



State of Trade and Environment Research: Building a New Research Agenda

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1. Introduction

Early versions of this paper served as background to two meetings of trade and environment experts convened by the International Institute for Sustainable Development, the first in Geneva in May 2003 and the second in Cancun in September 2003. The purpose of the project that encompasses both the paper and the two meetings is to elaborate a new research agenda for trade and environment. The project proposal summarizes the goal as follows:

“To develop a comprehensive and forward-looking research agenda that lays out the full agenda of “environment and trade” issues in the context of the WTO Doha negotiations and relevant regional trade arrangements, with particular attention to potential flashpoints, that pinpoints important gaps in current research efforts, identifies where capacity for new research exists or should be developed, and recommends key areas for immediate attention.”

The basis of the research agenda presented here is an extensive survey of over 300 recent research publications produced in the last two years on the subject of trade and environment. This survey was not, of necessity, exhaustive, the goal being to be comprehensive enough to give a reasonable idea of the level of effort being devoted to the various themes in the area of trade and environment. The first insight of this project has, however, been, that the past years have seen a veritable explosion of research on trade and environment, with contributions from a wide range of countries, both developed and developing.

While much of the recent literature is in English, which has become the lingua franca of environmental policy research, a number of important contributions are only available in other languages. An effort has been made in the final iteration of the literature search to reach at least the most important contributions in the major western languages.

The experts group, meeting in Geneva and Cancun, used this survey as a foundation for their deliberations. The group was charged with assessing the state of existing research, mapping it against what they saw as the priority areas for research. The resulting gaps analysis formed a list of research topics that IISD fleshed out as the research agenda presented here. Both IISD and the expert group also went further to ask a number of questions related to how that research might be conducted—questions that serve as a further development of the list of research topics.

2. Organization of the Paper

The paper begins with some notes on methodology, including a description of the scope and definitions used for the survey. The survey results are then presented, first by laying out and describing the categories into which the research has been grouped, and then by showing the results themselves.

The data are then analyzed, in an effort to discern the shape of the current research effort. Based on this analysis, and on the input of the group at the Geneva and Cancun meetings, the paper presents a proposed research agenda on trade and environment.

3. Brief Notes on Survey Methodology

The scope of this survey is limited to trade and environment, rather than trade and sustainable development. That is, research that involves trade, environment *and* development is covered, but research covering trade and development alone is not. There is, for example, no coverage of the research that focuses on the development box in the agricultural negotiations at the World Trade Organization (WTO). This is for two principal reasons: first, environment is a crucial subset of the wider sustainable development focus; moreover environmental issues have been the driving force behind discussions of sustainable development in the trade regime and have resulted in a range of very concrete institutional changes and negotiating strategies. Taking on the challenge of identifying a full trade and sustainable development agenda would be a daunting task, well beyond the means of this project.

A broad definition of research is used. Any work that advances our thinking in the areas of trade and environment is included, whether or not it involves empirical or analytical research. The emphasis is on original contributions to the debate. This type of coverage should be understood to be a *proxy* indicator of research effort, given that it does not consider programs of work in areas of interest, but only publications.

Similarly a broad definition of “publication” is used, including release on the web, circulation of materials under an institutional imprint, or publication in a peer reviewed journal. A significant portion of the documents listed appeared in major peer reviewed journals.

The common meaning of “trade,” as that which is covered by trade agreements such as the WTO is, for better or for worse, adopted here. In other words, trade policy is understood to cover not only trade in goods and services, but also investment, intellectual property rights, and so on. The institutions of trade, such

as the WTO dispute settlement mechanism, are also covered. The survey does not focus specifically on the work of the Committee on Trade and Environment (CTE) of the WTO. While the agenda of the CTE is in principle comprehensive, its debates and the accompanying WTO Secretariat research have been quite narrowly focused. This tendency has been reinforced by the Doha Ministerial Declaration, which assigns paragraphs 31 and 32 to the CTE in Special Session (CTESS) for negotiation. The numerous other issues of environmental issues that are to be found in the Doha Declaration, let alone trade and environment issues not covered by the Declaration, would not be adequately addressed if the CTE were taken as focus.

This survey does not adopt a particular definition of "environment." It consequently covers any article that considers itself to be addressing the trade and environment interface, including articles on the beef hormone dispute, which could reasonably be viewed as a matter of consumer protection rather than relating to environmental management. In other words the survey takes a relatively pragmatic approach.

The coverage is restricted to recent research, but does not include planned or ongoing research as did the first version of this paper. The cut-off date for existing research is January 1, 2002. There is, of course, a rich body of research from before that date, but the idea is to give a picture of where current research efforts are focussed.

At over 300 items, the survey is comprehensive, but not exhaustive (even a few minor IISD publications are not on the list). At this point, however, there is a diminishing return to the energy needed to add more items. The analysis that is possible with the existing data is not likely to be much changed by the addition of more items - what we have now is in its broad mix probably a good representation of the total body of recent work.

