

**BACKGROUND NOTE:
INFORMAL WORKSHOP ON ENVIRONMENT AND TRADE
Commission for Environmental Cooperation**

MONTREAL, 13 DECEMBER 1999

Note by the Secretariat

This Note, prepared by the Secretariat, is intended to highlight possible areas for discussion during the Informal Workshop on Environment and Trade, and does not reflect any official position of the CEC Secretariat or its Parties.

FORMAT AND GOALS OF WORKSHOP

Participants at the workshop will comprise officials to the three Parties of the North American Agreement on Environment Cooperation (NAAEC), together with a small group of outside experts. The workshop is informal, intended to facilitate an open and focused exchange of views on issues involving the relationship between trade and environment. As the first meeting between governments and outside experts held in support of the NAAEC Article 10(6) officials group on trade and the environment, the workshop is expected to provide valuable input in focusing the Commission's future work on environment and trade issues.

The workshop will be held in English, French and Spanish. A summary of issues raised during the workshop will be prepared by the Secretariat under its own responsibility: issues and positions will not be attributed to governments, organizations or individuals in the summary report.

SESSION ONE: THE PRECAUTIONARY APPROACH

This Session examines the evolving relationship between the precautionary approach and trade policy.

In the 1992 Rio Declaration, the precautionary approach is defined thus:

“Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.”

Reasons behind the precautionary approach vary, but include the recognition – especially in the human health and environmental sciences – that complete scientific confirmation of a problem is often elusive, or if and when complete certainty exists, it may be too late to implement policies that halt serious or irreversible damages. In areas as diverse as eco-toxicity, the cumulative effects of certain chemicals or wastes, climate change or the sudden decline of certain species, experience suggests that predicting the full dimension of environmental problems over time is complex and uncertain. Accordingly, the precautionary approach suggests that the lack of complete scientific evidence is not a sufficient reason to delay the implementation of appropriate policy responses.

The history of the Montreal Protocol is a good example of the sequence of the precautionary principle in practice. The problem of stratospheric ozone depletion was first identified in 1973 as a hypothesis. Roland and Morina looked at the likely chemical reaction between chlorine-based

CFCs and oxygen in the stratosphere, and concluded that one molecule of chlorine destroys 100,000 molecules of ozone. This theory set in motion a series of events, including the signing of the Vienna Convention in 1985, increased efforts to empirically verify and model the Roland and Morina theory, initial but incomplete confirmation based on testing by NASA in the Antarctic, the signing of the Montreal Protocol, a series of measures to strengthen the Protocol as new information was forwarded, and the eventual confirmation of the hypothesis. The point is that action did not await the empirical confirmation of the hypothesis.

A plain reading of the UNCED principle suggests that its main emphasis is defending policies that are likely to encounter opposition or delays (“postponing”) based on calls for full scientific certainty.

Given this emphasis on countering delay, another plain reading of the UNCED approach is its suggested emphasis on anticipatory and preventive measures. For example, the Bamako Convention on hazardous wastes makes the link between the precautionary principle and pollution prevention through the adoption of cleaner production methods thus:

“The Parties shall co-operate with each other in taking the appropriate measures to implement the precautionary principle to pollution prevention through application of Clean Production methods, rather than the pursuit of a permissible emissions approach based on assimilative capacity assumption.”

Precautionary measures are at the heart of many everyday actions, including these taken in support of well-functioning markets. Market-related precautionary measures range from minimum capital reserve requirements set out by the Bank for International Settlements for commercial banks to cover potential loan loss provisions to mandatory insurance premiums for many commercial activities. Yet in the environmental arena, the operational implications of the precautionary approach can be contentious.

There are several reasons why the approach remains controversial, perhaps beginning with the absence of a clear, uniform definition as to what is implied by “serious or irreversible” damage. First, while “serious” may be intuitively clear, it nevertheless begs the question as to: just how serious, based on which environmental data, baselines, environmental indicators, over what time period, and in which geographic area? In addition to these considerations, the term “serious” suggests certain values about minimal risk thresholds or risk tolerance that may vary widely.

Likewise, no uniform definition exists regarding “irreversible” environmental damages. Clearly, irreversibility implies the absolute, non-recoverability and/or collapse of an environmental resource. Irreversibility is forever. In areas like the extinction of species and human health effects, irreversibility may be easier to identify. However, for many pollution-related indicators, some environmental damages may be reversible over extended periods of time.

