission.

Recent Publications:

Mesa de Medio Ambiente: Propusta de Trabajo.

Propuesta de Participacion Ciudadana y Organizaciones no Gubernamentales en el Acuerdo de Cooperacion Ambiental de America del Norte.

Villamar, Dr. Alejandro and Alejandro Quiro *El Medio Ambiente y el TLCAN.*

México en los Primeros Meses del TLCAN Resumen del Informe Preliminar 1994. Una Iniciativa Justa y Sustentable de Intercambio y Desarrollo para Norte America.

Dr. Alberto Szekely

Address: Prolongación de Angelina #10
Col. Guadalupe Inn
C.P. 01020
México, D.F.
Telephone: (525) 662-4581
Facsimile: (525) 661-0166

Current Projects Dr. Szekely has written widely and advised on the topic of trade and the environment.

Recent Publications:

Szekely, Alberto, "Proposed Basic Principles of Regional Environmental Cooperation in North America". (North American Conference on Environmental Law, Ottawa, October 14-15 1993)

Szekely, Alberto *International Environmental Law in North America: Beyond NAFTA.*

Szekely, Alberto *Innovative Solution to North American Environmental Problems: the Mexico — United States Contribution.*

Union de Grupos Ambientalistas

Address: Callejón de San Miguel 46
Barrio de San Lucas, Coyoacán
04030 México D.F.
Contact: Regina Barba
Tel: (525) 532-2717
Fax: (525) 532-5639
E-mail: ugam@laneta.apc.org

Current Projects: This NGO deals with environmental issues such as the development of the salt works in Baja California and of the intercoastal channel in Tamaulipas. It is interested in dealing with controversies arising from the relations of trade and the environment, pending resources to finance this activity.

Universidad de Guadalajara

Address: Periférico Norte y av. Parres Arias # 799
Edificio B, 1er piso
Col. Núcleo los Belenes
Zapopan, Jal. 45101
Contact: Dr. Jesús Arroyo Alejandro
Rector of the Centro Universitario de Ciencias
Económico-Administrativas.
Telephone: (66) 56-5141
Facsimile: (66) 56-1917
E-mail: jesusarr@cea.udg.mx

Current Projects: One of the university's projects related to the environment deals with the regional impact of trade liberalization (funded by the Hewlett Foundation). It also deals with environmental risks in the metropolitan area. This project is headed by Prof. Antonio Sánchez, Director of the Institute of Regional Economic Studies. The following research projects are also being undertaken at the Institute:

Prof. Mariá Luisa García: *Apertura Económica y la Nueva Geografía de la Contaminación en Jalisco*

Prof. Basilio Verduzco: *Activismo Transnacional y Conflictos Ambientales en la Frontera México-Estados Unidos*

Dr. Jesús Arroyo: *Desarrollo Urbano Industrial y Riesgos Ecológicos en la Zona Metropolitana de Guadalajara*

Recent Publications:

Luis Velázquez and Salvador Carrillo: *La política económica externa y los impactos en el desarrollo urbano y la ecología de Jalisco* (J. Arroyo and D. Lorey (eds) *Impactos Regionales de la Apertura Comercial: Perspectivas del TLC en Jalisco* (Univ. de Guadalajara-UCLA program on México, 1995.)

Mariá Luisa García y Juan Rodríguez: *Desarrollo urbano industrial y medio ambiente en Guadalajara*. *Carta Económica Regional* No. 37. (Institute of Economic and Regional Studies, Univ. de Guadalajara, July-August 1994.)

J. Arroyo et al., "Crecimiento Poblacional y Económico, Uso Industrial del Suelo y Riesgo Ecológico en la Zona Metropolitana de Guadalajara". *Revista Latinoamericana de Planificación* (July-September 1995.)

Universidad Nacional Autónoma de México

Address: Coordinación de la Investigación Científica
Circuito Exterior,
Ciudad Universitaria, México 04510 D.F.
Contact(s): Dr. Simón González, Coordinator, *Programa
Universitario del Medio Ambiente*
Ing. Enrique Pérez, Director of Information
Dr. Guadalupe Ponciano, Environmental Health
Telephone: (525) 622-4168
Fax: (525) 550-8834
E-mail: puma@redvax1.dgsca.unam.mx

Current projects: The activities concerning studies on the environment are organized in the *programa universitario del medio ambiente* (university program on the environment).