It turns out that it is not easy to determine whether a given researcher is Northern or Southern. A significant number of "Northern" publications include contributions from "Southern" authors. In such cases of joint authorship the research was tabulated as half a research product by each of Northern and Southern researchers. There was also some difficulty in labelling, for example, a researcher born in the South but now living and working in the North. In most such cases the researcher was considered a "Southerner."

4. The Survey

It is worth describing and justifying the categories into which the survey breaks the existing research effort. These are presented in the list that follows. The list is designed to provide a logical structure that is as non-overlapping as possible.

An alternative approach to surveying the current research effort, that was considered and rejected, is to focus on the research being supported by the major funding sources. This is methodologically more difficult than the bibliographic approach, but it has the advantage that it can provide an indicator for the future direction of research, at least in the short term. The disadvantages arise from the funding cycle itself and the competitive nature of the market for funding. Some funders, in particular in the public sector, do not provide itemized reports on the use of funds. Similarly there are no internationally accepted standards for the reporting of funding support received. Moreover funders are widely dispersed, including public and private sources in many countries. Public funds are again dispersed between agencies. This renders a funder focus of limited use.

For a more detailed explanation of the categories presented here, see Annex A.

Table 1: Survey Categories

1. Impacts of Trade, and Trade Policy

What are the environmental impacts of liberalization or, alternatively, of protection? What are the economic impacts of environment-related trade policies? What are the impacts of trade flows themselves, irrespective of liberalization?

- 1.1. Direct, product, technology impacts of trade, trade policy
 - 1.1.1. Transportation
 - 1.1.2. Invasive species
 - 1.1.3. Hazardous waste trade
 - 1.1.4. Trade in environmental goods and services (*environment and economic impacts*)
 - 1.1.5. Bulk water transfers (*environmental impacts of*)
 - 1.1.6. Investment flows
- 1.2. Scale, structural impacts of trade, trade policy
 - 1.2.1. Agriculture (*impacts of liberalization and market distortion*)
 - 1.2.2. Forest products
 - 1.2.3. Fisheries, aquaculture
 - 1.2.4. Mining
 - 1.2.5. Electricity
 - 1.2.6. Manufacturing
- 1.3. Environmental regulatory effects of trade, trade policy
 - 1.3.1. Services liberalization
 - 1.3.2. Investment liberalization
 - 1.3.3. Trade Related Intellectual Property Rights (TRIPS), in particular impacts on biodiversity
 - 1.3.4. Government procurement
 - 1.3.5. Pollution havens (*question 2: if there is migration (or threat), what regulatory impacts?*)
 - 1.3.6. Precautionary principle
 - 1.3.7. Process and Production Methods (PPMs)
 - 1.3.7. Labelling for environmental purposes
 - 1.3.8. MEAs (impacts of trade rules)
- 1.4. Cross-sectoral impact assessments

2. Impacts of Environmental Policy

What are the environmental and economic impacts of trade-related environmental policies?

- 2.1. Labelling for environmental purposes
- 2.2. Pollution havens (*question 1: do firms migrate?*)
- 2.3. Environmental measures and market access
- 2.4. Trade impacts of MEAs

3. Institution Building

Given the intersection of trade and environment policy spheres, how can we build institutions that will achieve mutual support (or, at a minimum, achieve benign neutrality)?

- 3.1. WTO-MEAs
- 3.2. International environmental crime
- 3.3. Regional/bilateral trading agreements (*how to do it, how it's been done*)
- 3.4. Sustainability assessment of liberalization agreements
- 3.5. Transparency, public participation in trade policy making, dispute settlement
- 3.6. International Environmental governance; WEO
- 3.7. Capacity building on trade and environment
- 3.8. Standards-related regimes
- 3.9. International investment agreements
- 3.10. Green trade
- 3.11. Structural reform/issue choice within WTO

6. Legal Analysis

What is the relationship between trade law and the environment? What are the implications of the rulings to date?

5. Economic Analysis

What methods can be used to analyze the trade and environment relationship? What results do we get from modelling?

6. Analysis of Doha Negotiations

What are the various negotiating options on items of clear environmental interest?

- 6.1. Agriculture
- 6.2. Services
- 6.3. TRIPS
- 6.4. Investment
- 6.5. Competition Policy
- 6.6. Government Procurement
- 6.7. WTO Rules (Subsidies)
- 6.8. Dispute Settlement Understanding
- 6.9. WTO-MEAs
- 6.10. Environmental Goods and Services
- 6.11. Environmental Measures and Market Access
- 6.12. Labelling for environmental purposes
- 6.13. Capacity Building
- 6.14. The Role of the CTE

7. Other

The value of any survey of this type lies in two main areas: first, in the thoroughness of the survey itself. The more comprehensive the survey, the better the picture given. Second, the presentation of the results is also important. There is a trade-off between the simplicity and ease of very few categories of research, and the illustrative value of a highly disaggregated list of categories. If anything, the list above errs on the side of complexity.

The advantage of complexity is that it gives a clear picture of what research questions are being asked and where research effort is being directed, allowing for subtle distinctions between areas of focus and overall approach. The disadvantage, of course, is conceptual difficulty. As well, if taken too far complexity disaggregates those research efforts that should be considered part of the same body of work.

