

**Environmental Assessment of NAFTA by the Commission for
Environmental Cooperation:
An Assessment of the Practice and Results to Date**

Final draft –17 October 2011

Soledad Aguilar
Roberto Constantino
Aaron Cosby
Sabrina Shaw

iisd International Institute for Sustainable Development
Institut international du développement durable

Contents

Executive Summary.....iii

Introduction 1

What should the CEC’s efforts be accomplishing? 2

 Unbundling the 10(6) mandate 2

 The shape of best practice..... 5

Are we there yet? An assessment 9

 The current approach 9

 Survey of results: A critical assessment..... 11

 General lessons learned on trade and environment..... 11

 Strengths of the current approach 14

 Weaknesses of the current approach..... 15

 The CEC-FTC Relationship 17

Conclusions 19

References 22

Annex I: CEC research surveyed..... 28

Annex II: Interviews 34

This report was prepared for the Secretariat of the Commission for Environmental Cooperation (CEC). 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.

Executive Summary

The context for this report is based upon certain obligations of the Commission for Environmental Cooperation (CEC), as described in the North American Agreement on Environmental Cooperation (NAAEC). Specifically, article 10(6)(d) of the NAAEC charges the CEC Council (comprised of the Parties' cabinet-level environmental officials) to cooperate with the NAFTA Free Trade Commission (FTC) to achieve the environmental goals and objectives of the NAFTA by, inter alia, "considering on an ongoing basis the environmental effects of the NAFTA."

Over the last 15 years the CEC has overseen an unprecedented effort to fulfill that mandate, and to consider, *ex post*, the environmental effects of the NAFTA. The benefits of that effort are significant:

- A useful framework for analyzing the environmental effects of trade;
- An empirical grounding for arguing significant linkages between trade and environment, in NAFTA and more generally;
- A considerable body of work to identify the specific environmental effects, both positive and negative, of the NAFTA; and,
- A raised public profile for the issues of trade and environment in general.

The framework produced early in that process is a solid grounding on which to base further efforts in fulfilling the CEC's Article 10(6)(d) mandate. It was originally envisioned, however, that the framework would be continuously improved through application, and that a symposium process would be central to that improvement. These expectations, however, have not been fulfilled. To remain relevant and useful as a basis for analysis the framework needs to be the subject of a dedicated and ongoing process of improvement and revision. It is suggested here that two of the necessary revisions involve:

- Broadening the scope beyond just those effects that are attributable to the NAFTA and its institutions, given the fact that this a progressively less distinguishable set of effects 15 years hence, and given the mandate to undertake this work on an ongoing basis; and,
- Broadening the focus to considering broader impacts than just environmental, given the fundamental links between environmental, social and economic impacts.

Broadening the *scope* means considering the effects of NAFTA trade and investment flows, but free from the current framework's requirement to identify what portion of them are attributable to NAFTA. This is a pragmatic approach; trying to construct a no-NAFTA baseline case 15 years out is practically impossible. It is the only approach that makes sense in light of the mandate to assess those effects on an ongoing basis. And it gets to the heart of what the drafters of the 10(6) mandate likely intended, assessing the environmental effects of trade and investment flows in the integrated NAFTA region.

Broadening the *focus* means considering not just environmental but also social and economic impacts. However, it is clear that the mandate of the CEC would be over-stepped if analysis was brought to bear on problems that were *purely* social or economic, with no environmental component. The starting point for any analysis should be environmental, but that could lead to linkages that are economic and social in nature, given the inter-dependent nature of the three policy spheres. The suggestion, then, is that in such cases there should be no line that prevents such a pursuit beyond the environmental to consider linked social and economic impacts.

The symposia process between 2000 and 2008 served a critically valuable purpose in the overall effort, engaging the public and producing a raft of relevant research. But interest in the process has faded somewhat, certainly in part because it is not clear how the results of the research papers will actually feed into policy-relevant processes. The symposia need to be more strategically employed. The strengths of the process have been its ability to raise awareness among the various stakeholder groups and, perhaps more important, to allow the public to serve essentially as the eyes and ears of the CEC, highlighting issues of concern. It is worth noting that the sectoral and specific nature of the research has been one of its strengths and should not be changed. The thematic approach to the symposia themselves has also been valuable, but should include room for new issues not related to a pre-chosen theme.

In most cases, however, the level of analysis possible in the research papers considered in the symposia was not sufficient to exhaust the CEC's responsibility to consider the effects in question. The issues raised by the symposium process could be usefully followed up by more dedicated efforts at the Secretariat level, either as Article 13 reports, or as part of the ongoing efforts to refine the framework through case studies. The symposium papers also need to be more closely aligned with the goal of testing and improving the framework, both as an end in itself and as a measure of quality control.

A broader, more strategic focus for the CEC's work in this area would arguably make it more policy-relevant and more interesting both to the general public and to the policy makers who ultimately serve as its primary audience. It is noteworthy that the CEC's most recent strategic plan includes two priorities that cannot be broached by a narrow focus, but could be part of a broader approach to ensuring mutual supportiveness of trade and environment:¹

- Climate change and the low-carbon economy
- Greening the economy of North America

It is noted that there seems to be some promise of more meaningful cooperation with the FTC in the near future. Such a possibility is worth pursuing, both because it would mean a more meaningful fulfilment of the CEC's Article 10(6) mandate, but more fundamentally because it would allow both the FTC and the CEC to more effectively explore policy options that integrate both environment and trade elements. This would potentially allow expertise from both

¹ CEC (2010).

communities to be focused on issues where the two intersect, such as the assessment of the environmental impacts of trade.

In the end, the body of work coordinated by the CEC has been of unquestionable value in better understanding the effects of NAFTA on the North American environment, and in deepening the understanding of trade and environment linkages more broadly. But to progress beyond its current level of achievement, to re-engage the public on the issues of trade and environment, and to continue to fulfill its mandate under the NAAEC, this report argues that the current and historical practice needs to change.

To that end, in the next phase of work under this project, the CEC-appointed Panel of Experts (PoE) is charged with examining such opportunities to enhance the value of the CEC's ongoing consideration of environmental effects of NAFTA and integration of the North American economies. The PoE is expected to delineate key sectors and cross-sectoral issues facing North America today with the greatest potential for environmental and trade policy impacts. Similarly, the POE will describe how such work could be accomplished in a focussed and practicable manner, and tempered by the capacity of the CEC and its partners.

Introduction

The context for the present analysis is founded in the mandate of the Commission for Environmental Cooperation (CEC), described in the North American Agreement on Environmental Cooperation (NAAEC). Article 10(6)(d) of the NAAEC charges the Council (normally comprised of the Parties' appointed cabinet-level environmental officials) to cooperate with the NAFTA Free Trade Commission (FTC) to achieve the environmental goals and objectives of the NAFTA by "considering on an ongoing basis the environmental effects of the NAFTA."

As described in some detail below the CEC has, since its inception, maintained an active program of work in an effort to fulfil this mandate. It has more recently decided to critically assess the success of this body of work, in an effort to craft a future workplan that may better respond to the so-called 10(6) mandate. As part of that effort the CEC has convened an *ad hoc* Panel of Experts (PoE) to consider what has been learned to date about the environmental effects of NAFTA, and to assess the current process for conducting assessments and recommend how to improve the quality for the assessments going forward.

The present paper is the first of at least two necessary inputs for the PoE and the Secretariat in their deliberations. It surveys the existing and historical practice of the CEC in considering the environmental impacts of NAFTA and offers an assessment of that practice. Another piece of the puzzle is a set of recommendations based on this analysis, describing how the CEC might better fulfil the 10(6) mandate going forward.

This paper is structured as follows: first, it explores the context, asking what the CEC's efforts should be accomplishing, based on the mandate given to it under Article 10(6)(d) of the NAAEC, the shape of best practice, and the responses to a wide ranging set of stakeholder interviews (see Annex II for a list of interviewees). Then it tries to evaluate whether the current and historical practice has delivered. This section starts by cataloguing the existing effort to date, including a brief survey of the main lessons learned on trade and environment. It then offers a survey of the results, based on the interviews and on a complete reading of the research produced to date as part of the process (see Annex I for a list of CEC research surveyed). It assesses both the strengths and the weaknesses of the current approach. The paper concludes by offering recommendations for better fulfilling the CEC's mandate to consider, on an ongoing basis, the environmental effects of the NAFTA.

What should the CEC's efforts be accomplishing?

Unbundling the 10(6) mandate

It is worth spending some time to unpackage the current mandate that drives this analysis. There are at least four elements to Article 10(6)(d) that bear further discussion:

- The definition of NAFTA
- The direction to “consider” NAFTA’s effects
- The “ongoing basis” of the mandate
- The chapeau direction to cooperate with the NAFTA FTC

The definition of NAFTA: In the early days of NAFTA the focus was on the impacts of trade *liberalization*, including the scale, structural, technology, product and regulatory impacts.² As such, the 10(6)(d) mandate was typically applied so as to capture the effects of the changes wrought by the NAFTA. In 2011 that focus is no longer entirely appropriate, given the fact that the basic efforts to liberalize trade among the NAFTA Parties began some 15 years ago. The more meaningful focus now is on *integration*: the impacts of trade and investment flows and policy (including institutions) in the integrated NAFTA region. What environmental impacts do they have, and what sorts of policies might be appropriate to enhance the positive and reduce the negative?

A narrow definition of Article 10(6)(d) practiced today would see the CEC construct a baseline case--*North America without NAFTA*—and compare the current reality to that, identifying the key environmental variances. That is, one could interpret “NAFTA” as the legal agreement in force, and ask what environmental effects have materialized as a result of adopting that agreement in 1994.

That would clearly be a difficult exercise, and of limited value. Constructing such a baseline 15 or more years out would be impossible to do with any meaningful accuracy.³ And in the end, what the drafters arguably intended was that Council consider the environmental effects of North American economic integration under the NAFTA regime. That is, they were interested in the effects of the trade and investment flows that would take place under NAFTA, and in the effects of NAFTA-region trade and investment policy (to the extent that any such tri-national policy actually materialized). “NAFTA”, under this definition, means: the trade and investment flows that occur in the NAFTA region, and any NAFTA-level trade and investment policies. Such a line of inquiry does not demand that the baseline case be described; it demands that the environmental effects of current practice in the NAFTA region be examined, *without the need to compare that to what would have transpired in an alternate NAFTA-free reality*.