The program published the second inventory on work on the environment at UNAM, 1993-1994, edited by Dr. G. Ponciano.

Faculty of Political Science
Contact: María C. Rosas
Telephone: (525) 622-9412
Facsimile: (525) 597-8887

Current Projects: *El Tratado de Libre Comercio de América del Norte y sus Acuerdos Paralelos: En Busca de una Dimensión Social.*

3. U.S.A

Arizona Toxics Information (ATI)

Address: PO Box 1896
Bisbee, AZ 85603
Contact(s): Michael Gregory, Director
Nicola Zeuner, Border Coordinator
Telephone: (602) 432-5374
Facsimile: (602) 432-5374
E-mail: aztoxic@primenet.com

*Current Projects:*ATI is conducting a Binational land-use planning project to deal with developments using, storing or transporting hazardous materials. It is funded by EPA Border XXI, as is the Tijuana River Watershed Toxics Data Project. ATI is also extensively involved in developing project certification criteria and procedures for BECC, and in monitoring projects' adherence to criteria. It has a database on information on toxics and is a clearing house for such information. ATI participates in the OECD process for creating a national Pollutant Release and Transfer Register (PRTR) guidance document destined to be used by governments and NGOs in the developing international "right-to-know network". It conducts workshops for industry on pollution prevention and maintains the Binational Border School's Integrated Pest Management Project.

Recent Publications:

"Public Access to Information in Mexico and the United States: Issues and Policy Options", Draft for Discussion *ATI, Enlace Ecologico and Proyecto Fronterizo de Educacion Ambiental* Prepared for the CEC, Montreal, December 1994.)

"Some Unacceptable Risks of Risk Assessment", presented to the Arizona Commission on Environment, March 1995.

Zeuner, Nicola and Michael Gregory, "Recommendations for Including Sustainable Development into BECC Project Certification Criteria". (April 1995.)

Zeuner, Nicola and Michael Gregory, "Comments to the Border Environment Cooperation Commission on the Draft Guidelines for Project Submission and Criteria for Project Certification" (July 1995.)

Center for International Environmental Law (CIEL)

Address: 1621 Connecticut Avenue, NW
Suites 200 & 300
Washington, DC 20009-1052

Contacts: Durwood Zaelke (President), Rob Housman, Brennan Van Dyke

Telephone: (202) 332-4840

Facsimile: (202) 332-4865

E-mail: cielus@igc.apc.org

Current Projects: CIEL in Washington, DC has a comprehensive trade and environment program that analyzes the environmental effects of trade liberalization from a legal perspective. Specific to the NAFTA context, CIEL has launched a major effort to incorporate environmental concerns in the NAFTA negotiation and pre-negotiation process. These efforts focus on environmental regulatory capacity building and NGO education. CIEL's new Geneva office has a fellowship program that gives professionals from Latin America working on environmental issues the opportunity to work in Geneva (the seat of the WTO) on trade and environmental policy issues.

Recent Publications:

Durwood Zaelke, Paul Orbuch and Robert F. Housman (eds) *Trade and the Environment: Law, Economics, and Policy* (Washington DC: Island Press, 1993.)

Comercio y Medio Ambiente: Derecho, economía y política (Mexico: Instituto Nacional de Ecología, Centro Mexicano de Derecho Ambiental, A.C., Centre for International Environmental Law, 1995.)

Environmental and Energy Study Institute

Address: 122 C Street, NW
Suite 700
Washington, DC 20001

Contact: Gareth Porter

Telephone: (202) 628-1400

Facsimile: (202) 628-1825

Current Projects: The Institute is studying the environmental impacts of liberalizing or restricting trade through OECD trade policies, including system of preferences, tariff scales, and quotas.

Friends of the Earth (FOE)

Address: 1025 Vermont Avenue, NW
Suite 300
Washington, DC 20005
Contact: Andrea Durban
Telephone: (202) 783-7400 Ext. 209
Facsimile: (202) 783-0444

Current Projects: Together with Public Citizen, FOE published a “Citizen’s Guide to the NAFTA”.