The Survey Results

The results of the survey are presented below. It is worth noting that the overall volume of research on trade and environment is quite remarkable. This is a policy issue that did not emerge onto the negotiating agenda of either trade or environmental regimes until just over ten years ago. At the same time, coverage is quite uneven and a number of new issues for research are still being added to the agenda.

The survey covered 315 items. These were broken down into subject area, and again into northern or Southern authorship, and northern or southern subject focus.

Southern Research

In aggregate, 30% of the research focused on the South, and 29% of the works were authored by Southern researchers. There were significant departures from that average in several areas of note. Some 68% of the research on scale and structural impacts of trade on environment were focused on southern impacts, and 62% of the research in this area was conducted by southern researchers. Over half of these studies were concerned with agriculture. Agriculture being one of the greatest opportunities for many developing countries in the area of trade liberalization, and also one of the most significant sources of environmental impact, this is not surprising.

Also above average was the number of studies focused on the trade impacts in the south of environmental measures, at just under half (49%). Of these, 45% were authored by Southerners. This, again, is hardly surprising, given that one of the most significant southern concerns in the trade and environment debates

centres on market access, and how it might be affected by environmental measures in export markets.

Well below average, at 5%, was the number of broad legal analyses by Southern authors. Also low was southern participation in studies of environmental regulatory effects of trade law and policy, at 14%. This is rather surprising, given the central importance of regulatory impacts to negotiations in areas of southern interest, such as investment, TRIPs and services. A number of studies exist on the broader development implications of curtailing regulatory ability (sometimes called policy space) through liberalization. But very few analyses focus on the environment per se.

Note that the volume of Southern research is significantly affected if we withdraw from the analysis just two major IISD projects involving commissioned research (the Trade Knowledge Network Project and the China Council WTO Accession Project). Doing so reduces the percentage of Southern research in the survey from 29% to 21%. If we remove research commissioned by the UNEP/UNCTAD Capacity Building Task Force project, the figure drops further to 18%. If our efforts to adequately survey the existing body of Southern research have been more or less successful, this result indicates a notable lack of robustness to the body of southern research.

Overall Research Focus

Overall, research was heaviest in the area of institution building: analyzing or designing ways to achieve mutual support between trade and the environment. Almost a third (32%) of the research focused on this area, with most of that addressing regional approaches to trade and environment (integrating environment into regional free trade agreements), and conflicts between trade rules and MEAs. This represents a significant shift from the early days of the trade and environment debates, when most research centred testing the linkages by exploring the direct impacts of trade and trade policy on the environment, corresponding with an evident maturing of the debates.

The next most studied area was environmental regulatory impacts of liberalization, constituting just over 20% of the research conducted. Here the major interests were investment (over 9% of all research), TRIPs/biodiversity (just under 3%) and impacts on MEAs (2.6%).

Second only to investment rules in terms of research effort was research on regional trade agreements, at 8.3% of total research. This was followed by broad legal research (6.6%) and scale/structural impacts of agricultural rules and trade (5.9%).

Only 6.9% of the research surveyed focused specifically on negotiating options in the Doha mandate. Of these, the major areas of interest were environmental goods and services (1.9% of total research), agriculture (1.8%). Given what many saw over the last two years as the central importance of the Doha Agenda, and the central importance attached to it by those engaged in the trade-environment debates, this is surprising. Particularly surprising is the minimal amount of research devoted to what is arguably the most directly relevant trade-environment negotiations in the Doha agenda – the relationship between the WTO and MEAs, which received a mere 0.8% of total research.

A much larger percentage of the research (41%), while not focusing directly on negotiating options, dealt more broadly with the issues related to the Doha negotiating agenda. (See Annex C for a listing of what is included in this “expanded Doha research agenda.”) The hope, presumably, would be that the results of this research would still find its way into the policy-making process, by better grounding it in empirical work. The largest component of this work is on investment rules (10% of total research), looking mostly at the regulatory impacts of international investment rules. Also high is the percentage devoted to agricultural issues (8%); it was noted above that much of the research on structural and scale impacts centred on this sector. And there was a large amount of research focused on MEAs (7%), covering *inter alia* their trade impacts, and the impacts on MEAs of trade rules.

Broad Observations

The breadth and volume of current research on trade and environment, as catalogued in this survey, is all the more remarkable as the field itself is only just over a decade old. Initial research on this topic tended to focus on the major policy issues of the moment—the tuna/dolphin dispute in the WTO and the debate about the North American Free Trade Agreement (NAFTA). In particular European researchers took several years before they entered the field, although they now probably produce more of the trade and environment research than their colleagues in other regions. In the early years of the trade and environment debate, research was quite closely linked to policy debates. It now covers a significantly wider area, including topics of more theoretical or academic interest. Indeed, the growing participation of researchers based in universities—as opposed to researchers affiliated with public or private institutions that have an active role in the formulation of policies relevant to trade and environment—is one of the more striking phenomena of recent years. It is accompanied by a steady increase in the number of studies published in peer reviewed journals or books.