² See, for example, USTR (1997); DFAIT (1997); Weintraub (1997); US Congress (1997); Mexican Government (1997); Kouparitsas (1996); DeJanvry (1996); Hinojosa-Ojeda *et al.* (1996).

³ Barg *et al.* (2008) cite establishing baselines and counterfactuals as one of the most difficult conceptual issues with *ex post* assessment.

An interpretation along these lines is not only more practical, but it likely gets to the heart of what the drafters intended. It does the Parties a disservice to suggest that they intended in perpetuity to demand an account of how the NAFTA treaty has influenced the environment, such an account being for all intents and purposes increasingly impossible to deliver.

From a practitioner's point of view a broader approach may also make sense. As early as 1996 the members of the CEC's NAFTA Effects Advisory Group warned that a narrow focus on the effects of liberalization might be overly-ambitious. In the conclusions from their April 1996 workshop, focused on advice in building a framework for assessment, they noted:

*"... as the North American economy becomes more integrated, it becomes increasingly difficult to isolate individual events and factors as causes of environmental degradation or improvement, particularly as governments attempt to integrate environmental concerns into policy formulation."*⁴

The CEC's analytical framework for assessing environmental effects of trade (CEC, 1999b) takes a somewhat broad definition of NAFTA, to include both rules changes and the associated trilateral institutions (some 50 of them at the time the framework was completed), and the two side agreements. It does not, however, include NAFTA trade and investment flows; these are seen as driven by the NAFTA as defined, but are not part of it.⁵ The emphasis is very much on isolating those trade and investment flows, and the associated impacts, that are the result of NAFTA from those that are not: *"This framework distinguishes clearly between environmental processes that are associated with NAFTA and those that are not."*⁶

A broader definition starts with the assumption that, 15 years into the process, *any* flows of trade and investment in the integrated NAFTA region are to some significant extent affected by the fact of economic integration. It adopts a pragmatic perspective in conceding that isolation of NAFTA-induced effects is in most cases impossible. And it depends on the assumption that *any* significant environmental effects of trade and investment flows in the NAFTA region are of interest to the 10(6)(d) mandate and the underlying objectives of the CEC: to promote sustainable development based on cooperation and mutually supportive environmental and economic policies.⁷

"Considering" NAFTA's effects: The word "consider" is arguably a careful choice. Council is not directed to undertake an *assessment* of the environmental effects of NAFTA, but rather to *consider* those effects. The difference is instructive. An *assessment* would demand analysis geared toward quantifying the impacts of NAFTA relative to some hypothetical case, an

⁴ CEC (1999a: Appendix A).

⁵ CEC (1999b: 27). The second step in the process is to consider NAFTA's rules and institutions [the definition of NAFTA] *and their trade and transborder investment effects*. (emphasis added).

⁶ *Ibid.* P. 26.

⁷ NAAEC, Article 10(b).

approach more suited to meeting the narrow definition described above. *Considering* NAFTA's environmental impacts, on the other hand, is a more flexible exercise that can:

- Be less comprehensive, focusing on those areas of particular importance from an environmental or policy perspective.
- Be descriptive without the need to be quantitative.

Both of these elements of the task need to be carried out with enough rigour to satisfy a key requirement: to deliver an understanding of the environmental effects of trade and investment flows and policy that is robust enough to give NAFTA policy-makers a sound basis for identifying and undertaking any necessary corrective measures. This is the litmus test that distinguishes between a potentially shallow execution of the mandate to “consider” and one that serves its intended purpose.

Clearly, assessment of the environmental impacts of NAFTA falls squarely within the boundaries of the mandate to consider environmental effects. In fact a good assessment lays the foundation for such consideration. But at the end of the day, the former is a sub-set of the latter.

The ongoing basis: The direction to consider NAFTA's effects on an ongoing basis has at least two important implications. First, it gives us assurance that the Parties wanted the exercise to continue; that it was not seen as a one-off or temporary exercise. Second, it underscores the argument for a broad interpretation of the NAFTA definition since, as argued above, it is increasingly impossible to deliver a meaningful impact assessment of the agreement itself on an ongoing basis.

Cooperation with the NAFTA FTC: Article 10(6) lays out a number of ways in which the Council should cooperate with the FTC in an effort to achieve the environmental goals and objectives of the NAFTA. Those goals are not spelled out in the NAFTA Article 102: Objectives. But they can be elucidated from NAFTA's preamble, in which the Parties express their resolve to, among other things, promote sustainable development, and to strengthen the development and enforcement of environment laws and regulations.

The Parties, in drafting this article, presumably made specific reference to cooperation with the FTC because they saw potentially valuable roles for the Council on environmental matters that were relevant to the FTC's mandate in supervising the implementation of NAFTA and overseeing its further elaboration. As well as the mandate on environmental effects, the Council is also instructed to act as a point of enquiry for the FTC on environmental matters, to provide assistance in consultations under Article 1114 (prohibiting the strategic lowering of environmental standards), to contribute to preventing environment-related trade disputes and to otherwise assist the FTC on environmental matters.

The Parties may also have foreseen the value of integrating the work of the FTC and the CEC. Certainly they reiterated this sentiment at their 2009 NAFTA FTC meeting, where they declared:

“in order to ensure that the benefits of our economic relationship are widely shared and sustainable, we agreed to seek to strengthen the relationship between the FTC and the North American Commission for Environmental Cooperation (CEC).”⁸ In that context it is worth noting that the 10(6)(d) mandate is not simply to offer assistance to the FTC but to “cooperate with” the FTC in considering the environmental effects of trade. This suggests an important role for the FTC as more than simply consumer of information produced by the CEC, but as a partner in generating such information. At a minimum it suggests that the FTC should help ensure that the information generated is relevant to its needs.

The shape of best practice

The argument was made above that the mandate of the CEC was broader than impact assessment. Yet it was also argued that impact assessment can provide a solid foundation for the consideration of environmental impacts. Moreover, as noted below, much of the work to date has focused on impact assessment of sorts. As such, in seeking to establish a benchmark for the CEC’s environmental effects work it makes sense to ask what lessons we can draw from the practice of environmental impact assessment more broadly, and specifically from environmental/sustainability impact assessment of trade agreements.

At the outset it is important to note that there has been much less written about assessing the environmental impacts of trade than about the practice of environmental impact assessment more broadly. And there has been less again written about the *ex post* assessment of trade’s impacts on the environment, most assessments to date having been conducted in advance of the entry into force of the treaty under analysis.⁹

Some notable exceptions do exist. For example in the US, the Government Accountability Office was tasked by the Senate Finance Committee with assessing four FTAs (Singapore, Jordan, Morocco and Chile) against their objectives and legal commitments, including those related to the environment.¹⁰ The resulting exercise thus contained an *ex post* assessment of the environmental effectiveness of the four agreements. The methodology was a thorough reading of the agreements and their associated environmental cooperation agreements (ECAs), and extensive interviews with governmental and non-governmental representatives in the US and abroad to get a sense of progress. While the exercise was valuable in highlighting areas of obvious success and shortcoming, it was limited by a lack of agreed standards (what constitutes “high levels of environmental protection?”), the absence of baseline and monitoring efforts to assess enforcement of the environmental provisions of the agreements or the efforts undertaken as part of the ECAs. The analysts also had difficulty deciding whether to attribute observed changes to the agreements under examination, or even to the broader process of integration with the US (in the end the GAO simply reported diverging opinions on that

⁸ FTC (2009).

⁹ For a comparative analysis of various government-led *ex ante* approaches and an assessment of their effectiveness, see OECD (2006: Sec. II).

¹⁰ GAO (2009).

question). In spite of these limitations, however, the effort yielded a wealth of valuable information, and stands as a testament to the potential (and limitations) of a qualitative survey methodology.

Another example of *ex post* analysis comes from the United Nations Environment Program, which conducted developing country studies in the late 1990s and early 2000s to assess the impacts of trade liberalization on the environment. Since examples of such *ex post* assessment are rare it bears surveying the results. Of the first round of six studies Only half can really be considered good practice, as the other half took little care to establish links to trade or trade policies at all.¹¹ The Chilean study looked at the impacts of macroeconomic reforms on the mining sector, and disaggregated the resulting environmental impacts into scale, technology, product and composition effects, contending in the end that the overall result was environmentally negative. The studies from Bangladesh and Uganda looked at the environmental impacts of increased exports of shrimp and fish respectively, tracing both back to economic policy roots. These three studies provided good policy recommendations (almost exclusively environmental policy) without the need to quantify the link from trade and trade liberalization through to environmental damage.

A subsequent round of six similar country projects with the same aims was carried out in 2002.¹² The methodology was more explicit in this case. Again the focus was on particularly important and relevant sectors in each country – an approach that has the advantage of being more manageable, particularly where data is scarce, but the disadvantage of being unable to deliver insight on economy-wide effects. It is worth reproducing the criteria used for sector selection:

- The sector is important to the national economy, and in particular in its contribution to export revenues.
- The sector relates directly or indirectly to major environmental media and natural resources.
- The sector relates directly or indirectly to important issues of equity and social well-being.
- The sector furnishes strategic natural resources (such as a certain foodstuff) to a large proportion of the population.
- The sector is subject to changes in economic rules induced by trade-related policies.
- The sector is significant in terms of trade flows, both in volume and financially, and should be experiencing changes in trade flows.
- There is a presumption of important sustainability effects due to trade-related policies.

¹¹ See UNEP (1999) for a synthesis report, and the individual detailed studies on which it is based. The Philippine study is an analysis of the use of market based instruments to save a watershed resource; the Romanian study looks at pricing instruments as demand side tools for water management; the Indian study explores the use of MBIs to reduce automobile pollution (though it does start by arguing that trade liberalization has increased incomes and therefore automobile use).

¹² UNEP (2002). The countries involved were Argentina, China, Ecuador, Nigeria, Senegal and Tanzania.

The analysis was to follow a three-stage process. The first stage involved a preliminary qualitative assessment, loosely based on the methodology elaborated in OECD (1994), assessing positive, negative or neutral environmental, social and economic impacts in five categories: product effects, technology effects, scale effects, structural effects and regulatory effects. The second step involved modelling the identified impacts, using a variety of types of models (except for the case of regulatory impacts) and cognizant of the ever-present data limitations.¹³ In fact, however, each study used more or less its own approach, and few closely followed the prescribed methodology. Yet, perhaps because the scope was narrowed to the sectoral level, the results of many of these studies are quite useful, and form the basis for sound policy recommendations.