The Global Environment and Trade Study (GETS)

Address: 108 Livingston Street, Apt. A6
New Haven, Connecticut 06511
Contact: Steve Charnovitz
Telephone: (203) 777-6201
Facsimile: (203) 776-8167
E-mail: SCharnovitz@igc.apc.org

Current Studies: GETS is a consortium made up of the Yale Center for Environment Law and Policy (Dan Esty), the Foundation for International Environmental Law and Development in London (James Cameron), and the Institute for Agriculture and Trade Policy (IATP) in Minneapolis (Mark Ritchie). This consortium, with funding from several foundations, is working on a series of “trade and environment” studies. One of these efforts focusses on the issue of competitiveness and environmental regulation. Part of this study is an analysis of the environmental effects of trade liberalization and the competitiveness forces unleashed by trade agreements. In particular, the GETS effort is concentrated on looking at the evidence of “political drag” — the impact of environmental policy debates created by competitiveness pressures that may be exacerbated by expanded trade.

Great Lakes United

Address: 1300 Elmwood Avenue, Cassety Hall
Buffalo, NY 14222
Contact: Burkhard Mausberg, Executive Director
Telephone: (716) 886-0142
Facsimile: (716) 886-0303

Current Projects: Jointly, with the Institute for Agriculture and Trade Policy and the Canadian Environmental Law Association, Great Lakes United produced a preliminary survey and discussion guide concerning the environmental implications of the NAFTA in the Great Lakes basin.

Recent Publications:

“NAFTA and the Great Lakes: A Preliminary Survey of Environmental Implications”, discussion paper prepared by Great Lakes United, CELA, and the Institute for Agriculture and Trade Policy. (November 1993.) ★

Haas School of Business at the University of California in Berkeley

Address: Walter A. Haas School of Business
350 Barrows Hall
University of California
Berkeley, CA 94720
Contact: David Vogel
Telephone: (510) 642-5294
Facsimile: (510) 482-2383

Current Projects: In particular, David Vogel’s book *Trading Up: Consumer and Environmental Regulation in a Global Economy*, addresses questions of the environmental effects of regulatory harmonization. Dr. Vogel divides trade liberalization into two independent and two dependent variables. The first independent variable is the economic impact of trade liberalization from the removal of trade barriers, which in turn affects the volume of domestic and international economic activity, the composition of domestic production, and imports and exports. The second independent variable is the legal or political impact. This refers to the extent to which trade agreements force nations to change domestic regulations due to their role as non-tariff barriers. The dependent variables can be divided between the impact of trade liberalization and agreements on environmental quality and their effect on environmental standards. This effort represents one of the most advanced analyses of the environmental effects of trade liberalization.

Recent Publications:

Vogel, David, *Trading Up: Consumer and Environmental Regulation in a Global Economy*. (Harvard University Press, 1995.)

International Forum on Globalization

Address: 950 Lombard Street
San Francisco, CA 94133
Contact: Victor Menotti, Co-ordinator
Telephone: (415) 771-3394
Facsimile: (415) 771-1121

Current Projects: The Forum monitors the effects of the Uruguay Round implementation on democracy, equity and sustainability, as recorded by NGOs in over fifteen countries. It monitors the impacts of wider market access for American forestry exports on jobs and ecosystems and the impacts of wider markets for California rice producers on local ecosystems. It is also developing an explanation of the dynamics and relationships between economic globalization and ecological sustainability.

International Rivers Network

Address: 1847 Berkeley Way
Berkeley, CA 94703
Contact: Glenn Switkes, Director, Latin America Program
Telephone: (510) 848-1155
Facsimile: (510) 848-1008
E-mail: irn@igc.apc.org

Current Projects: The Network coordinates with NGOs in MERCOSUR countries to track environmental impact studies for the Hidrovia Paraná-Paraguay river channelling project. Hidrovia was touted as the “backbone of MERCOSUR” and has the potential to destroy the Pantanal, the world’s largest wetland.

Recent Publications: International Rivers Network publishes *Bank Check*, a bimonthly on issues related to World Bank, Free Trade, structural adjustments, etc. Research, archive and publication information is available.

International Trade Information Service

Address: PO Box 73866
Washington, DC 20009
Contact: Jim Vallette
Telephone: (202) 234-2847
Facsimile: (202) 462-4507

Current Projects: This service examines the positive and negative environmental and social impacts of commodities trade. It synthesizes existing information and produces new information regarding the basic commodities traded between the U.S. and other nations. It produces bimonthly “Real Trade” profiles and plans to produce a “World Trade Almanac”.