5. The New Research Agenda

The preceding analysis of the research surveyed gives us an overview of where the research effort is centred. The next step in the process of elaborating a research agenda is to judge where the major efforts are needed, and to identify where there is a disconnect between the existing efforts and the efforts identified as necessary.

The meetings of the experts group, in particular the first meeting in Geneva, produced a number of recommended directions for future research. These were in the first instance grounded in the results of the survey, and focused on those areas not covered (or inadequately covered) by the existing research effort. They were also grounded in the collective wisdom of this group, and its vision for the future shape of environmental concerns and directions for the world's trading system. The composition and expertise of the group are therefore important in affirming the validity of the resulting research agenda. The group's composition is described in Annex B.

Acting in a role that extended beyond rapporteur for the group's deliberations, IISD also contributed to the elaboration of the research agenda, through its own suggestions and through the detailed description of the sentiments of the group. While the expert group provided extensive input at a number of points, it was never envisioned that the group would in any sense "sign off" on the final results. What follows, then, is strictly IISD's interpretation of the results of the group's discussions, rather than an agenda in any sense endorsed by the group.

Before elaborating the research agenda that results from the process described above, it is worth noting that there are a number of important underlying trends or drivers that will necessarily shape the direction of any useful research. The group discussions noted a number of these trends as background to the discussions on the research agenda. By changing the context in which world trade is conducted, these realities also change the research needs.

For several years the negotiating agenda on trade and environment has been evolving in both the trade and the environmental regimes. In the trade regime there are still signs of significant resistance to addressing these matters fully and constructively. In recent environmental negotiations, the trade aspects have been a significant dimension. This is true of the Biosafety Protocol to the CBD as well as the Rotterdam Convention on Prior Informed Consent (which took up an issue long debated in the GATT/WTO) and the Stockholm Convention on Persistent Organic Pollutants.

Some changes in the trade regime also have implications for research on trade and environment. The failure of the Cancun Ministerial Conference to reach consensus is liable to reshape the negotiating agenda within the WTO, as is the failure of the regional-level talks at the recent Miami FTAA Ministerial meeting. The most visible change in the WTO was the strengthened voice of developing countries, or at least of large developing countries. At the same time it will give impetus to negotiations outside the WTO, in particular to bilateral negotiations and to the emergence of regional groupings. These developments pose a range of additional issues for research as they create new challenges for the trade and environment agenda but also opportunities to address more effectively environmental issues that are less than global or that require significant articulation between global and local levels.

In light of these developments it is possible to identify several factors that will serve to frame the further development of the trade and environment research agenda.

- A continuing increase in environmental stresses, including climate change, persistent organic pollutants and other problems covered by trade-related MEAs.
- The negotiation process under the Doha mandate – a key driver for much trade-environment related research, whether the agenda is modified to reflect the outcome of Cancun or continues largely unchanged.
- A rise in the capacity and importance of the developing country voices in the WTO system, in part hastened by the accession of China and evidenced inter alia by the formation of the G21.
- The proliferation of bilateral and regional agreements on trade, investment and other WTO-related issues.
- The increasing importance of foreign direct investment in the development strategies of developing countries.
- The increased role of the private business sector as an actor (for better or for worse) in the pursuit of sustainable development.
- A changing balance between official development assistance (ODA) and liberalization of international markets, with the share of ODA as a proportion of resources available to developing countries continuing to decline,
- The changing role of (international) civil society and the impact of a continuing push for democratization.
- The linking of trade policy to broader policy aims of the major developed countries,
- The evolving UN system, under the impact of tensions between members of the Security Council and the need to respond to a global agenda that continues to expand.

The research agenda proposed here is broken down into five broad headings, all of which of necessity have some overlap:

- Developing country research,
- Research on regional and bilateral developments,
- Regulatory reform, in particular reform of environmental policies
- Policy research on WTO issues, and
- “Bigger picture” research.

Developing Country Research

One of the conclusions from the survey of existing research efforts was that southern researchers and southern research topics are underrepresented, and that the existing body of southern research depends disproportionately on a few large projects involving commissioned work. Given the underlying dynamic noted above—that developing countries are assuming ever stronger voices in the WTO—and the dramatic need for sustainable development in those countries, this is arguably an area where greater research efforts need to focus. Suggested areas of research include:

The impacts of liberalization: The survey showed a great deal of this type of research already being done, but almost all of it is concentrated in the areas of scale and structural impacts, and most of that in the agricultural sector. There is a need for more research of this type, more broadly cast. Areas of need include the impacts of potential agreements on investment and services on governments’ ability to regulate. More is also needed in the area of environmentally preferable goods and services. And finally, even in the case of structural and scale impacts more could be done. What, for example, are the expected environmental impacts in China of the end of the Multifibre Agreement (MFA), when it is predicted that Chinese cotton imports will surge tremendously together with much increased textile exports?