As noted above, there has also been a great deal of practice and writing on environmental impact assessment more generally. When combined with the thinner literature on assessing environmental impacts of trade, there are a number of important themes that emerge from the literature as consensus that has some value for characterizing best practice in the NAFTA context of *ex post* assessment:

- In general, the analysis will need to describe a causal chain that runs from trade policy to economic impacts, and from those to environmental and social impacts. It is worth noting that the CEC framework explicitly allows for that chain to be picked up anywhere along the way.¹⁴ So, for example, the analysis could begin at environmental impacts of interest, and trace them back through economic impacts and possible trade policy drivers.
- There will always be a tension between the ideal study, which would be exhaustively comprehensive, and the available resources with which to carry out any analysis. As such, the assessment should focus on those areas of greatest relevance.¹⁵ What is most relevant depends on the motives for the analysis, but clearly those causal chains that result in the most serious environmental damage or social disruption would be natural candidates. How to identify those lines of analysis *before* having done in-depth study is a challenge.
- A related lesson from existing practice is to focus on those areas of study that have the most direct policy relevance.¹⁶ In the end the CEC's mandate is to produce analysis that will be of use to the FTC, and will further the achievement of the CEC's mandate, which is oriented to achieving sustainable development.
- Some of the most policy-useful information comes from assessment aimed at a sectoral and often sub-regional level. OECD (2000: Section III) offers a number of lessons in sectoral assessment, and some of the best research generated by the CEC's assessment

¹³ See UNEP (2001).

¹⁴ CEC (1999b: 27).

¹⁵ Gibson and Walker (2001) describe this as being "efficient". This (along with data limitations) was the thinking that underlay UNEP's (2002) sectoral approach.

¹⁶ This was a point of guidance expressed by several commentators on the CEC practice in particular. See CEC (1999a:46) (the results of the CEC workshop "*Building a Framework for Assessing NAFTA Effects.*") and Vaughan and Block (2002).

effort were sectoral analyses. This is not a general condition of usefulness, of course. Regulatory impacts, for example, cannot be narrowed in sectoral or geographic scope.

- Successful assessment processes must intensively involve the public, both as contributors to the process and as recipients of the results of the process.¹⁷ Hand in hand with this goes a requirement for transparency, without which it is impossible for participants to contribute to their full potential. Kirkpatrick and George (2006), speaking from their experience with comprehensive government-led *ex ante* assessment of trade agreements, caution that full public involvement is a difficult challenge, but still end by avowing its critical importance to a successful outcome.
- Data limitations and conceptual difficulties will mean that a mix of methodologies will probably be needed; no single method will suffice.¹⁸ Quantitative analysis is a powerful tool but depends on availability of data and parameters that may not be easily specified, and the valuation of inherently difficult impacts such as biodiversity loss. While computable general equilibrium models are most often used there may also be space for partial equilibrium analysis to offer insights into specific interactions and sensitivities.¹⁹ Where the assessment seeks to uncover the impacts of institutions (as does the CEC framework) and trade policies such as intellectual property rights, investment law, standards, government procurement, subsidies and other non-tariff policies, qualitative analysis is probably more appropriate.²⁰ Combinations of techniques are also used; Kessler and Abaza (2006) note that in UNEP's experience with *ex post* assessment, "Qualitative techniques can be very useful in generating broad insights, which can then be supported by more quantitative data on specific issues, if available from official sources."
- Some analysts argue that the proper focus for analysis is sustainable development impacts, rather than environmental impacts.²¹ EU-level environmental reviews have been consistently framed as *sustainability impact assessments*, which consider economic, environmental, social and process impacts.²² Gibson and Walker (2001) argue the need to consider synergistic effects and interactions among the different lines of impact, to arrive at an accurate understanding of final impact.

¹⁷ Gibson and Walker (2001); Gallagher, Ackerman and Ney (2001); Kessler and Abaza (2006); Vaughan and Block (2002).

¹⁸ UNEP (2002:21ff)

¹⁹ Gallagher and Ackerman (2000).

²⁰ UNEP (2001) recommends a qualitative approach to assessing regulatory impacts.

²¹ See, for example, Perrin (2000).

²² Clive and Kirkpatrick (2008).

Are we there yet? An assessment

The current approach

As noted above, the CEC has engaged in a comprehensive effort to date to fulfil the 10(6) mandate – to consider the environmental effects of NAFTA. At the outset the Commission led a process that created an analytical framework designed to guide the practice of assessment by governments and non-governmental actors.²³ The process was led by a team of consultants working closely with the Secretariat, drawing from the existing practice of a number of other institutions, notably the OECD, and taking advantage of both peer-review and public consultation. The final result provides in the first instance a conceptual framework that describes six potential points of linkage between NAFTA (consisting of trade rules and associated institutions) and environmental outcomes, and four channels, or processes, by which the linkage might operate. It also provides extensive methodological guidance to those seeking to apply the framework. The final version also contains a preliminary list of indicators of environmental impacts.

The final framework was tested by its developers in a set of four studies (appended to the framework document as annexes), looking at:

- The environmental potential and effects of the various NAFTA institutions
- NAFTA impacts in the Mexican maize sector
- NAFTA impacts on cattle feedlots in the U.S. and Canada
- NAFTA impacts on electricity in all three NAFTA countries

It was expected that the framework would be further tested by a variety of researchers in response to a call for papers at a public symposium convened after the completion of the framework. The idea was for academic, NGO, IGO and private sector researchers to scope out what they saw as key NAFTA environmental effects in the same way as had the initial case studies – by defining a particular sector or range of impacts and tracing the chain of effects from the NAFTA-related policy change to final environmental impacts. It was hoped that the application of the framework would not only produce useful information on the environmental effects of NAFTA, but would also provide a basis for improving and fine tuning the framework itself, by turning up the lessons of application in practice. The first symposium was convened in Washington in late 2000, and was followed by three others:

- 2003, Mexico City: Second Symposium, considering agriculture, energy and indigenous people.
- 2005, Montreal: Third Symposium, considering economic growth and investment.
- 2008, Phoenix: Fourth Symposium, considering trade in services.

²³ CEC (1999b).

The format for all four symposia was roughly the same. The CEC put out a call for papers, and offered financial support for the production of the papers. Authors were also supported to come to the symposium to present the final results, which would be discussed as part of thematically grouped panels. Applicants were screened by an *ad hoc* group of experts on the basis of their proposals, how well they fit any thematic focus, and with a view to regional balance, to arrive at the final list of supported research. For the last three meetings, associated events were planned in the days surrounding the actual symposium. At the fourth symposium which focused on services, for example, an event was convened the previous day (co-sponsored by the Arizona-based North American Center for Transborder Studies) to examine the prospects for greening North America's trade corridors.

Another part of the effort to consider the environmental effects of NAFTA has come in the form of special reports commissioned and issued by the CEC Secretariat as part of its mandate under Article 13 of the NAAEC (Secretariat Reports): "The Secretariat may prepare a report for the Council on any matter within the scope of the annual program." As the annual program includes the ongoing consideration of the environmental effects of NAFTA, Article 13 in effect provides another channel by which to fulfil the 10(6) mandate. Three of the reports to date are of particular interest:

- Maize and biodiversity:²⁴ an inquiry into the environmental, human health and socio-cultural implications of the introduction and cultivation of transgenic maize varieties in Mexico. This was rooted in trade impacts assessment since the origin of the transgenic corn in question was imports from the US.
- Electricity:²⁵ a discussion of the environmental and health implications of liberalized trade in electricity, in the context of a rapidly changing regulatory structure in electricity markets. This was an attempt to proactively capture the positive potential of policy and regulatory instruments in this sector, to avoid potential environment-related trade disputes.
- Transportation:²⁶ a study in how the NAFTA-wide freight transportation system might reduce its carbon dioxide emissions over the coming decades, through a mix of policies aimed at efficiency, investment in infrastructure and monitoring, and institutional innovation. This study follows on earlier CEC work that identified environmental impacts of concern in NAFTA transport corridors, and on transport-related work commissioned for the symposia.²⁷

²⁴ CEC (2004).

²⁵ CEC (2002a).

²⁶ CEC (2011).

²⁷ ICF Consulting (2001); Fernandez (2008); Sierra Club and Holbrook-White (2000). Transport was also one of the original case studies included with the framework developed by the Secretariat for assessing NAFTA's environmental effects.

Survey of results: A critical assessment

The effort to date, as described above, comprises a considerable body of work in pursuit of better understanding NAFTA's environmental effects. Some 50 commissioned research papers were produced for the four Symposia (see Annex I), and the elaboration of the analytical framework was a complex multi-year effort. What follows is a critical assessment of the whole effort, based on a reading of all the products of the symposia and of associated documents (such as those synthesizing the lessons learned). A wide-ranging set of interviews was also carried out to help inform this assessment, drawing on stakeholders in government, academia, NGOs and IGOs, all of which have had involvement—sometimes extensive—in the CEC's work in this area.

General lessons learned on trade and environment

There have been several excellent surveys of the lessons learned as a result of the efforts described above. Vaughan and Block (2002) produced an excellent survey of this type after the first symposium. More recently the Secretariat commissioned such a survey as a background paper for a JPAC-convened experts' roundtable, held in parallel with the fourth symposium, that aimed to assess the results of the first three symposia (CEC 2008). There have also been other surveys, not produced as part of the CEC process, such as Carpentier (2006).

It would make little sense to cover the same ground already covered by those syntheses, at least in any depth. But to set the context it is probably valuable to at least reiterate some of the main results gleaned from the body of work that was produced for the four symposia. What follows is drawn from the surveys cited above, as well as from an independent reading of the 50 research papers.

At a general level, the answer to what effects the NAFTA has had on the environment is: *it depends*. That is not as shallow an answer as it sounds. The various studies found differing sorts of impact, both positive and negative, depending on the sector, the firm characteristics and the associated institutions of governance and regulatory oversight.