Recent Publications:

“A Day in the Life of U.S./Indonesia Trade” *Real Trade*, Vol., No. 1.
(International Trade Information Service, April-May 1995★)

Johns Hopkins University

Address: Paul H. Nitze School of Advanced International
Studies
Room 412
1740 Massachusetts Avenue, NW
Washington, D.C. 20036
Contract: Charles Pearson
Telephone: (202) 663-5688
Facsimile: (202) 663-5683

Current Studies: Charles Pearson and Judy Dean at SAIS have done a good deal of work on trade and environment issues. Dean’s 1991 survey of the trade and environment literature remains one of the cornerstone pieces of academic work in this realm. Both Pearson and Dean continue to do research in the trade and environment field. Their current work addresses a number of issues including the environmental consequences of trade. One particular line of research that Dean is pursuing is the effect that export bans in developing countries have upon the environment.

Recent Publications:

Pearson, Charles, “Testing the System: GATT + PPP = ?” *Cornell International Law Journal*, Vol. 27, No. 3. (Symposium 1994.)

Pearson, Charles, “Regional Free Trade and the Environment”, *Trade Liberalization in the Western Hemisphere* (Washington, DC: IDB/ECLAC, 1995.)

Pearson, Charles, "Trade and Environment: The U.S. Experience", in *Trade and Environment: The International Debate*. (UNCTAD/SELA, 1995.)

Dean, Judith, "Export Bans, Environment and Developing Country Welfare", in *Review of International Economics*, Vol. 3, No. 3, 1995.

Lincoln Institute of Land Policy

Address: 113 Brattle Street
Cambridge, MA 02138
Contact: Linda Eastley, Research Associate
Telephone: (617) 661-3016
Facsimile: (617) 661-7235

Current Projects: A proposal is in progress for the Council of Agriculture in Taiwan, R.O.C. to find alternatives for the agricultural sector using land to maximize the positive impacts of the NAFTA and GATT. The focus includes land to be set aside for more environmentally sensitive uses, rural to urban transformations, environmental value vs. economic gain, and market-oriented production vs. environmental degradation.

Massachusetts Institute of Technology (MIT)

Address: MIT Center for International Studies
292 Main Street E38, 6th Floor
Cambridge, MA 02139-4307
Telephone: (617) 253-3412

Current Studies: MIT publishes working papers on its Project on Environmental Politics and Policy.

Contact: Kenneth A. Oye, E38-648
Director, Center for International Studies and
Associate Professor of Political Science
Telephone: (617) 253-3412

Professor Oye is conducting an ongoing research project on inter-jurisdictional regulatory convergence and divergence within economically integrated areas. The study includes: (i) a set of environmental and non-environmental baseline cases that is now complete; (ii) a comparison of both the European Community's and North American approaches to reconciling divergent environmental regulations that is underway; and (iii) an IMVP-CIS assessment of the environmental performance of North American Automotive firms, transplants in North America, and East Asian firms in East Asia that is also underway.

Contact: Stephen M. Meyer E38-628
Director, Project on Environmental Politics and Policy
and
Professor of Political Science
Telephone: (617) 253-8078

Professor Meyer has established a research project on environmental politics and policy. His team is evaluating the economic impact of environmental regulations within economically integrated federal systems. Their work has included extensive analysis of the United States federal system. Professor Meyer has consulted with Canadian scholars on interprovincial and federal issues.

Contact: Lawrence Susskind 3-411D
Professor of Urban and Environmental Planning
Telephone: (617) 253-2026
Facsimile: (617) 253-9330

Professor Susskind is working with Professor Abram Chayes of the Harvard Law School on reconciling trade and environmental protection. They are examining standards for evaluating regulations and looking at dispute settlement mechanisms. Professor Susskind has served as a consultant to the WTO on these issues. He is also the editor of *Environmental Impact Assessment Review*.

Publications:

Murphy, Dale and Kenneth A. Oye, "Interjurisdictional Regulatory Cooperation and Competition". (Cambridge, MA: Center for International Studies Working Paper, forthcoming.)

Meyer, Stephen, *Environmentalism and Economic Prosperity* forthcoming.

Meyer, Stephen, "Impact of Environmental Regulation on State Economies". (September 1995.)

Susskind, Lawrence *Environmental Diplomacy: Negotiating More Effective Global Agreements* (Oxford University Press, 1994.)