Research on capacity building: Capacity on trade issues in developing countries will co-evolve with their strengthened voices in the WTO. It is therefore an important factor in promoting sustainable development in those countries. The central role of capacity building has been recognized in the Doha Declaration but the traditional WTO model of capacity building is narrower than what is needed. There is an urgent need to discover what makes capacity building effective, and the survey indicates almost no research effort in this area. Effectiveness here means enabling policy makers to better identify and promote their national interests in a global framework and to participate effectively in international negotiations. For many developing countries the identification of global public

goods represents a major challenge, let alone participation in international processes designed to secure them. What models work in what circumstances? What principles should guide efforts at capacity building?

Operationalizing special and differential treatment: WTO members have long recognized the need for special and differential treatment for developing countries, but it is also widely recognized that the current models have failed. How can we construct a SDT that actually takes account of the needs and abilities of the receiving states, reflecting the wide range of economic conditions in these countries? There may be a need to allow developing countries the same type of policy space that was allowed developed countries when they were less developed. In this research effort, the policies and practices of non-WTO institutions such as the World Bank and the IMF or UNCTAD will also have to be considered, as they also have significant impacts on policy space. Research in this area was practically non-existent in the survey.

What are the prerequisites to gains from liberalization? Despite the liberalization that has occurred in the recent decades—both multilateral and unilateral—many developing countries have not increased their share of world trade. Foreign direct investment is very unevenly distributed. Even countries that have had economic success in the global competition for FDI and export markets have not thereby achieved anything resembling sustainable development. There is a need for research that explores what institutions and conditions—both at the domestic and international levels—will allow countries to most successfully exploit the opportunities provided by the liberalization of trade and investment. This line of research, like several of the ones suggested here, is as much development-oriented as it is environment-oriented.

Research on Regional and Bilateral Developments

The expert group, meeting before and during the Cancun Ministerial, did not have a chance to ponder the significance of its collapse for the research agenda. But it seems clear that the failure of Cancun negotiations will probably result in a further shifting of emphasis away from the WTO towards regional and bilateral trade agreements. Such agreements are subject to less public scrutiny and have received notably less attention from researchers. While the survey shows that some regional agreements—the NAFTA and the FTAA in particular—have generated a steady stream of research, others such as the Andean Pact or the African groupings have been virtually ignored. Mercosur and the Asia Pacific Economic Cooperation Forum (APEC), ASEM or ASEAN and the 10+1 (ASEAN plus China) negotiations occupy an intermediate position. Bilateral agreements are so numerous, and exhibit such variation, that it is very difficult to identify salient trends, just as it is almost impossible to follow each of the agreements to

assess its significance. Almost as a rule, bilateral investment agreements have been concluded with sparse public debate and correspondingly little research.

Developments in regional agreements. Regional agreements have become the most dynamic sector of world-wide trade negotiations. Several significant negotiations are currently under way, including the Free Trade Area of the Americas (FTAA), plans to consolidate Mercosur and the Andean Pact, the 10+1 negotiations in Asia, as well as negotiations between the European Union and Mercosur and its Mediterranean neighbours. Two overlapping agreements exist in Central America and the Caribbean. The recently adopted Cotonou Agreement between the EU and its African Caribbean and Pacific (ACP) partners envisages the formation of regional groupings as negotiating partners for the EU. It now appears that there will be three African groupings and one each for the Caribbean and Pacific regions. All of these developments require research attention, focused on the “templates” being used and their environmental implications, and on the overall trends we can identify, and their political and environmental implications. A variety of regional responses to the trade and environment agenda have emerged and it will be important to develop the institutions that are appropriate to each of the emerging regional groupings.

Regions without agreements. All this regional activity highlights the situation of countries or regions that do not have cooperative traditions to build upon. This is the case of many Asian and Middle Eastern countries and Jamaica in the Caribbean. South Africa finds itself in a difficult situation in the face of the Cotonou agreement and its regionalization process. It is linked to its neighbours through the SADC cooperation agreement, yet its neighbours are all signatories to the Cotonou agreement and must link with other countries, leaving out South Africa. Some countries of Eastern Europe that are not EU accession countries but are members of the WTO likewise find themselves in an intermediate position. The problems of these countries in a regionalized international system require separate attention.

Bilateral agreements. Bilateral agreements have long been a feature of the trade regime, but they have thus far tended to play a subordinate role. In several instances, such bilateral agreements may now emerge as a principal means of promoting liberalisation along lines that reflect the interests of the most powerful countries. The United States in particular, long reluctant to enter into many bilateral agreements, appears to have embarked on a conscious policy of developing a network of such accords. Virtually no research has been done on the environmental impacts of such bilateral agreements. When they are concluded between highly unequal partners, as in the case of Israel, Jordan or Chile with the United States, the economic effects that can be attributed to the agreements may actually be modest. Consequently the environmental effects

may also be presumed to be modest. The same cannot be said of bilateral investment agreements, which have proliferated in recent years, not least as a response to the failure of negotiations for a Multilateral Agreement on Investment (MAI) between members of the Organisation for Economic Cooperation and Development (OECD). Evidence is accumulating that these bilateral investment treaties (BITs) are having consequences that are far more significant, from the perspective of the environment and other non-commercial policy concerns, than expected. The BITs require a good deal more attention than they are getting.