Another point of debate in the UNCED precautionary approach is the meaning of “*full scientific certainty*.” As noted above, 100 percent scientific certainty is often unavailable during the formulation stage of environmental policy. Accordingly, the approach suggests that something less than 100 percent scientific certainty should be sufficient to trigger an environmental policy. The question is, how much less than 100 percent is sufficient to introduce environmental policies? Can they be triggered at 60 percent, or 30 percent or 5 percent of scientific certainty, and most crucially, who decides on acceptable thresholds?

A third question arising from the UNCED definition is the plain meaning of “cost-effective” measures. Various tools exist to measure cost effectiveness, including, for instance, the application of cost-benefit analysis (CBA) applied to environmental policies. However, one of the reasons environmental economics has evolved is because of the contention that conventional assumptions behind CBA methods systematically err in overstating economic costs of environmental measures, and in understating environmental benefits. Among the responses to counter incorrect or incomplete economic signals are tools like natural resource or full cost accounting, or environmental valuation. A general observation is that including results of these approaches can bring about significant changes in CBA or standard cost effectiveness calculations, which in turn is important given the suggestion in the precautionary approach of a proportional relationship between economic costs required to address an environmental problem, the seriousness of the problem, and the degree of scientific uncertainty involved.

INTERNATIONAL TRADE ISSUES

Challenges in interpreting the precautionary approach are compounded when the stage shifts from the domestic to the international arena. Countries may vary in their interpretation about such basic issues as what constitutes a serious threat, how is cost-effective action measured, what level of scientific uncertainty is acceptable to trigger policy action, and what underlying differences between countries in accepting different levels of risk in turn affect the international aspects of the approach.

An obvious route for sorting out different interpretations of the precautionary approach is through international environmental standards or legal agreements. Another is through trade relations. Perhaps the central question arising from the relationship between the precautionary approach and trade policy revolves around whether environmental measures founded upon the approach can condition the market access of goods or services from other countries that have different interpretations of that approach? Such restrictions can take varied forms, including import prohibitions, domestic sanitary and phytosanitary (SPS) measures, product-related standards or other measures. An increasingly important area of international trade law concerns the relationship between domestic measures based on incomplete science and risk assessment, and restrictions on market access. This includes the WTO Hormones case and the Appellate Body decision, which has shed new light on this evolving relationship. (For example, the Appellate Body report on the Hormones panel has suggested a “rational relationship” between SPS-measures and risk assessment.)

Concerns have been noted that if market restrictions tied to precautionary approaches result in trade disputes, panels may find themselves examining not only the specific trade-related aspect of the measure imposed, but also the environmental and scientific justification underlying the measures. This examination could lead trade panels to second-guess the relative merits of different scientific findings, something that has been called the “dueling of scientific evidence.” Such a scenario goes beyond the traditional role of trade panels, although the growing importance of weighing the “aims and effects” of policies that have market implications has been noted by several legal scholars.

Questions for Possible Discussion:

- *Is there a role for international environmental organizations such as the CEC in examining the comparability of different national approaches to the precautionary approach, based on differences in environmental data, baselines or underlying assumptions and interpretations?*

- *To what extent can various environmental economics tools, including resource accounting and environmental valuation, convey a fuller picture of cost-effective policies related to the precautionary approach?*
- *Among the mandates of the Commission, NAAEC Article 10(6) relates to dispute avoidance. Does the relationship between the precautionary approach and trade policy lend itself to dispute avoidance and if so, in what areas?*

SESSION TWO: BUILDING “WIN-WIN” ECONOMY-ENVIRONMENT LINKS

In recent years, the trade-environment debate has shifted somewhat from the premise of a confrontational relationship between trade liberalization and environmental quality, toward growing interest in coordinating the trade and environment agendas so as to yield economic *and* environmental returns. This is often referred to as “win-win” trade-environment links.

Win-win links assume that, in part, environmental degradation is caused by pricing failures. In principle, well-functioning markets are able to allocate scarce resources in an optimal or efficient manner, although in practice, market and pricing failures are commonplace. One example of pricing failures is the asymmetrical relationship between market prices and environmental resources, whereby valuable environmental resources are systematically undervalued or have no value whatsoever in the marketplace.

Other examples of pricing failures include distortions based on public policy interventions, and include environmentally damaging subsidies, incentives or disincentives, tariffs (including escalating tariffs) or other measures. One area that has received growing attention is the link between subsidies and environmental degradation. By establishing a price wedge between domestic and world prices, subsidies often shield inefficient domestic producers from world competition, thereby prolonging inefficient producers, and in many cases creating a situation of production over-capacity.