Nautilus Institute for Security and Sustainable Development

Address: 746 Ensenada Avenue
Berkeley, CA 94707
Contact: Lyuba Zarsky, Director
Telephone: (510) 526-9296
Facsimile: (510) 526-9297

Current Projects: The Pacific Nautilus Research Institute is a small Berkeley, California-based policy centre that has done some creative work on trade and environment for a variety of organizations including the OECD. Its special focus is on the mechanisms for channelling trade in ways that will ensure that environmental protection is not sacrificed in the process of trade liberalization. Specifically, the Nautilus Institute monitors the work of the World Trade Organization and Asia-Pacific Economic Cooperation (APEC). It has commissioned papers on the environmental effects of agricultural liberalization and intensified aquaculture in APEC nations to determine what type of tracking needs to be carried out.

Recent Publications:

Zarsky, Kyuba and Jane Drake-Brockman
*Trade, Environment, and
APEC: Imperatives and Benefits of Regional Cooperation*
(December 1994.)★

North Carolina State University

Address: DARE
Box 7509 NCSU
Raleigh, NC 27695
Contact: Professor John Beghin
Telephone: (919) 515-5969
Facsimile: (919) 515-1824

Current Projects: John Beghin, of North Carolina State University, has been participating in the OECD Development Centre as a Visiting Research Fellow. He has published several articles and papers evaluating the global trade and environment nexus, as well as trade and pollution linkages in Mexico. His work uses standard OECD models and includes quantitative indicators of specific environmental impacts of trade.

Recent Publications:

Beghin, John, David Roland-Holst and Dominique Van der Mensbrugge,
“Trade and Environment Linkages in Mexican Agriculture”,
Preliminary Draft, May 16, 1995★

Beghin, John, David Roland-Holst and Dominique Van der Mensbrugge, "Trade and Pollution Linkages: Piecemeal Reform and Optimal Intervention", OECD Development Centre Technical Papers No. 99, draft, February 3, 1995.★

Beghin, John, David Roland-Holst and Dominique Van der Mensbrugge, "A Survey of the Trade and Environment Nexus: Global Dimensions, OECD Economic Studies No. 23, Winter 1994. ★

Beghin, John, David Roland-Holst and Dominique Van der Mensbrugge, "Trade Liberalization and the Environment in the Pacific Basin: Coordinated Approaches to Mexican Trade and Environment Policy", May 16, 1995.★

North-South Center, University of Miami

Address: 1500 Monza Avenue
Coral Gables, Florida 33146
Contacts: Ambassador Ambler Moss, Steve Stein, Robin Rosenberg
Telephone: (305) 284-6868
Facsimile: (305) 284-6370

*Current Studies:*The Center has undertaken a considerable number of projects on trade and environment issues with particular focus on relations between the United States and Latin America. The Center made special contributions to the environmental agenda that was discussed during the Summit of the Americas in Miami in December, 1994. Current work at the Center includes efforts to analyze the environmental effects of expanded trade in the Americas, especially in regard to the proposed free trade agreement of the Americas.

Pacific Institute for Studies in Development, Environment and Security

Address: 1204 Preservation Parkway
Oakland, CA 94612
Contact: Santos Gomez, Research Associate
Telephone: (510) 251-1600
Facsimile: (510) 251-2203

*Current Projects:*The Institute studies water policy, management and use in the U.S.-Mexico border region. It produces a series of publications exploring water use and management in San Diego and Tijuana, the relationship between water and the environment, and the relationship between trade and water policy.

Public Citizen

Address: 215 Pennsylvania Avenue, SE
Washington, DC 20003

Contact: Gabriela Boyer

Telephone: (202) 546-4996

Facsimile: (202) 547-7392

Current Projects: Public Citizen monitors the evolution of the World Trade Organization and the CEC. It carries out various related technical studies.

Recent Publications: Together with Friends of the Earth, it published a “Citizen’s Guide to the NAFTA”.

Interhemispheric Resource Center

Address: PO Box 4506
Albuquerque, NM 87196

Contact: Harry Brown

Telephone: (505) 842-8288

Facsimile: (505) 246-1601

Current Projects: The Centre will publish a monthly newsletter following the set-up of NAFTA-related institutions. It maintains a database of border issues that can be accessed for a nominal user fee.

Recent Publications:

Borderlines. Vol. 3, No. 5. (May 1995)★

Texas Center for Policy Studies

Address: PO Box 2618
Austin, TX 78768

Contact: Mary Kelly

Telephone: (512) 474-1082

Facsimile: (512) 474-7846

Current Projects: This Center monitors increased SO₂ emissions caused by NAFTA-related increases in border crossings at three sites. It also monitors selected U.S.-Mexico wastewater sites and border air quality through the existing El Paso-Ciudad Juarez Airshed Project. It publicizes the NAFTA-related border environment issues, especially the demand for environmentally-damaging “improvements” to the Gulf Intracoastal Waterway.