Again at a general level, the worst pre-NAFTA fears did not materialize.²⁸ The pollution haven effect was hard to detect,²⁹ though it was asserted to exist in specific cases, such as the increased hazardous waste management activity in Ontario and Quebec.³⁰ Some studies that found industrial relocation concluded it was primarily attributable to non-environmental factors such as wage levels, as in the case of the stone-washed garment industry in El Paso.³¹ And the one study that set out to actually detect Article 11-driven regulatory chill could not do so.³²

That said, the studies did find some negative environmental impacts from NAFTA. The body of work on agriculture, for example, made it clear that there could be undesirable environmental

²⁸ See, for example, Dyer and Yunez-Nayude (2003), Stern (2005); Kornylak (2000); Schatan (2000).

²⁹ Vaughan and Block (2002).

³⁰ Jacott, Reed and Winfield (2000).

³¹ Abel and Phillips (2000).

³² Fredrickson and Milliment (2000).

impacts in such areas as biodiversity and local pollution from waste management, though non-trade related variables often played a more significant role. Two cases of negative impacts directly attributable to trade flows under NAFTA were identified: trade-related invasive species capable of impacting agricultural production, and increased transport-related emissions of airbourne pollutants (though the latter study was actually looking for, and found, positive impacts of regulation).³³ One of the important general findings was that trade liberalization can act to intensify the impacts of existing policy and regulatory weaknesses. Peralta (2008), for example, finds that the solid urban waste problems increased in Mexican border states post-NAFTA, but that NAFTA's contribution was indirect—through population increase and change in composition of goods produced—while poor standards and enforcement practices that predated NAFTA were the root problem.

Positive environmental impacts were also identified in some sectors. The number of companies making environmental investments tripled from 1994 to 2002 (though the investment was concentrated in large enterprises with an export orientation, while the environmental weaknesses of SMEs actually worsened).³⁴ Trade-induced environmental improvements were also identified in the electricity sector, the result of accelerated capital turnover.³⁵ Environmental standards and enforcement in several areas were strengthened, particularly in Mexico, though the consistent message was that this trend had not gone far enough. In the run up to the NAFTA the Mexican Federal government created the environmental monitoring agency PROFEPA in 1992, and in 1994 overhauled the General Law on environment and created a database on pollution and environmental violations.³⁶

Some regulatory impacts were identified. NAFTA's Chapter 11 was cited in one study as having limited impacts on environmental regulators, though it was predicted that these had more or less played out as of 2006.³⁷ Others had more serious concerns about Chapter 11's final impacts, citing its potential for regulatory chill.³⁸ In a specific example, Chapter 11 and NAFTA's provisions on non-tariff measures were cited as crowding out the policy space needed to promote sustainable forestry Chihuahua.³⁹ And NAFTA's chapter on energy trade was cited as an obstacle—or, at best, not a help—to any domestic efforts to reduce fossil fuel subsidies.⁴⁰

In the end, the most sweeping pre-NAFTA predictions from both free trade advocates and critics seem to have not played out. Advocates had promised a broad transformative change that would see increased environmental investments by NAFTA firms, but in fact the effect was limited to larger export-oriented firms in specific sectors. Ferrier (2008), however, found anecdotal evidence of an upward trend in environmental performance in some sectors in

³³ Fernandez (2008); Perrault *et al.* (2003).

³⁴ Domínguez Villalobos and Brown-Grossman (2005); Wisner and Epstein (2005).

³⁵ Plagiannakos (2000).

³⁶ Wisner and Epstein (2005).

³⁷ Gaines (2005). Note that several new environmentally-related cases have arisen since that time.

³⁸ Mann (2000).

³⁹ Guerrero *et al.* (2000).

⁴⁰ Roff *et al.*

Mexico, as multinationals bring their own standards with their investments. Critics had forecast an exodus of firms to low-standard jurisdictions to avoid costly regulations, but Carpentier (2006) argues on the basis of the studies that this materialized only to a limited extent in specific sectors.⁴¹ One area where the critics seem to have been right was the prediction of negative scale effects, which in several sectors were found to overwhelm technology and composition effects of trade liberalization.⁴² That is, the negative environmental impacts of increases in the scale of production had a greater negative impact than the positive effects of the greening of technology, or the shifting away from polluting forms of activity. Vilas-Ghiso and Liverman (2008) found this to be the case, for example, in Mexican agriculture, where the composition and technique effects drove down the use of chemical inputs per hectare, but the scale effect overwhelmed those impacts. Similarly, Schatan (2000) found the same dynamic in Mexico's manufacturing exports; though the composition of that export stream had grown less pollution intensive since NAFTA, its increases in scale wiped out those positive effects.

The take home message from the body of work commissioned by the CEC was that trade and trade liberalization are *potentially useful* but *not sufficient* drivers for environmental and social improvements, and if the proper supporting institutions are not in place they can in fact drive negative results. Final impacts in almost all cases were mediated by the strength of the relevant environmental policies, regulatory institutions and enforcement capacity. Study after study noted the need for environmental regulations to be strengthened and harmonized in tandem with economic integration in sectors such as feedlots, transportation, cement, electricity.⁴³ Schatan (2000) found that environmental investment by firms depended significantly on sector and firm characteristics such as the age of the operation, the size of the multinational owners of the operation, and the distance down the supply chain from the final producers. This heterogeneity of results argues strongly for in-depth sector-specific analysis, if useful policy recommendations are to be derived (though as noted above this direction does not apply generally, the case of regulatory impacts being a prime example).

Apart from the lessons gleaned on the environmental effects of NAFTA, the research to date also argues the need for better data, and comparable data among the NAFTA countries; data problems meant that some studies were simply unable to test their central hypotheses.⁴⁴ For example, Jacott, Reed and Winfield (2000) attempt to assess the impacts of NAFTA on the generation, management and shipment of industrial hazardous waste, but complain that

“Reliable data on waste generation in Canada and Mexico are extremely limited, and the reliability of the data regarding transboundary waste movements among the three countries has been seriously questioned. Tracking transboundary waste

⁴¹ Carpentier (2006).

⁴² Vaughan and Block (2002).

⁴³ Speir *et al.* (2003); Cloutier *et al.*; Jacott *et al.* (2003); Plagiannakos (2000); Sierra Club and Holbrook-White (2000).

⁴⁴ See Chomo and Ferrantino (2000).

*movements from 'cradle to grave,' when the 'cradle' is in one country and the 'grave' in another, is almost impossible.*⁴⁵

Similarly, Poynter and Holbroke-White (2000) attempt to assess the environmental impacts of transportation-related emissions, but are unable to find reliable data on environmental indicators:

*"Despite approximately three months of intense efforts to locate pertinent data on environmental indicators 'nationally or internationally recognized for their importance,' unfettered access to the Internet, proximity to a major research university, as well as a technical advisory group of transportation professionals, data could not always be located or extracted."*⁴⁶

These sorts of complaints are repeated in many of the studies. Clearly the lack of data, and lack of coordinated standards for reporting, means a difficulty in reliably assessing the environmental impacts of NAFTA. The CEC has been working successfully to implement common reporting standards in some areas, but still has far to go.

The lessons from the research and process to date also testify to the essential value of public participation in the assessment process – a fundamental lesson which, as noted above, is repeated often in the wider literature.⁴⁷

Strengths of the current approach

It is clear from the survey above, and is corroborated by the interviews undertaken for this report, that the body of work undertaken by the CEC has raised the profile of the trade and environment interface in important ways. The extensive research effort that was the symposium papers irrefutably establishes that there are significant linkages, and that policymakers need to be cognizant of those linkages, creating the proper regulatory and institutional environment in order that trade and trade liberalization may play their potential positive role in improving environmental and social conditions. A number of examples of negative linkages were cited above – the result of a failure to anticipate and address those institutional needs.

The advantages of the symposium approach include that it managed to engage the public in the debate, though that seems to have been true to a greater extent earlier in the process, and several commentators noted the need for much wider public involvement and awareness raising. Others noted the value of the process in allowing a diversity of approaches to bear on the question of NAFTA's environmental effects, creating a sort of testing ground for analytical approaches. Particularly in the early years where the CEC was, along with the OECD, a pioneer in the area of trade and environment impacts, this sort of flexibility had real value.

⁴⁵ CEC (2002b:208).

⁴⁶ *Ibid.*, p. 304.

⁴⁷ In the CEC papers see, for example, the arguments of Martínez Meléndez (2008).

The symposium approach also had value in enlisting the public to identify key areas of focus for the assessment effort. That is, the wide call for public input brought out contributors that were engaged in their own fields of expertise, to identify key areas of impact that may not have been obvious even with considerable in-depth continent-wide economic and environmental analysis. This seems to have been an efficient way to flag key issues, and to generate at least initial analysis on each – in some cases excellent analysis. The symposium process produced a number of top notch papers advancing the state of knowledge on trade’s environmental effects, though as noted below the quality and utility of those papers varied considerably.

The analytical framework and associated guidance that the CEC produced are significant contributions to the field of assessing the environmental effects of trade and trade liberalization. A number of commentators praised this work for its value as a guiding framework for assessment, and those papers that did utilize the framework seemed consistently more useful as contributions to the analysis of NAFTA’s environmental effects.

Weaknesses of the current approach

The papers produced for the four symposia are of considerably varying quality. As noted above, there are a number of them that are exceptional contributions to understanding the environmental effects of NAFTA, and to understanding trade and environment linkages more generally. On the other hand, too many of the papers suffer from serious methodological and analytical problems.

The majority of the papers failed to use the CEC’s analytical framework, and it appears from a reading of those papers that this was not an informed decision; the authors seem to have simply not read it. The result is that, first, the papers failed to contribute to the refinement of the framework as initially intended. And second, the value of the papers suffered as a result. While there were strong papers that worked outside the framework, those that chose to do so include all of the weakest, by our reading.

But working outside the CEC framework was not the only problem; it is possible to do so and still pursue a sound methodological approach. A number of papers had fundamental flaws, choosing to run models that required unavailable data, surveying historical experience on a time scale that makes NAFTA an unimportant variable, attempting to prove hypotheses that depend on clearly mistaken assumptions, not bothering to establish or even discuss links between observed effects and NAFTA.

Some commentators felt that the varying quality might be an inescapable result of the symposium approach. They argued that the need to fill a symposium agenda with papers on specific themes, respecting the need for regional representation, and particularly in the face of flagging public interest in the subject area, meant that the Secretariat was sometimes forced to accept and support proposals that would not have passed a test based on merit alone; there simply were not enough quality proposals forthcoming.