Subsidiarity. Environmental regimes are characterized by subsidiarity, that is by the need to ensure the smooth working of the regime at various levels of action, from the local to the international, while seeking to keep activities at the lowest level consistent with effectiveness. Trade regimes work differently and the problem of subsidiarity has caused some difficulties as trade agreements tend to be global in orientation. These issues have received limited research attention even though they pose some difficult theoretical challenges in particular with regard to the institutions that are required to ensure the smooth operation of regimes subject to subsidiarity and their relationship to universal trade rules. This is a research concern that relates closely to the need for greater attention to regional trade agreements as a forum for environmental issues.

Regulatory Reform, in Particular Reform of Environmental Policies

A step beyond assessing the impacts of trade and trade liberalization on environmental management is a body of research that asks: given those impacts, what institutional changes should occur within the environmental regimes, and in their relationship to other regimes such as the international trading system?

International Environmental Governance. The trade regime is governed by universal rules that recur over and over again in different trade agreements, in particular those concerned with non-discrimination, transparency and dispute settlement. International environmental regimes are very diverse and utilize different institutions, depending on the nature of the issues that they seek to address. The proliferation of environmental regimes is undesirable from the perspective of the trade regime; it is also seen as increasingly problematic from an environmental perspective. There are numerous proposals for international environmental governance, ranging from the creation of a World Environment Organization to modest changes to the status quo. Not all of these proposals are driven by the trade concern but most of them have implications for the trade and environment relationship that merit more careful consideration.

Distributed governance. The trade regime overlaps more and more with numerous other international concerns, of which the environment is the most complex and has proven the most difficult to accommodate. The relationship between the WTO and other international organizations (and nongovernmental organizations for that matter), identified as important in the WTO Agreement itself, is becoming increasingly critical for the effectiveness of both trade and environment regimes. The emerging relationships can be described as “distributed governance,” that is the assignment of specific roles to different organizations in a defined relationship. Yet not much research attention has been devoted to the problem of developing and managing such relationship between the WTO and other organizations effectively.

Policy Research on WTO Issues

Policy research is needed on the ways in which the WTO as an organization (an organization that includes the body of WTO law) could be made more capable of fulfilling its stated sustainable development objectives. This, of course, is the type of reflection that can rarely occur within the context of the negotiations, which is not amenable to exploratory thinking about policy options. In fact there seems to be little capacity within the trade regime to think about these kinds of questions. Neither, the survey shows, has this kind of thinking been much done outside the WTO, though other types of institution building research have featured prominently in the overall research effort. This is essentially a research agenda that focuses on the position of the WTO within the changing structure of international governance in a time of globalization. Many areas of this type of research featured in the survey, and in fact these kinds of institutional solutions were as a group the most heavily researched of any area. But the particular suggestions presented below are, within that broad theme, sub-issues in need of further work.

Agriculture: Defining a new paradigm: The current negotiations on agriculture are stalled, with little immediate prospect for revival. This is lamentable from the perspective of developing countries that want to increase their market access, as well as from the perspective of developed countries that want to ensure that agriculture contributes to a variety of non-trade objectives. One reason might be the existing structure of the Agreement on Agriculture, which breaks domestic support for agriculture into three categories (“boxes”) in a way that offers little potential for advancing sustainable development goals. A new paradigm for negotiations is needed – one that starts by defining the goals of agriculture talks, and the practice of agriculture. These goals presumably run more broadly than simply lowering barriers to trade and increasing production. This approach would set up an entirely different negotiating structure which, broadly enough

cast, could encompass such disparate but related areas as traditional knowledge, PPMs, technology transfer, food security and environmental protection.

An evolution of the TPRM: The trade policy review mechanism (TPRM) is a unique structure, created during the Uruguay Round as a proactive manner of improving trade-related practice outside the context of the dispute settlement mechanism. It closely resembles international environmental policy mechanisms in that it relies heavily on disclosure of problems to hasten their resolution. It is a model that could usefully be adapted to improve a wider range of domestic practice than just trade policy, including subsidies (a subsidies policy review mechanism, SPRM) or measures designed to foster sustainable development, as measured against a country's commitments. More incremental evolution of the mechanism might involve simply opening up the existing process to non-state actors, who could bring evidence and argue positions. Taking the goals of the mechanism at their face value, such changes should be welcomed as making the TPRM more effective (by all but the countries under review – a thorny political problem since all countries will eventually be reviewed).

Environmental Subsidies: There has been a fair amount of research on the subject of fisheries subsidies, but not as much on the subject of how the WTO might be involved in the wider process of subsidy reform as a promoter of sustainable development. Is there an advantage to a sector-by-sector approach (e.g., fisheries, cotton)? Does the basic WTO approach to subsidies serve as an adequate platform for subsidy reform? Research in this area might try to discern general principles that would guide reform efforts across a number of different sectors. An issue that has received little or no attention, but which is sure to be important in the near future, is the question of subsidies in the context of the GATS. Could we elaborate a sustainable development-promoting definition of subsidies in this area?