Recent Publications:

Ambiente Fronterizo. (March 1995).★

University of Minnesota

Address: Law School
Room 336, Law Center
229 19th Avenue South
Minneapolis, Minnesota 55455
Contacts: Robert Hudek and C. Ford Runge
Telephone: (612) 625-8346
Facsimile: (612) 625-2011

Current Studies: Robert Hudek's work at the University of Minnesota Law School focusses on trade law and environmental relationships. Ford Runge's work in the Department of Agricultural Economics is much more focussed on the impact of trade on the environment. Runge has written a number of papers and continues to do empirical research on the question of trade impacts on the environment, in particular relating to the agricultural sector. One of his books, *Freer Trade, Protected Environment; Balancing Trade Liberalization and Environmental Interests* ★, is a result of the Study Group on Trade and the Environment that took place in 1992-1993 at the Council on Foreign Relations. The study was organized by C. Michael Aho, Director of Economic Studies at the Council, and C. Ford Runge. It views the debate over trade and environment as being multifaceted with three main perspectives: legal, economic and environmental. The study focusses on a number of frequently studied examples in the trade-environment arena, including the following: the environmental impacts of market integration in the European Union (in both the agricultural and transport sectors); the NAFTA and the impact of expanded trade on the environment; the tuna-dolphin dispute of 1991 between the U.S., Mexico and several other countries; the 1989 dispute between the U.S. and Canada over salmon and herring landing requirements; and trade obligations and international environmental agreements resulting from multilateral agreements such as the Montreal Protocol.

Women's Environment and Development Organization (WEDO)

Address: 845 Third Avenue, 15th Floor
New York, NY 10022
Contact: Anita Nayer
Telephone: (212) 759-7982
Facsimile: (212) 759-8647

Current Projects: WEDO publishes primers on the linkages between the global economy, women, and the environment. The next primer will explore issues surrounding the World Trade Organization and the Bretton Woods institutions.

Recent Publications:

WEDO Primer #1:*Codes of Conduct for Transnational Corporations.*
(March 1995).★

Worldwatch Institute

Address: 1776 Massachusetts Ave., NW
Washington, DC 20036
Contact: Hilary French, Senior Researcher
Telephone: (202) 452-1999
Facsimile: (202) 296-7365

Current Studies: Hilary French's analysis of the potential environmental impacts of trade is well-researched and widely read. She has undertaken a number of studies on issues related to trade and the environment, which always pay attention to the environmental impacts of trade and trade liberalization. French maintains that properly managed trade can bring greater prosperity and an improved quality of living, while poor management will do the opposite. She claims that future policy should address how trade can promote sustainable development.

Recent Publications:

French, Hilary F., *Costly Tradeoffs: Reconciling Trade and the Environment.* WorldWatch Paper 113. (March 1993).★

World Resources Institute (WRI)

Address: 1709 New York Avenue, NW
Washington, DC 20006
Contact: Robert Repetto, Paul Faeth
Telephone: (202) 662-3499
Facsimile: (202) 638-0036

Current Projects: WRI has a wide-ranging program examining resource and environmental trends around the world. It has done some work on the trade and environment issue, including some efforts to examine the environmental effects of trade. At present, WRI is developing a model for American agricultural prices, production, inputs, and environmental impacts of changes in policies. The baseline used assumes the non-existence of the NAFTA, GATT, and the 1995 U.S. Farm Bill, and can be tied to trade models. Robert Repetto's competitiveness analysis is considered path-breaking.

Recent Publications:

Repetto, Robert, *Trade and Sustainable Development* (1994). ★

Faeth, Paul, *Growing Green: Enhancing the Economic Performance of U.S. Agriculture.* (April 1995).★

World Wildlife Fund/OECD/Dartmouth College

Address: 1250 24th Street, NW
Washington, DC 20037
Contact: Konrad von Moltke
Telephone: (202) 293-4800
Facsimile: (202) 293-9211

Current Projects: Ongoing work on trade and environment is conducted with all three organizations.

World Wildlife Fund (WWF), U.S.A.