Another weakness cited by a number of commentators was the lack of follow up on the symposia results. That is, after the papers were presented and discussed, the process more or less ended. Those papers that were of high quality, and which found effects—both positive and negative—that should have been of interest to NAFTA policy makers, were published and not pursued further. Several commentators argued that the symposia, rather than marking this sort of end of the road, should have been the *beginning* of a longer term effort to follow up in depth on the areas of interest, doing more detailed study (perhaps in the form of Article 13 reports, following the current example of transportation) and seeking high-level dialogue along the lines envisioned in Article 10(6) of the NAAEC. They argued for a more strategic approach to extracting value from the symposium papers and discussions, bemoaning the fact that a number of good focused recommendations were simply left hanging.

This weakness is related to another broader challenge – the translating of the research and analysis into policy impact. Many commentators noted that there seemed to be no visible policy changes resulting from all the excellent work carried out by the CEC. Institutionally, they observed that the brief period of high-level meetings of trade and environmental officials had now lapsed into a working level engagement that had clear value, but which lacked the ability to consider the issues raised by the symposium research and use them as a basis to build institutions and capacity to make trade and environment more mutually supportive. And they noted that the line ministries involved—transport, agriculture, industry, tourism, for example—were even less integrated into the process, even though they were in many cases the most relevant audiences for much of the detailed sectoral work.

Some suggested that the initial buzz of intellectual excitement on the trade-environment linkage may have been dampened precisely by the perceived lack of policy traction achieved by the CEC-commissioned research (though many also posited that interest may have waned as we found that the reality of NAFTA’s effects was not as exciting as it had been painted by either side of the debate).

With respect to the CEC framework, while it stands as an extremely valuable analytical tool it might still be improved. The fact that many of the papers did not use the framework did not help in this regard, as noted above. But neither was there a dedicated process for learning from those papers that did use the framework, and revising it as a result. Some commentators were constructively critical of the existing framework, noting for example that it studiously avoids considering any non-environmental impacts, and arguing that a broader sustainable development approach is necessary. Others noted that while the framework allows for a clear understanding of the drivers for environmental effects, it treats them as equal. This contradicts what we have learned above the overbearing magnitude of the scale effect relative to other channels for impact. Whatever the merit of these particular arguments, the general point is that the framework, while it has undeniable value, should probably be subject to ongoing improvement.

A final weakness inherent in the current approach relates to the need to link any analysis to the NAFTA and its institutions. It was argued above that as the signing of the NAFTA recedes further into history, the more difficult it becomes to differentiate between the effects of NAFTA-based liberalization, and that which would have occurred anyway in the absence of NAFTA. The CEC framework is explicit about the need to ensure that it captures only the former, and the symposium process is also based, if less explicitly, on the same need to isolate the effects of liberalization.

To illustrate the limits of this approach, consider tourism in Mexico, which two symposium papers addressed.⁴⁸ Both papers more or less concluded that while there had been a significant increase in the export of tourism services from Mexico to NAFTA partners, and while there were serious environmental problems associated with that trade, it was impossible to blame NAFTA for the problems, as the trends in investment and tourism exports had a momentum of their own that predated the Agreement. Technically this conclusion seems to be correct. But in the end it means that the problem cannot be addressed by officials who are in effect charged with ensuring the mutual supportiveness of trade and the environment at the NAFTA level. Leaving aside for the moment the concerns expressed by some commentators about the level of engagement of those officials, and the policy impacts of the CEC research, it makes little sense that such trade and environment problems in the integrated NAFTA region cannot be addressed by the CEC and the FTC, given the former's mandate to assist the latter in achieving sustainable development, and developing and enforcing environmental laws and regulations.⁴⁹ As argued above, it would seem to contradict the CEC's text-based direction to consider NAFTA's environmental effects on an *ongoing* basis, since eventually the narrow scope of the exercise would render it meaningless.

The CEC-FTC Relationship

In the context of trying to assess whether we're "there" yet, it is worth a dedicated look at well the CEC has been able to fulfil its Article 10(6) mandate to work with the FTC. To recap that mandate, which was discussed in some depth above: to cooperate with the FTC to achieve the environmental goals and objectives of the NAFTA in a number of different ways, among them by "considering on an ongoing basis the environmental effects of the NAFTA."

Progress on that mandate up until a few years ago had been minimal, with only a modicum of interaction and collaboration between the FTC and the CEC. The main vehicle for what interaction existed was the CEC-convened Article 10(6) group, now known as the Trade and Environment Working Group. This group is comprised of both trade and environment officials from the three Parties, and advises the CEC on those aspects of its programs that are trade-related. One such aspect is the work on assessing the environmental impacts of trade.

⁴⁸ Martínez Meléndez (2008); Perez-Cirera and DeFerrari (2008).

⁴⁹ It was noted above that the 10(6) mandate was to cooperate with the FTC to achieve the environmental goals of the NAFTA, and that the preamble of the NAFTA more or less defines those goals as: the achievement of sustainable development, and the development and enforcement of environmental laws and regulations.

But this group, while it has proved useful in providing program-level advice, has some shortcomings. For one thing, it is comprised of high-level but not senior officials, and thus does not have the capacity to push for fundamentally integrative work efforts. As well, and perhaps more critically, it is a vehicle for input to the CEC by the trade officials, but provides no channel for the CEC to in turn support the work of the FTC.

Early in the life of the NAFTA, several efforts were made to convene a trade and environment Ministerial at which issues of joint concern could be pursued. But these were ultimately unsuccessful, sunk by, among other things, a lack of consensus on exactly what would be discussed.

There seems to have been no single predominant cause of this lack of progress on the mandate, but rather a number of contributors. In no particular order of importance, they include:

- There was no mandate for the FTC to consider environmental matters that was analogous to the 10(6) mandate given to the CEC, so there was an asymmetrical interest in any collaboration.
- As noted above, there was no agreement on exactly why such a collaboration would be valuable; there was no obvious agreed menu of items on which the trade and environmental officials could work together.
- Particularly in the early years of the NAFTA there was some mistrust among some trade officials of the environmental agenda pursued by the CEC; some believed it to be overly focused on legal remedies and compliance.
- There was no dedicated institutional venue in which trade officials from the three Parties could communicate and strategize on environmental matters; this contributed to the lack of an agreed agenda, among other things.
- Even at the national level there was sometimes a lack of trust and good communication between trade and environmental officials.
- There were unfortunately timed shifts in staffing and departmental organization among the Parties which meant a lack of continuity to those that could potentially have been working on making progress on the trade and environment agenda.

The prospects for progress in the near term, however, seem more promising. For one thing, there have been several clear statements from the FTC of the need for improved relations with the CEC. The first of these was the Joint Statement of the NAFTA Commission Meeting in 2009, which included agreement to establish an *ad hoc* working group composed of senior trade officials to explore areas of potential collaboration between the FTC and the CEC.⁵⁰ This was followed by the Joint Statement from the Commission's 2011 meeting, in which the Commission "instructed the *ad hoc* working group of senior trade officials to work closely with their counterparts in the North American Commission for Environmental Cooperation (CEC) to identify areas of collaboration, such as trade flows of used electronics in North America, green

⁵⁰ FTC (2009).

buildings and greening North America's transportation corridors."⁵¹ This is clearly the beginnings of a menu of issues on which there could be fruitful collaboration between the FTC and the CEC, the absence of which had impeded progress over the years. It is also an institutional form that will allow inter-Party communication on the issues, and seems likely to allow for a genuine two-way contribution to progress in making trade and environment mutually supportive in the NAFTA context. As such it can be argued that there is potential for the CEC to better fulfil its 10(6) mandate in the current climate than we have seen since the inception of the NAFTA and the CEC.

While the issues chosen in the initial list are all non-controversial, it can be argued that if any such issues eventually need to be tackled it should most appropriately be done after at least an initial period of trust building, in which the institutions are tested and the linkages between trade and environment officials are deepened.

The better prospects for collaboration in the NAFTA area mirror the progress made on trade and environment in other contexts as well. In the twenty-odd years that trade and environment issues have been debated the discussions have matured, helped along by institutions such as the OECD's Joint Working Party on Trade and Environment, the WTO's Committee on Trade and Environment and the efforts of many non-governmental organizations and academics. There is generally less rancour and mistrust, and more genuine determination to make the relationship work.

Conclusions

The CEC has over the last 15 years overseen an unprecedented effort to consider, *ex post*, the environmental effects of the NAFTA. The benefits of that effort are significant:

- A useful framework for analyzing the environmental effects of trade;
- An empirical grounding for arguing significant linkages between trade and environment, in NAFTA and more generally;
- A considerable body of work to identify the specific environment effects, both positive and negative, of the NAFTA; and,
- A raised public profile for the issues of trade and environment in general.

The framework produced early in that process is a solid grounding on which to base further efforts in fulfilling the CEC's Article 10(6)(d) mandate. It was originally envisioned, however, that the framework would be continuously improved through application, and that the symposium process would be central to that improvement, and these expectations have not been fulfilled. To remain relevant and useful as a basis for analysis the framework needs to be the subject of a

⁵¹ FTC (2011).

dedicated and ongoing process of improvement and revision. It is suggested here that two of the necessary revisions involve:

- Broadening the scope beyond just those effects that are attributable to the NAFTA and its institutions, given the fact that this a progressively less distinguishable set of effects 15 years hence, and given the mandate to undertake this work on an ongoing basis.
- Broadening the focus to considering broader impacts than just environmental, given the fundamental links between environmental, social and economic impacts.

Broadening the *scope* means considering the effects of NAFTA trade and investment flows, but free from the requirement to identify what portion of them are attributable to NAFTA. This is a pragmatic approach; trying to construct a no-NAFTA baseline case 15 years out is practically impossible. It is the only approach that makes sense in light of the mandate to assess those effects on an ongoing basis. And it gets to the heart of what the drafters of the 10(6) mandate likely intended, assessing the environmental effects of trade and investment flows in the integrated NAFTA region.

Broadening the *focus* means considering not just environmental but also social and economic impacts. However, it is clear that the mandate of the CEC would be over-stepped if analysis was brought to bear on problems that were *purely* social or economic, with no environmental component. The starting point for any analysis should be environmental, but that could lead to linkages that are economic and social in nature, given the inter-dependent nature of the three policy spheres. The suggestion, then, is that in such cases there should be no line that prevents such a pursuit beyond the environmental to consider linked social and economic impacts.