Governance of the WTO: The WTO was created on the foundation established by the General Agreement on Tariffs and Trade (GATT). It was one of the signal achievements of the Uruguay Round, yet the creation of the WTO left an important agenda of internal reforms untouched. Decision-making is “medieval,” in the words of Pascal Lamy. The use of committees of the whole to discuss issues over and over again has never been questioned. The culture of the WTO remains a culture of negotiation rather than that of an organization that has a central role to play in global governance in an era of globalization. Despite significant pressure from civil society and from a few member states, the agenda of transparency remains largely unfinished. All of these issues are critical since they affect the ability of the WTO to interact constructively with other international institutions that have a vital role in relation to sustainable

development. Moreover, they impair the ability of the WTO to effectively achieve its own mandate – a mandate that in words if not in fact relates to sustainable development. Yet many of these issues have not received adequate attention from researchers, making the process of WTO reform even more difficult than it would be otherwise.

The WTO in a world of change. At least two trends cited above are changing the context in which the WTO finds itself. First, regional and bilateral agreements on trade, investment and other trade-related areas are mushrooming. It is not clear what these agreements – which typically have elements that go beyond the WTO obligations – imply for sustainable development, much less what they imply for the WTO. Both at a legal and a political level, there is a need for better understanding.

Second, it was also noted above that developing countries are becoming an ever stronger force in the WTO. The submission on agriculture, tabled as a counter to the US-EC deal and signed by Brazil, India and China among others, illustrates this well. What does this dynamic mean for the future? Will the bigger players shift the fora for decision-making elsewhere? Will the WTO as an institution need to undergo fundamental change in process and/or substance?

Technology Transfer: One of the unfulfilled promises of the TRIPS agreement as well as of many environmental agreements is the prospect of technology transfer. This remains one of the most difficult and controversial of issues and research is needed to identify new avenues to promote the availability of appropriate technologies for developing countries. This is particularly significant in relation to the prospects for addressing climate change. Whether in the context of the existing regime based on the Kyoto Protocol or based on some other arrangement, reducing greenhouse gases will require a function structure for technology transfer.

“Bigger Picture” Research

Some of the needed research can be classified as “bigger picture” research, because it looks at negotiations and institutions that arguably transcend the WTO and other trade regimes. Two such lines of research are identified below, neither of which received much, if any, research effort according to the survey.

An international agreement on investment. One of the trends noted above was the increasing importance of foreign direct investment in the development strategies of developing countries, and of the private sector as an actor in the pursuit of sustainable development. The WSSD partnership outcomes and the UN Global Compact are evidence of this last phenomenon, though both present

a rather beatified rendition of the role of business. As well as the traditional forms of investment, more and more private investment is flowing into formerly public water infrastructure and electricity sectors in cash-strapped developing countries, with massive potential sustainable development impacts. It is imperative that we look beyond the narrow confines of what is possible to negotiate in the WTO on investment, to a more balanced form of international agreement that incorporates both rights and responsibilities. As well as investor protections, such an agreement might incorporate corporate codes of conduct, disclosure requirements, and other corporate responsibilities, and might affirm the right of the state to regulate. The ideal shape of such an agreement, as well as the nature of the obstacles to achieving it, are an important element of the new research agenda.

Commodity markets and sustainable development. A surprising number of issues that link trade and environment turn out to revolve around the production and trade of commodities – agriculture, fisheries, mining, or forestry. Producers of commodities compete with each other in markets that are highly contestable and sensitive to shifts in supply or demand. On the one hand, commodities are by definition extracted from the natural environment, resulting in an inescapable environmental impact. On the other hand, commodity markets are volatile and typically leave the primary producers – those with direct responsibility for environmental impacts – as price takers. Consequently cost internalization is extremely difficult. The distance from producer to final consumer (who should theoretically pay for environmental costs) in commodity markets has been growing and the number of intermediaries to secure supply has also been increasing. Product – or value – chain analysis is emerging as an analytical tool to identify the forces that determine the environmental outcomes of commodity production and trade.

6. *Strengthening the Impact of Research on Trade and Environment*

The policy debate on trade and environment continues to evolve rapidly, so that much research on this issue has potential implications for policy. This raises the question how that research might be more effective as an agent of change – a question that engaged the experts group at its Geneva meeting. Several of these lines of thought are summarized here with a view to strengthening the impact of this research. Promoting these as areas of priority action is arguably as important a task as promoting the needed areas of research as identified by the present exercise.

Link Research to Policy and to Stakeholders.

Policy research is not research for its own sake. It assumes its full value when its results are understood by those who make the relevant policies, as well as by the wider policy community of stakeholders. So the question of how to ensure that research links to policy should be at least considered by anyone attempting to create a research agenda. This is less of a problem within the legal community, where those who make the relevant rulings will read the scholarly literature pertaining to the issues at hand. But it is a pressing problem in the area of non-legal policy research.

A Coordinated Approach to Research.