Address: 1250 24th Street, NW
Washington, DC 20037
Contact: David Schorr
Telephone: (202) 293-4800
Facsimile: (202) 293-9211

Current Projects: WWF studies the effects of trade agreements on PPMs for commodities. It also studies trade impact on forestry and has made proposals with funding bodies for field-oriented studies. It is planning a field program in Mexico to develop case studies for monitoring the NAFTA's implementation.

Yale University

Address: 205 Prospect Street
New Haven, CT 06511
Contact: Dan Esty, Director
Center for Environmental Law and Policy
Telephone: (203) 432-6256
Facsimile: (203) 432-3817

Current Projects: The Global Environment and Trade Study, undertaken in collaboration with Steve Charnovitz, Mark Ritchie, and James Cameron (FIELD/UK), is an analytical study of the trade effects of environmental policy. The study will result in four reports: The Role of NGOs in the WTO; Competitiveness and Environmental Protection; Environmental Barriers to Trade; and Ecolabelling.

4. International

Cambridge University (UK)

Address: Wolfson College
Cambridge, CB3 9BB, UK
Contact: Damien Geradin
Telephone: 122 333-5900

Current Projects: Damien Geradin, a Belgian, has been working on the issue of trade and the environment for a number of years. His particular focus is on European Union approaches to the trade and environment problem, with a special emphasis on legal cases that shape the trade and environment relationship. Although very little of his work focusses specifically on environmental consequences of trade liberalization, his analysis of the legal framework that might shape the environmental effects of trade is important.

Centre for Development and Environment at the University of Oslo (Norway)

Address: P.O. Box 1116
Blindern, N-0317
Oslo, Norway
Contact: Stein Hansen
Telephone: +47 22858900
Facsimile: +47 22858920
E-mail: stein.hansen@sum.uio.no

Current Projects: Of the items in the Centre's Strategic Plan for 1995 to 1999, International trade, national development strategies and environment has been selected for special attention. The interplay between environmental, trade and economic measures will occupy a central place in this study.

The Royal Institute of International Affairs (London)

Address: Chatham House
10 St. James Square
London, SW1 4LE, UK
Contact: Duncan Brack, Senior Research Fellow
Energy and Environment Program
Telephone: (071) 957-5700
Facsimile: (071) 957-5710

Current Projects: The Royal Institute of International Affairs (Chatham House) has launched a series of studies dealing with trade and environment topics. The focus of this research series is on empirical analysis rather than on theoretical work. The Chatham House group intends to publish trade and environment reports on the following topics:

- The Montreal Protocol — control of CFCs
- Energy taxation — the implications for trade
- Intellectual property rights and biotechnology
- Environmental protection and enlargement of the European Union
- Fisheries — trade and conservation
- Environmental product standards and trade
- Trade in waste

In addition to the trade and environment reports identified above, the Chatham House team also plans to prepare a series of shorter briefing papers to cover the following topics:

- Trade and environment — the issues
- Trade and multilateral environmental agreements
- Liberalization of protected markets and environmental protection
- Trade and animal health and welfare

International Institute for Environment and Development (UK)

Address: London Environmental and Economics Centre
3 Andsleigh Street
London, WC1H 0DD, UK
Telephone: (44 171) 388-2117
Facsimile: (44 171) 388-2826

The Organization for Economic Cooperation and Development (OECD, France)

Address: Environment Directorate
2 rue André-Pascal
75775 Paris, Cedex 16, France

Contact: Jean-Phillipe Barde
Telephone: (33 1) 4524.9822
Facsimile: (33 1) 4524.7876

Current Projects: Under the direction of Candice Stevens (who has recently left her position in the environment directorate), the OECD has been a leading research centre on the topic of trade and the environment. The OECD has hosted a number of workshops on related topics. In 1994, the organization released a book entitled *The Environmental Effects of Trade*. This volume is one of the best single sources of information on the environmental impacts arising from trade and trade liberalization. The OECD “trade and environment program” is now in transition, but a new trade and environment work program will likely be developed in 1996.