The fisheries sector is among the best examples of domestic subsidies prolonging economically inefficient and environmentally damaging practices. Although estimates vary, the FAO has suggested an order of magnitude for world fisheries subsidies in the vicinity of US\$54 billion per year, creating a situation characterized as “too many vessels chasing too few fish.” Over-capacity of the world’s fishing fleet has in turn been identified as contributing to the serious decline or collapse of several commercially viable fish stocks, as well as to contributing to significant losses in non-commercial by-catch, including by-catch of endangered marine mammals.

Other sectors that have been identified as receiving subsidies that contribute to high environmental costs are the agriculture, energy and transportation sectors.

Work by several organizations—including WWF, IISD, WRI, OECD and the World Bank—suggests that while the removal of price distortions like subsidies or tariffs do not in themselves guarantee environmental protection, removing them can yield important environmental and economic dividends. Given relatively strong disciplines covering tariff reduction or actionable subsidies under different trade agreements, some environmentalists have looked to trade rules as an ally in strengthening environmental protection.

Perhaps the easiest way of recognizing a win-win link is by knowing what it is not. Based on this popular typology, win-win links are not:

- (a) **win-lose** links: arguably the most familiar area of environmental policy, whereby economic expansion leads to environmental degradation;
- (b) **lose-win** relationships: less familiar, although arguments from some interests in energy-intensive sectors regarding the economic costs of meeting greenhouse gas emission reduction targets are that environmental benefits will be overshadowed by economic costs;
- (c) **lose-lose** relationships: which may include price distorting subsidies that prolong uncompetitive and inefficient industries, and contribute disproportionately to environmental harm.

It is hard not to be enthusiastic about win-win links, but it is worth noting that they are neither automatic nor free of economic or environmental costs. While subsidies, perverse pricing incentives, tariffs and other measures exert a negative effect on the economy as a whole, such measures obviously benefit some groups within some sectors or regions. Arguing for their removal based on environmental benefits is unlikely to calm opposition from groups previously shielded from world competition, and may result in a return of the “jobs versus environment” debate on a global stage.

Win-win relationships also have environmental costs. The point is that such costs are assumed to be lower, compared to the status quo (that is, trade restrictions and distortions remain in place). However, the environmental “win” of the typology almost always is a relative as opposed to an absolute term. Work by the CEC suggests that win-win links requires specific analysis, including environmental analysis of willingness of consumers to pay a price premium for green goods or services. Such analysis needs to be done commodity by commodity, sector by sector, and country by country. The Commission’s work in three areas¹—Mexican shade-grown coffee, eco-tourism and sustainable trade in wildlife—suggests that certain methods of production are preferable to others, and that market-based tools that enable consumers to differentiate the relative benefits of goods and services, including labeling, certification and institutional procurement policies, can play an important role in realizing win-win links.

Questions for Possible Discussion:

- *To what extent does the NAFTA support win-win relationships, and how can these relationships be strengthened?*
- *Given the variety of green labeling, certification and procurement policies in North America, are there areas of cooperation among governments or at the scheme level, and what is the role of the CEC in encouraging market-based tools or pricing reforms in support of win-win outcomes?*
- *In promoting win-win relationships, (in addition to removing price distortions) policies need to be examined, including finding ways of supporting private sector investment and participation in green markets, improving the understanding of consumer demand for green goods and services, and increasing the public’s understanding of the environmental consequences of their everyday actions as consumers. What is the role of public policy in supporting efforts by the private sector in supporting win-win outcomes?*

SESSION THREE: INVESTMENT LIBERALIZATION AND THE ENVIRONMENT

¹ At the workshop, four reports will be available to interested participants: the market analysis of consumer interest in, and willingness to pay for, Mexican shade-grown coffee; an inventory of environmental labeling, certification and government (and institutional) procurement schemes in place in Canada, Mexico and the United States; the proceedings of the CEC experts workshop on eco-tourism, held earlier this year in Mexico; and an overview of trade in wildlife in North America.

It is now a commonplace observation that private investment flows (both foreign, direct and portfolio) far outstrip international trade flows, and far exceed domestic budgets to implement environmental policies. Indeed, as many governments face flat or contracting budgets for environmental protection, it is clear that the US\$125 billion per annum price tag the Rio Summit attached to achieving development sustainability will not be met by government budgets, and needs to rely on partnerships with the private sector in general, and foreign direct investment (FDI) in particular.

Investment flows have undergone impressive increases in recent years. Reasons include the liberalization of financial markets—including the removal of capital and other controls—an accelerated search by investors for the highest returns on investment, coupled with increased diversification of investment portfolios. As markets become integrated, investors face the prospect both of higher returns on investment, and conversely, higher risk. Among the lessons of the turbulent 1990s is that economic disruptions are unprecedented in their severity and swiftness, and that they can be transmitted between countries through well-traveled channels like trade flows and commodity prices, and increasingly through private capital flows.