The symposia served a critically valuable purpose in the overall effort, engaging the public and producing a raft of relevant research. But interest in the process has faded somewhat, certainly in part because it is not clear how the results of the research papers will actually feed into policy-relevant processes. The symposia need to be more strategically employed. The strengths of the process have been its ability to raise awareness among the various stakeholder groups and, perhaps more important, to allow the public to serve essentially as the eyes and ears of the CEC, highlighting issues of concern. It is worth noting that the sectoral and specific nature of the research has been one of its strengths and should not be changed. The thematic approach to the symposia themselves has also been valuable, but should include room for new issues not related to a pre-chosen theme.

In most cases, however, the level of analysis possible in the research papers was not sufficient to exhaust the CEC's responsibility to consider the effects in question. The issues raised by the symposium process could be usefully followed up by more dedicated efforts at the Secretariat level, either as Article 13 reports, or as part of the ongoing efforts to refine the framework through case studies. The symposium papers also need to be more closely aligned with the goal of testing and improving the framework, both as an end in itself and as a measure of quality control.

A broader more strategic focus for the CEC's work in this area would arguably make it more policy relevant and more interesting both to the general public and to the policy makers that ultimately serve as its primary audience. It is noteworthy that the CEC's most recent strategic plan includes two priorities that cannot be broached by a narrow focus, but could arguably be part of a broader approach to ensuring mutual supportiveness of trade and environment:⁵²

- Climate change and the low-carbon economy
- Greening the economy of North America

It was noted that there seems to be some promise of meaningful cooperation with the FTC in the near future. Such a possibility is worth pursuing, both because it would mean a more meaningful fulfilment of the CEC's Article 10(6) mandate, but more fundamentally because it would allow both the FTC and the CEC to more effectively explore policy options that integrate both environment and trade elements. This would potentially allow expertise from both communities to be focused on issues where the two intersect, such as the assessment of the environmental impacts of trade.

In the end, the body of work coordinated by the CEC has been of unquestionable value in better understanding the effects of NAFTA on the North American environment, and in deepening the understanding of trade and environment linkages more broadly. But to progress beyond its current level of achievement, to re-engage the public on the issues of trade and environment, and to continue to fulfill its mandate under the NAAEC, this report argues that the current and historical practice needs to change.

To that end, in the next phase of work under this project, the Panel of Experts (PoE) is charged with examining such opportunities to enhance the value of the CEC's ongoing consideration of environmental effects of NAFTA and integration of the North American economies. The PoE is expected to delineate key sectors and cross-sectoral issues facing North America today with the greatest potential for environmental and trade policy impacts. Similarly, the POE will describe how such work could be accomplished in a focussed and practicable manner, and tempered by the capacity of the CEC and its partners.

⁵² CEC (2010).

References

- Abel, Andrea, and Travis Philips, 2000. "The Relocation of El Paso's Stonewashing Industry and Its Implications for Trade and the Environment," Paper presented at the North American Symposium on Understanding the Linkages between Trade and Environment, October 11-12, 2000. Montreal: CEC.
- Barg, Stephen, Marlene Roy, Kirk Strand and Dan Rubenstein. 2008. "The Ex-Post Analysis of Environmental Regulation: A survey of current issues." Winnipeg: International Institute for Sustainable Development.
- Carpentier, Chantal Line. 2006. "NAFTA Commission for Environmental Cooperation: Ongoing assessment of trade liberalization in North America," *Impact Assessment and Project Appraisal* 24: 259–272.
- CEC. 2011. "Destination Sustainability: Reducing greenhouse gas emissions from freight transportation in North America." (Secretariat Report to Council under Article 13 of the NAAEC.) Montreal: CEC.
- CEC. 2010. "Strategic Plan of the Commission for Environmental Cooperation 2010 – 2015." November 10. Montreal: CEC.
- CEC. 2008. "Environmental Assessment of NAFTA: Lessons learned from the CEC's trade and environment symposia." (A background paper for the Experts Roundtable JPAC Public Session, Phoenix Arizona, April 2008.) Montreal: CEC.
- CEC. 2004. *Maize and Biodiversity: The Effects of Transgenic Maize in Mexico*. (Secretariat Report to Council under Article 13 of the NAAEC.) Montreal: CEC.
- CEC. 2002a. *Environmental challenges and Opportunities of the Evolving North American Electricity Market*. (Secretariat Report to Council under Article 13 of the NAAEC.) Montreal: CEC.
- CEC. 2002b. *The Environmental Effects of Free Trade: Papers presented at the North American Symposium on Assessing the Linkages between Trade and the Environment (October 2000)*. Montreal: CEC.
- CEC. 1999a. *Assessing Environmental Impacts of the North American Free Trade Agreement (NAFTA): An analytical framework (phase II) and issue studies*. Montreal: CEC.
- CEC. 1999b. "Analytic Framework for Assessing the Environmental Effects of the North American Free Trade Agreement." (final framework). Montreal: CEC.

Chomo, Grace and Michael Ferrantino. 2000. "NAFTA Environmental Impacts on North American Fisheries." Paper presented at the North American Symposium on Understanding the Linkages between Trade and Environment, October 11-12, 2000. Montreal: CEC.

Cloutier, L. Martin, Paul J. Thomassin, Florence Dagicour and José-Carlos Rodríguez. 2003. "Local Environmental Protection and Trade: The Cases of Hog Production in Canada and Mexico." Paper presented at the Second North American Symposium on Assessing the Environmental Effects of Trade, 25-26 March, 2003. Montreal: CEC.

de Janvry, Alain. 1996. "NAFTA and Agriculture: An Early Assessment," Keynote address at the symposium *NAFTA and Agriculture: Is the Experiment Working?*, San Antonio, Texas, November 1-2.

DFAIT. 1997. "NAFTA: A Partnership at Work." Ottawa: Department of Foreign Affairs and International Trade Canada.

Domínguez Villalobos, Lilia and Flor Brown-Grossman. 2005. "Business Environmental Decisions in the Context of the Free Trade Agreement." Paper presented at the Third North American Symposium on Assessing the Environmental Effects of Trade, 30 November-1 December 2005. Montreal: CEC.

Dyer, George A. and Antonio Yúnez-Naude. 2003. "NAFTA and Conservation of Maize Diversity in Mexico." Paper presented at the Second North American Symposium on Assessing the Environmental Effects of Trade, 25-26 March, 2003.

Fernandez, Linda. 2008. "Environmental Implications of Trade Liberalization on North American Transport Services: The Case of the Trucking Sector." Paper presented at the Fourth North American Symposium on Assessing the Environmental Impacts of Trade, April 23, 2008. Montreal: CEC.

Ferrier, Grant. 2008. "The Evolution of the Environmental Services Industry in Mexico, 1995-2005." Paper presented at the Fourth North American Symposium on Assessing the Environmental Impacts of Trade, April 23, 2008. Montreal: CEC.

FTC. 2009. "Joint Statement of the 2009 NAFTA Commission Meeting." Dallas, Texas, October. Available at: <http://www.ustr.gov/about-us/press-office/press-releases/2009/october/joint-statement-2009-nafta-commission-meeting>.

FTC. 2011. "Joint Statement from the January 10, 2011 Meeting of the NAFTA Free Trade Commission." Mexico City, Mexico. Available at: <http://www.ustr.gov/about-us/press-office/press-releases/2011/january/joint-statement-january-10-2011-meeting-nafta-free>.

Fredriksson, Per and Daniel Milliment. 2000. "Is There a Race to the Bottom in Environmental Policies?" Paper presented at the North American Symposium on Understanding the Linkages between Trade and Environment, October 11-12, 2000. Montreal: CEC.

Gallagher, Kevin and Frank Ackerman. 2000. "Trade Liberalisation and Pollution Intensive Industry in Developing Countries: A Partial Equilibrium Approach." In OECD, *Assessing the Environmental Effects of Trade Liberalization Agreements: Methodologies*. Paris: OECD.

Gallagher, Kevin, Frank Ackerman and Luke Ney. 2001. "Environmental Reviews of Trade Agreements: Assessing the North American Experience." Paper presented at the North American Symposium on Understanding the Linkages between Trade and Environment, October 11-12, 2000. Montreal: CEC.

Gaines, Sanford. 2005. "Environmental Policy Implications of Investor-State Arbitration under NAFTA Chapter 11." Paper presented at the Third North American Symposium on Assessing the Environmental Effects of Trade, 30 November–1 December 2005. Montreal: CEC.

GAO (General Accountability Office). 2009. "International Trade: Four free trade agreements GAO reviewed have resulted in commercial benefits, but challenges on labour and environment remain." A report to the Chairman, Committee on Finance, US Senate (GAO-09-439).

Gibson, Robert and Anita Walker. 2001. "Assessing trade: An evaluation of the Commission for Environmental Cooperation's analytic framework for assessing the environmental effects of the North American Free Trade Agreement." *Environmental Impact Assessment Review* 21: 449-468.

Guerrero, María Teresa, Francisco de Villa, Mary Kelly, Cyrus Reed and Brandon Vegter. 2000. "The Forestry Industry in the State of Chihuahua: Economic, Ecological and Social Impacts post-NAFTA." Paper presented at the North American Symposium on Understanding the Linkages between Trade and Environment, October 11-12, 2000. Montreal: CEC.

Hinojosa-Ojeda, Raul, Curt Dowds, Robert McCleery, Sherman Robinson, David Runsten, Craig Wolff and Goetz Wolff. 1996. "North American Integration Three Years after NAFTA: A Framework for Tracking, Modeling and Internet Accessing the National and Regional Labor Market Impacts." Los Angeles: University of California.

ICF Consulting. 2001. "North American Trade and Transportation Corridors: Environmental Impacts and Mitigation Strategies." Report prepared for the CEC.

Jacott, Marisa, Cyrus Reed and Mark Winfield. 2000. "The Generation and Management of Hazardous Wastes and Transboundary Hazardous Waste Shipments between Mexico, Canada and the United States, 1990–2000." In CEC (2002b).

Jacott, Marisa, Cyrus Reed, Amy Taylor and Mark Winfield. 2003. "Energy Use in the Cement Industry in North America: Emissions, Waste Generation and Pollution Control, 1990-2001." Paper presented at the Second North American Symposium on Assessing the Environmental Effects of Trade, 25-26 March, 2003. Montreal: CEC.