Recent Publications:

The Environmental Effects of Trade (OECD, 1994).★

Trade and Environment: Processes and Production Methods (OECD 1994).★

The United Nations Environment Program (UNEP)

Geneva

Address: Environment and Economics Unit
15, Chemin des Anémones
1219, Genève

Mailing: Palais des Nations
1211 Genève 10, Switzerland

Contact: Chief, Environment and Trade
Telephone: (41 22) 979-9288 / 178
Facsimile: (41 22) 796-9240

New York

Address: R.O.N.A. — UNDC Two Building
Room 0803
Two, United Nations Plaza
New York, New York, 10017

Contact: Laura Campbell, Senior Legal Officer
Telephone: (212) 963-8142
Facsimile: (212) 963-7341

Current Projects: Under the direction of Elizabeth Dowdeswell, and with the immediate leadership of Scott Vaughn and Laura Campbell, UNEP has hosted a number of meetings of expert groups on environmental issues

arising in the context of trade liberalization. In preparation for these meetings, UNEP has commissioned a number of background papers, including several that have focussed on the environmental effects of trade and trade agreements. UNEP plans to convene two meetings on environmental assessments of trade policy in late 1995 and 1996. The first, in November 1995, will be a technical meeting of experts that will address assessment methodologies. The second will be a larger international conference addressing the policy implications of environmental assessments, including the findings of the technical meetings. The second conference will be held in April 1996.

United Nations Commission on Sustainable Development (CSD)

Address: One United Nations Plaza
New York, NY, 10017
Contact: Ken Ruffing
Telephone: (212) 963-4669

*Current Projects:*The CSD has made trade and environment a major focus of its work. In conjunction with other international bodies, the CSD is addressing a number of issues including:

- product measures and market access
- process standards and competitiveness
- internalization of environmental externalities in trade
- multilateral environmental agreements and trade policy
- environmental factors in trading opportunities
- trade policies and the environment

The UN Conference on Trade and Development (UNCTAD)

Address: Commodities Section
Palais des Nations
Ch-1211 Genève 10, Switzerland
Contact: Mr. Mehmet Arda, Chief, General Studies Section
Telephone: (41 22) 907-5790
Facsimile: (41 22) 907-0047

*Current Projects:*UNCTAD has a multidimensional trade and environment research program underway in two of its divisions. One effort, led by Rene Vossenar, covers a range of trade and environment topics of concern to developing countries, including issues related to competitiveness. The second UNCTAD effort, led by Mehmet Arda, has focussed on commodity production, and trade and development case studies.

The United Nations Development Programme (UNDP)

Address: One United Nations Plaza
New York, New York 10017
Contact: Karen Jorgensen
Telephone: (212) 906-5008
Facsimile: (212) 906-6947

Current Projects: UNDP has a number of people focusing on the environmental effects of trade and trade liberalization. Their work is largely practical, conducted in the field: they do not have a significant amount of theoretical studies underway. A joint UNCTAD/UNDP project on the reconciliation of environmental and trade policies is being carried out as part of UNCTAD's overall research in the area of policy. To understand the linkages of trade and the environment better, the project had local individuals carry out a number of studies in both developing and transition economies. The project focusses on the quantitative environmental impacts of the liberalization of trade.

Recent Publications: A joint UNCTAD/UNDP 15-country case study on reconciliation of environmental and trade policies is expected to be concluded by early 1996.

The World Trade Organization (WTO)

Address: Centre William Rappard
Rue de Lausanne, 154
Ch-1211, Geneve 21, Switzerland
Contact: Richard Eglin, Director, Trade and Environment
Telephone: (41 22) 739-5111
Facsimile: (41 22) 731-4206

Current Projects: The WTO has a small trade and environment staff. Serving as staff to the WTO's committee on trade and environment, this group has done substantial work on environmental issues related to the international trading system. The current agenda of the Committee on Trade and Environment includes:

- Provisions of the multilateral trading system with respect to the transparency of trade measures used for environmental purposes, environmental measures, and requirements that have significant trade effects.
- The relationship between the dispute settlement mechanisms in the multilateral trading system and those found in multilateral environmental agreements.
- Appropriate arrangements for WTO relations with NGOs and transparency of documentation.

- The relationship between environmental policies relevant to trade and environmental measures with significant trade effects and the provisions of the multilateral trading system.
- The effect of environmental measures on market access, especially in relation to developing countries and in particular to the least-developed among them, as well as the environmental benefits of removing trade restrictions and distortions.
- The relationship between the provision of the multilateral trading system and trade measures for environmental purposes, including those pursuant to multilateral environmental agreements.
- The relationship between the provisions of the multilateral trading system including two specific areas: charges and taxes for environmental purposes; and the requirements for environmental purposes relating to products, including standards and technical regulations, packaging, labelling and recycling.

The Committee will report to the WTO Ministerial Conference scheduled to be held in Singapore during December, 1996.