Among the issues that have attracted the attention of the environmental community since UNCED is the relationship between investment in its broadest definition, and the environment. This includes a growing recognition of the importance of the financial services sector in environmental protection, as well as the potentially close link between FDI flows and adherence to environmental management standards, higher or lower levels of environmental technologies or performance standards, etc.

Among the questions that could benefit from more empirical analysis is to what extent does FDI alter the scale, timing and technological choice of investments, (which in turn affect the environment) compared, for instance, to domestic investments? That is, are there differences in environmental outcomes between domestic and FDI, and if so, what are they? Given the interest of the financial services sector in environmental issues related both to risk management and identifying higher returns on investment, what is the role of FDI in building win-win links, and what is the appropriate supporting role of governments in building green investments?

A more specific issue relating to investment flows and environmental quality concerns the environmental implications of investment liberalization. Chapter 11 of NAFTA (Investment) contains disciplines covering cross-border investments among the three countries (national treatment, MFN, performance requirements, etc). By including investment in trade rules, it is useful to ask whether the *process* of liberalization—which tends to be characterized by changes in policies—poses different types of challenges in measuring environmental effects, compared to juxtaposing two distinct but static data sets, for example, environmental issues before and after investment liberalization?

Understanding what happens during liberalization may pose more difficult methodological challenges because of uncertainties inherent in any transitional period involving public policy. One example in this regard is investor-state disputes under Chapter 11 of NAFTA involving environmental measures. It is worth noting that when Canada and the United States undertook environmental reviews of NAFTA in 1992 and 1993, respectively, considerable attention in both reviews was placed on identifying potential environmental regulatory effects arising from NAFTA. Yet neither review anticipated that five years later, environment-related Chapter 11 investor-state disputes would have become the center of the public's growing concern about the environmental consequences of NAFTA.

Questions for Possible Discussion

- *What is the role of public policy in promoting FDI flows that might contribute to environmental improvement? What does the private sector expect from governments regarding linking investments to higher environmental performance?*
- *What is the role of the environmental experts and the Commission in environment-related, Chapter 11 disputes?*
- *What is the impact of sudden entry into, and retreat of, the portfolio component of FDI on environmental regulations and environmental planning?*

SESSION FOUR: ASSESSING THE ENVIRONMENTAL EFFECTS OF TRADE

Part of the Council's mandate under NAAEC's Article 10(6) involves undertaking an "ongoing" assessment of the environmental effects of NAFTA. To that end, in June 1999 the Council released its Analytical Framework. The result of nearly five years of collaborative effort involving numerous disciplines (including economics, law, political economy, environmental sciences and others), the Framework has been enriched by many people, through advice from the Joint Public Advisory Group, different peer reviewers and comments and input from the public. Indeed, the process by which the Framework has been developed has been as important as the actual framework itself.

Briefly, the Framework sets out a linear approach, suggesting that analysis concentrate on economic sectors that generate or may generate environmental pressure (agriculture and energy are notable examples) and have been subject to changes in trade rules. It then suggests that economic data be examined, including data on changes in trade and investment flow. In addition to economic variables, the Framework also points to the important role of numerous non-economic variables, including institutions, in affecting environmental outcomes. In the case of the NAFTA, several institutions can all affect environmental quality. This includes the NADBank, the CEC Council and Secretariat, as well as numerous trilateral working parties and groups under NAFTA, which directly or indirectly address environmental issues like pesticides, harmonization of emission standards, hazardous wastes, forestry, labeling and certification and other issues. (For the most part, no operational link exists between the CEC and the NAFTA Free Trade Commission and its working groups nor are there dispute settlement procedures in cases dealing with the environment.)

Several suggestions are made in the Framework on how to link economic and environmental data, including consideration of the production, management and technology characteristics of firms examined, with six factors—composition of inputs, relative production efficiency, physical technology, management standards, product characteristics and prices, and the sectoral and geographic concentration of production—noted as areas of analysis. It is also suggested that any assessment should consider physical infrastructure, including capacities, changes in the concentration of economic activity, possible bottlenecks or choke-points, and the potential for creating transport corridors, which refer to north-south road-transport corridors and shifts in intermodal transport composition (that is, from marine to road transport.)