Kessler, Jan Joost and Hussein Abaza. 2006. "United Nations Environment Programme's approach to integrated assessment of trade-related policies: evolution and recent progress." *Impact Assessment and Project Appraisal* Vol. 24 No. 4: 273-283.

Kornylak, Vera. 2000. "Relationship between Wastewater Treatment and NAFTA." Paper presented at the North American Symposium on Understanding the Linkages between Trade and Environment, October 11-12, 2000. Montreal: CEC.

Kouparitsas, Michael. 1996. "A Dynamic Macroeconomic Analysis of NAFTA." Federal Reserve Bank of Chicago, Chicago, IL, USA.

Mann, Howard. 2000. "Assessing the Impact of NAFTA on Environmental Law and Management Processes." Paper presented at the North American Symposium on Understanding the Linkages between Trade and Environment, October 11-12, 2000. Montreal: CEC.

Mexican Government. 1997. "NAFTA Works for Mexico-Canada Trade, 1993–1996." Ottawa: Mexican Embassy, Trade Office.

OECD. 2006. "Regional Trade Agreements and Environment." (COM/ENV/TD(2006)47). Report of the Joint Working Party on Trade and Environment. Paris: OECD.

OECD. 2004. *Methodologies for Environment and Trade Reviews*. (OCDE/GD(94)103). Paris: OECD.

OECD. 2000. *Assessing the Environmental Effects of Trade Liberalization Agreements: Methodologies*. Paris: OECD.

Martínez Meléndez, Luz Aída. 2008. "NAFTA, Tourism and the Environment in Mexico." Paper presented at the Fourth North American Symposium on Assessing the Environmental Impacts of Trade, April 23, 2008. Montreal: CEC.

Martínez Peralta, Claudia María. 2008. "Effects of Trade Liberalization on Provision of Urban Solid Waste Collection, Recycling, and Final Disposal Service: The Case of Mexico's Northern Border Region." Paper presented at the Fourth North American Symposium on Assessing the Environmental Impacts of Trade, April 23, 2008. Montreal: CEC.

Perez-Cirera Vanessa and Gina DeFerrari. 2008. "Tourism, Trade and the Environment: Tourism and Coastal Development in the Mexican Portion of the Mesoamerican Reef." Paper presented at the Fourth North American Symposium on Assessing the Environmental Impacts of Trade, April 23, 2008. Montreal: CEC.

Perrault, Anne, Morgan Bennett, Stas Burgiel, Aimee Delach and Carroll Muffett. 2003. "Invasive Species, Agriculture and Trade: Case Studies from the NAFTA Context." Paper presented at the Second North American Symposium on Assessing the Environmental Effects of Trade, 25-26 March, 2003. Montreal: CEC.

Perrin, Mireille. 2000. "Sustainability Assessment of Trade Liberalisation Agreements," in OECD, *Assessing the Environmental Effects of Trade Liberalization Agreements: Methodologies*. Paris: OECD.

Plagiannakos, Takis. 2000. "Will Free Trade in Electricity between Canada and the US Improve Environmental Quality?" Paper presented at the North American Symposium on Understanding the Linkages between Trade and Environment, October 11-12, 2000. Montreal: CEC.

Poynter, Rachel, and Sheila Holbrook-White. 2000. "NAFTA Transportation Corridors: Approaches to Assessing Environmental Impacts and Alternatives," in CEC (2002b).

Schatan, Claudia. 2000. "Mexico's Manufacturing Exports and Environment under NAFTA." Paper presented at the North American Symposium on Understanding the Linkages between Trade and Environment, October 11-12, 2000. Montreal: CEC.

Sierra Club of Canada. 2000. "Assessing NAFTA Effects on Water." Paper presented at the North American Symposium on Understanding the Linkages between Trade and Environment, October 11-12, 2000. Montreal: CEC.

Sierra Club and Holbrook-White. 2000. "NAFTA Transportation Corridors: Approaches to Assessing Environmental Impacts and Alternatives." Paper presented at the North American Symposium on Understanding the Linkages between Trade and Environment, October 11-12, 2000. Montreal: CEC.

Speir, Jerry, Marie-Ann Bowden, David Ervin, Jim McElfish, Rosario Pérez Espejo, Tim Whitehouse, and Chantal Line Carpentier. 2003. "Comparative Standards for Intensive Livestock Operations in Canada, Mexico, and the United States." Paper presented at the Second North American Symposium on Assessing the Environmental Effects of Trade, 25-26 March, 2003. Montreal: CEC.

Stern, David. 2005. "The Effect of NAFTA on Energy and Environmental Efficiency in Mexico." Paper presented at the Third North American Symposium on Assessing the Environmental Effects of Trade, 30 November–1 December 2005. Montreal: CEC.

UNEP. 2002. *Integrated Assessment of Trade Liberalization and Trade-Related Policies: UNEP Country Projects Round II – A Synthesis Report*. New York and Geneva: United Nations.

UNEP. 2001. *Reference Manual for the Integrated Assessment of Trade-Related Policies*. New York and Geneva: United Nations.

UNEP. 1999. *Trade Liberalization and the Environment: Lessons learned from Bangladesh, Chile, India, Philippines, Romania and Uganda. A Synthesis Report*. New York and Geneva: United Nations.

US Congress. 1997. "Secretary of Agriculture's Report to Congress on the Effects of the North American Free Trade Agreement on Agriculture and the Rural Economy." Washington, D.C.: The US Senate Committee on Agriculture, Nutrition and Forestry and the U.S. House of Representatives Committee on Agriculture.

USTR. 1997. "Study on the Operation and Effects of the North American Free Trade Agreement." Washington, DC: United States Trade Representative.

Vaughan, Scott and Greg Block. 2002. "Free Trade and the Environment: The picture becomes clearer." Montreal: CEC.

Vilas-Ghiso, Silvina and Diana M. Liverman. 2008. "Liberalization of Financial Services Under NAFTA and its Effect on the Environmental Performance of the Agricultural Sector in Mexico." Paper presented at the Fourth North American Symposium on Assessing the Environmental Impacts of Trade, April 23, 2008. Montreal: CEC.

Wisner, Priscilla, and Mark P. Epstein. 2005. 'Push' and 'Pull' Impacts of NAFTA on Environmental Responsiveness and Performance in Mexican Industry. Paper presented at the Third North American Symposium on Assessing the Environmental Effects of Trade, 30 November–1 December 2005. Montreal: CEC.

Weintraub, Sidney. 1997. *NAFTA at Three Years*. Washington, DC: Center for Strategic and International Studies.

Annex I: CEC research surveyed

Forests and agriculture

- Assessing the Environmental Effects of NAFTA on the Forestry Sector in Mexico (First Symposium)

Texas Center for Policy Studies and Comisión de Solidaridad y Defensa a los Derechos Humanos

- Agricultural Trade Liberalization and the Environment in North America: Analyzing the 'Production Effect' (Second Symposium)

Gareth Porter, Consultant

- Some Domestic Environmental Effects of US Agricultural Adjustments under Liberalized Trade: A Preliminary Analysis (Second Symposium)

Joseph Cooper, Robert Johansson, and Mark Peters, Economic Research Service (ERS/USDA)

- Aquifers and Agrochemicals in a Border Region: NAFTA Challenges and Opportunities for Mexican Agriculture (Second Symposium)

José María Martínez Rodríguez, Red Fronteriza de Salud y Ambiente, A.C.

- The Socio-economic and Environmental Effects of the Trade Liberalization of Basic Grains within the Context of NAFTA: The Case of Sinaloa (Second Symposium)

Ana de Ita, Centro de Estudios para el Cambio en el Campo Mexicano, A.C. (CECCAM)

- NAFTA and Conservation of Maize Diversity in Mexico (Second Symposium)

George A. Dyer, University of California, Davis, and Antonio Yúnez-Naude, Centro de Estudios Económicos, El Colegio de México

- The Economic and Environmental Impacts of Agricultural Subsidies: An Assessment of the 2002 US Farm Bill and Doha Round (Second Symposium)

Karel Mayrand, Stéphanie Dionne, Marc Paquin and Isaak Pageot-LeBel, Unisfera International Centre

- Comparative Standards for Intensive Livestock Operations in Canada, Mexico, and the United States (Second Symposium)

Jerry Speir, Tulane Institute for Environmental Law and Policy, Tulane Law School; Marie-Ann Bowden, University of Saskatchewan; David Ervin, Winrock International; Jim McElfish, Environmental Law Institute (ELI); Rosario Pérez Espejo, Universidad Nacional Autónoma de México (UNAM); Tim Whitehouse, Commission for Environmental Cooperation; and Chantal Line Carpentier, Commission for Environmental Cooperation

- Local Environmental Protection and Trade: The Cases of Hog Production in Canada and Mexico (Second Symposium)

L. Martin Cloutier, Dept of Management and Technology, Université du Québec à Montréal

Paul J. Thomassin, Department of Agricultural Economics, McGill University

Florence Dagicour, Research Centre in Private and Comparative Law, McGill University

José-Carlos Rodríguez, Dept of Management and Technology, Université du Québec à Montréal

- Invasive Species, Agriculture and Trade: Case Studies from the NAFTA Context (Second Symposium)

Anne Perrault and Morgan Bennett, Center for International Environmental Law

Stas Burgiel, Aimee Delach and Carroll Muffett, Defenders of Wildlife

- Scale, Technique and Composition Effect in the Mexican Agricultural Sector: The Influence of NAFTA and the Institutional Environment (Third Symposium)

Silvina J. Vilas-Ghiso and Diana M. Liverman

- Liberalization of Financial Services Under NAFTA and its Effect on the Environmental Performance of the Agricultural Sector in Mexico (Fourth Symposium)

Prepared by the Department of Sustainable Development of the General Secretariat of the Organization of American States with contributions from Claudia S. de Windt, Isis Marquez, Rodrigo Martínez, Oscar Ceville and Xiaohang Liu

Fisheries and water

- NAFTA Environmental Impacts on North American Fisheries (First Symposium)

Grace Chomo and Michael Ferrantino, US International Trade Commission

- Assessing NAFTA Effects on Water (First Symposium)

Sierra Club of Canada

Industry, energy and wastes

- Will Free Trade in Electricity between Canada and the US Improve Environmental Quality (First Symposium)

Takis Plagiannakos, Ontario Power Generation

- The Effect of NAFTA on Energy and Environmental Efficiency in Mexico (Third Symposium)