In examining these and other variables, the most important question for the Commission concerns how NAFTA affects environmental quality: that is, what is the impact of NAFTA on air, water, land and living things? This area is arguably the most difficult, because judgments must be made—in similar manner to issues relating to the precautionary approach and measuring the relative benefits of win-win links—regarding the choice of environmental data and environmental indicators, and about what time period and geographic region and ecosystem. This question of choosing indicators cuts to the heart of the public's interest in getting an answer about the net

environmental impacts of trade. That is, the public debate about trade and environment is often divided between those who argue, “NAFTA has been bad for the environment, based on the following evidence,” or conversely, “NAFTA has been good for the environment, based on the following evidence.” The “evidence” usually depends on the selection of environmental indicators used in the analysis.

A point worth noting is that environmental indicators are not limited to pollution indicators. A great deal of work underway in identifying correlations between environment and trade are founded on indicators of pollution intensity, for example, NO_x and SO_x , particulate matter and biological oxygen demand. In the last five years, extremely interesting progress has been made in linking various quantitative economic models with indicators that are primarily pollution-related. Examples include the application of general equilibrium models (such as those used by the GTAP) or econometric models with some CGE components (such as those developed by Jorgenson and Wilcoxon) to suggest quantitative effects of trade liberalization on the environment. Similarly, work by Wheeler, Ferrantino and others provide new insights into trade-induced changes in pollution intensities measured as pollution per unit of output or pollution per unit of GDP.

Arguably, the most compelling feature of this work is that it focuses the trade-environment debate into measurable, quantitative results. Numbers have a way of focusing the environmental debate in a way qualitative observations generally do not. However, forwarding incomplete numbers often poses more problems than the numbers hope to solve. The often fierce debate about the motivations behind the theory of the Environmental Kuznets Curve (EKC) can be explained by the selection of pollution-intensity indicators to suggest the whole story about the relationship between trade-induced growth in GDP per capita and relative gains in environmental quality. In hindsight, the EKC is useful insofar as it tells *part* of the story, while remaining pretty much silent on other environmental indicators, including biodiversity or ecosystem integrity indicators, and this omission is often shared by other economic modeling work.²

The challenge of aggregating many environmental indicators to tell a whole story is hardly unique to assessing the environmental effects of trade. Unlike aggregated economic indicators that make up GDP, no composite environmental indicator yet exists, although much interesting work by SCOPE, WRI, UNCSD and others continues.

As far as the Framework is concerned, the next step in support of the Council’s announcement of a public call for papers is the planning of a CEC-hosted symposium on the environmental effects of NAFTA, to be held in October 2000.

A question related to the post-symposium results, as well as *ex post* environmental assessments more generally, revolves around where the results of assessment ought to be focused, in terms of policy implementation. Assuming environmental costs and benefits are identified in environmental assessments of trade, what is the appropriate policy forum to respond to such findings? For example, if negative effects are identified, should the appropriate policy response

² In the case of the Framework, indicators are proposed for air and water pollution, land use, and biodiversity. These include eight air pollution indicators, including obviously SO_x , NO_x , particulate matter and carbon monoxide and dioxide; 44 water pollutant indicators primarily related to drinking water standards; and for land, intensity of pesticide use per hectare of agricultural lands, percentage of forested areas, changes in forest cover as well as changes in the diversity of forest cover, waste generation and other indicators. For biodiversity indicators, the Framework suggests several possibilities, including threatened or extinct species, changes in these numbers or trajectories, and wetlands and protected natural areas.

focus solely on ensuring sufficiently robust environmental measures capable of absorbing additional trade-related environmental pressures? Or, is there a role for trade policy in mitigating adverse environmental effects, and accentuating positive ones?

This question leads us partially back to win-win relationships: work on the environmental benefits of subsidies highlights the fact that trade policy reform can yield environmental benefits. Similarly, some have suggested that one way to promote environmentally preferable goods and services is to provide preferable market access through lower tariffs or other measures.

While both examples—subsidy and tariff elimination—represent win-win relationships, they reflect distinct approaches regarding the role of trade policy in promoting the environment. Though the environmental benefits of subsidy removal can indeed be significant, it is important to note that they are achieved serendipitously, that is, as the agenda of trade liberalization proceeds on its chartered course. In linking green goods with preferential market access, desired environmental outcomes are contingent upon trade policy itself. Whatever the approach, the point of departure must be a robust understanding of the environmental consequences of trade, and hence the important role of environmental assessments.

Questions for Possible Discussion

- *Should the CEC's work in assessing the environmental effects of trade focus on technical issues like the aggregation of environmental indicators, more general policy issues such as identifying the appropriate policy forum to mitigate negative environmental impacts and promote positive ones, or both?*
- *Can the Analytical Framework be applied not only to the NAFTA but also to other trade and economic agreements?*