David Stern

- Opportunities and Barriers for Renewable Energy in NAFTA (Third Symposium)

REIL Project, Robert L. Howse and Petrus van Bork

- Energy Use in the Cement Industry in North America: Emissions, Waste Generation and Pollution Control, 1990-2001 (Second Symposium)

Marisa Jacott, Fronteras Comunes

Cyrus B.H. Reed, Texas Center for Policy Studies

Amy Taylor and Mark Winfield, The Pembina Institute for Appropriate Development

- NAFTA and Industrial Pollution (First Symposium)

Kenneth Reinert, School of Public Policy, George Mason University, and David Roland-Holst, Mills College

- The Generation and Management of Transboundary Hazardous Waste Shipments between Canada, Mexico and the United States (First Symposium)

Canadian Institute for Environmental Law and Policy, Texas Center for Policy Studies and La Neta: Proyecto Emisiones Espacio Virtual

- The Relocation of El Paso's Garment Stonewashing Industry (First Symposium)

Andrea Abel, National Wildlife Federation

- Mexico's Manufacturing Exports and Environment under NAFTA (First Symposium)

Claudia Schatan, Economic Commission for Latin America and the Caribbean

- Relationship between Wastewater Treatment and NAFTA (First Symposium)

Vera Kornylak, Arizona Center for Law and Public Interest

- Open Trade with the US without Compromising Canada's Ability to Comply with its Kyoto Target (Second Symposium)

ZhongXiang Zhang, Research Program, East-West Center

- Learning Processes in the Maquiladora Export Industry and Environmental Technologies in Three Northern Border Cities in Mexico: Tijuana, Mexicali, and Ciudad Juárez (Third Symposium)

María. del Rosio Barajas E., Carmen Rodríguez C. and Humberto García

- NAFTA and the Mexican Automobile Industry: the Road Towards Harmonization of Environmental Standards on a North American Basis (Third Symposium)

Isabel Studer

- The Maquiladora Electronics Industry and the Environment along Mexico's Northern Border (Third Symposium)

Claudia Schatan and Liliana Castilleja

- "Push" and "Pull" Impacts of NAFTA on Environmental Responsiveness and Performance in Mexican Industry (Third Symposium)

Priscilla Wisner and Marc J. Epstein

- Pollution and International Trade in Services (Fourth Symposium)

Arik Levinson, Associate Professor, Economics Department, Georgetown University /National Bureau of Economic Research

- Effects of Trade Liberalization on Provision of Urban Solid Waste Collection, Recycling, and Final Disposal Service: The Case of Mexico's Northern Border Region (Fourth Symposium)

Claudia María Martínez Peralta, Sonora State Commission for Ecology and Sustainable Development

- Growth in the Supply of Municipal Environmental Services to Communities on Mexico's Northern Border (1995–2005) (Fourth Symposium)

Tomás Balarezo Vásquez, Regional Planning Manager, and Alberto Ramírez López, Special Projects Manager, Border Environment Cooperation Commission

Indigenous People

- Historical and Current Impacts of Trade on Indigenous Groups in North America (Second Symposium)

Jack Corbett, Portland State University

Methodologies and assessment

- Methodologies for Evaluating the Environmental Effects of Services Trade Liberalization (First Symposium)

Dale Andrew, Organization of Economic Cooperation and Development

- Ten Years of North American Environmental Cooperation (TRAC): Report of the Ten Year Review and Assessment Committee to the Council of the Commission for Environmental Cooperation (2004)

Pierre Marc Johnson (Chair) and Robert Page, Canada

Jennifer A. Haverkamp and John F Mizroch, United States

Daniel Basurto and Blanca Torres, Mexico

- Environmental Assessments of NAFTA: Lessons Learned from CEC's Trade and Environment Symposia (2008)

Background Paper for the Experts Roundtable JPAC Public Session, Phoenix, Arizona, April 2008

- Environmental Reviews of Trade Agreements: Assessing the North American Experience. (First Symposium)

Kevin Gallagher, Frank Ackerman and Luke Ney, Global Development and Environment Institute, Fletcher School of Law and Diplomacy, Tufts University.

- Assessing Environmental Impacts of the North American Free Trade Agreement (NAFTA): An analytical framework (phase II) and case studies. (1999)

Commission for Environmental Cooperation.

- Analytic Framework for Assessing the Environmental Effects of the North American Free Trade Agreement (final framework) (1999)

Commission for Environmental Cooperation.

General law, economics and policy

- The Impact of NAFTA on Mexico's Economy and Environment (First Symposium)

Fernando Gutiérrez Moreno, Instituto para la Protección Ambiental de Nuevo León

- Assessing the Impact of NAFTA on Environmental Law and Management Processes (First Symposium)

Howard Mann, International and Environmental Law and Policy

- Is There a Race to the Bottom in Environmental Policies? (First Symposium)

Per Fredriksson and Daniel Milliment, Southern Methodist University

- Free Trade and the Environment: The Picture Becomes Clearer (2002)

Scott Vaughan and Greg Block of the CEC Secretariat

- The Conflicting Economic and Environmental Logics of North American Governance: NAFTA, Energy Subsidies, and the Environment (Second Symposium)

Robin Jane Roff

Stephen Clarkson, University of Toronto

Anita Krajnc, Sierra Club Canada

- Americas Sustainability Issues: Biodiversity, Indigenous Knowledge and Intellectual Property Rights (Second Symposium)

Mindähi C. Bastida Muñoz, Mexican Council for Sustainable Development

- Business Environmental Decisions in the Context of the Free Trade Agreement (Third Symposium)

Lilia Domínguez-Villalobos and Flor Brown-Grossman

- Environmental Policy Implications of Investor-State Arbitration Under NAFTA Chapter 11 (Third Symposium)

Sanford Gaines

- Trade Liberalization and the Porter Effect: Theory and (Preliminary) Evidence from Mexico (Third Symposium)

Kishore Gawande and Alejandro Islas-Camargo

- The NAFTA environmental agreement: The Intersection of Trade and the Environment (Third Symposium)

Jon Plaut

- Structural Changes in Mexico; Economic Growth, Trade Liberalization, NAFTA and the Environment (Fourth Symposium)

Gustavo Alanís-Ortega, President, Mexican Center for Environmental Law (Centro Mexicano de Derecho Ambiental [Cemda])

Services

- NAFTA Transportation Corridors: Approaches to Assessing Environmental Impacts and Alternatives (First Symposium)

The Sierra Club and the Texas Citizens Fund, with technical support from WWF-US

- NAFTA, Tourism and the Environment in Mexico (Fourth Symposium)

Luz Aída Martínez Meléndez, Master's Candidate, Department of Natural Resources and Environmental Economics, University of Vermont

- Tourism, Trade and the Environment: Tourism and Coastal Development in the Mexican Portion of the Mesoamerican Reef (Fourth Symposium)

Vanessa Perez-Cirera, Conservation Director, World Wildlife Fund—Mexico

Gina DeFerrari, Meso American Priority Leader, World Wildlife Fund—United States

- Transportation Services, Air Quality and Trade (Fourth Symposium)

Linda Fernandez, Associate Professor of Economics, Department of Environmental Sciences, University of California, Riverside

- Environmental Implications of Trade Liberalization on North American Transport Services: The Case of the Trucking Sector (Fourth Symposium)

Linda Fernandez, Associate Professor of Economics, Department of Environmental Sciences, University of California, Riverside

- The Evolution of the Environmental Services Industry in Mexico, 1995–2005 (Fourth Symposium)

Grant Ferrier, President, Environmental Business International, Inc.

George Stubbs and Fiona O'Donnell-Lawson, Project Contributors

Annex II: Interviews

Interviewed:

Adriana Nelly Correa Sandoval, ITESM Campus Monterrey

Alejandro Posadas, Trade and Environment Working Group; International Office of Environmental Issues at the Mexican Embassy in the US

Benjamin Simmons, Economics and Trade Branch, UNEP

Brad Gentry, Yale School of Forestry and Environment

Carlos Muñoz Villarreal, Universidad Autónoma Metropolitana

Carlos Sandoval, Consejo Nacional de Industriales Ecologistas, A.C. (Conieco)

Chantal Line Carpentier, Former Head, Environment, Economy and Trade Program, CEC

Claudia Maria Martinez Peralta, COLSON

Claudia Schatan, ECLAC Subregional Headquarters in Mexico

Cristina Rosas, Professor, Centro de Relaciones Internacionales, UNAM

Dale Andrew, Director, Trade Policy Linkages Division, Trade Directorate, OECD

Greg Block, Former Director of Programs, CEC

Gustavo Alanis Ortega, Director, Centro Mexicano de Derecho Ambiental (CEMDA)

John Kirton, International Relations Program, Munk Centre, University of Toronto

Jose Carlos Fernández, CONAFOR; Former Manager Environment and Trade CEC

Jose Javier Verde Negrete, Dirección General de Análisis de Comercio Exterior, Secretaría de Economía

José María Martínez Rodríguez, Red Fronteriza de Salud y Ambiente

Marc Paquin, executive Director, Unisfera International Centre

Mark Linscott, Assistant USTR for Environment and Natural Resources

Melanie Klingbeil, Trade Policy Officer, North America Trade Policy Division, Department of Foreign Affairs and International Trade

Rachel McCormick, Department of Foreign Affairs and International Trade, Canada

Ricardo Aranda Girard, Dirección General de Análisis de Comercio Exterior, Secretaría de Economía

Robert Gibson, Professor and Associate Chair, Graduate Studies, Department of Environment and Resource Studies, University of Waterloo

Rosario Pérez Espejo, Instituto de Investigaciones Económicas ,UNAM

Scott Vaughan, Former Head, Environment, Economy and Trade Program, CEC

Thomas Brewer, Associate Professor, Georgetown University

Victor Fuentes, Dirección General de Análisis de Comercio Exterior, Secretaría de Economía

Victor Lichtinger, Former Director, CEC

Declined

Colin Kirkpatrick, University of Manchester

Unavailable/no response:

Blanca Torres, Coordinador, Colegio de México

Clive George, University of Manchester

Irene Henriques, Schulich School of Business, York University

Kent Shigatomi, USTR

Ricardo Meléndez Ortiz, Executive Director, ICTSD

Russel Smith, Former member, Environment and Trade Working Group

Sarah Richardson, Former Head, Environmental Effects Program, CEC