One of the experts group members proposed a “DSM pipeline” – a mechanism for identifying the WTO disputes coming down the pipeline, and for determining what types of research might most urgently be needed by the time the disputes reached fruition. Another suggested that there should be an available pool of research funding for which the various researchers would compete. Both of these are examples of coordinated approaches to the conduct of research—an approach tested and pioneered by such efforts as the Concerted Action on Trade and Environment (CATE), a European research consortium, and IISD’s Trade Knowledge Network. There are clear benefits to such collaboration and coordination—not the least of which is wider dissemination of the final results—, but there are also a number of significant difficulties in putting it together.

Involve More Southern Researchers.

Several members of the group noted the enormity of the need for research in the South, as compared to the relatively small existing effort. That need has been discussed above, in justifying a program of research devoted to Southern issues. But at the same time as we recommend the research be done, we should think about *how* it might be done. What needs to happen to change the status quo? It has been suggested that the research network model might be a useful way to deal with scant human and financial resources, and common research problems. Such a model has been successful in other contexts (cf. the Latin American Trade Network, and the Trade Knowledge Network), but a number of useful lessons can surely be drawn from these existing efforts.

Move from Trade and Environment to Trade and Sustainable Development.

Several members of the experts group protested that the real research needs, particularly in developing countries, are not on trade and environment, but are rather on trade and sustainable development, of which the former is a subset. This is something that IISD also believes, and is a truth that will guide our future efforts in this area.

Annex A: Defining the Categories

Some explanation of the various categories is offered below. This is offered as a supplement to help make it clear why, for example, a particular piece of research on MEAs ends up, for example, under Institution Building (3.1), rather than under Impacts of Environmental Policy (2.4), Analysis of Doha Negotiations (6.9) or Broad Legal Analysis (4.0).

Impacts of Trade, Trade Policy

The categories here borrow from the OECD taxonomy of trade and environment linkages – a framework that has stood the test of time¹. They are sub-divided into four areas:

Direct, product, technology impacts. This is research on the direct impacts of the traded products, or of the fact of trade. It does not, for example, cover analysis of the rules governing hazardous waste trade, or proposed to govern trade in environmental goods and services. Rather, it looks only at the environmental or economic impacts that such trade may engender.

Scale, structural impacts. These are the impacts of trade brought about by the changes that liberalization causes in the trading economies – an increase in the scale of economic activities, or in the composition of the economy as some sectors increase or decrease in relative importance.

Environmental regulatory effects. These are the impacts of trade agreements, rather than of trade itself. Specifically, they are the legal impacts that trade agreements have on the ability to regulate on environmental matters. Thus, for example, the research included here on labelling for environmental purposes focuses only on the impacts that trade agreements have, might have or should have on governments' ability to regulate through labelling.

Cross-sectoral impact assessments. This type of research is broadly focused at discovering the impacts, or potential impacts, of trade liberalization on an economy-wide or regional basis. This type of research, which encompasses all three types of research listed above in a single exercise, is also known as sustainability impact assessment (SIA). It has been undertaken primarily by and for national and international public agencies. It is not as common as research that focuses on sectoral effects – research covered in the categories listed above.

¹ OECD. *The Environmental Effects of Trade*. Paris: OECD, 1994.

Impacts of Environmental Policy

This type of effect is the obverse of that described in the previous section, which looked at trade's environmental impact. It includes the various ways in which environmental policies might impact on trade flows or trade policy. Note that the research included here on pollution havens addresses the first of two questions to be addressed in that area: do firms in fact migrate (in response to environmental policy)? The second question—if so, what are the regulatory impacts?—is addressed in the previous section.

Institution Building

The research here looks at the ways in which we might address conflicts between regimes for managing trade and environment. – the new institutions that we might build to create the desired mutual supportiveness. The research included here on sustainability impact assessments is strictly analysis of their effectiveness – a methodological approach. The actual exercises in assessment are grouped in section 1.4: Cross-Sectoral Impact Assessments. Similarly, the research on capacity building does not include a catalogue of existing efforts at capacity building, which is beyond the scope of this survey. Rather, it includes analyses of the methods for, need for, and effectiveness of current efforts at capacity building as an institution that can allay trade-environment conflicts.

Legal Analysis

This category of research includes analysis of trade law—as written or as elucidated through dispute settlement proceedings—aimed at better understanding the implications for environmental regulation and management.

Economic Analysis

This category of research includes *methodological* analysis of the trade-environment relationship. It includes, for example, theoretical work on the environmental Kuznets' curve, and work to help develop methodologies for economic analysis and valuation studies. The latter includes, for example, the development of methodologies for evaluating environmental and economic impacts of subsidies.

Analysis of Doha Negotiations

This specialized category includes analysis of the negotiations themselves. Specifically, it includes that body of work that seeks to evaluate the negotiation options in various areas. A more inclusive presentation of Doha-related research is offered in Annex C, where the same list of categories is more widely cast, to capture any research going on in the areas covered by the Doha Agenda, even where that research is not directly focused on the negotiations. It is important to

emphasize that the environmental dimension of the Doha negotiations is not limited to the issues that are explicitly identified as “environmental” in the Doha Ministerial Declaration. They already represent a challenging agenda, including the relationship to MEAs, prospects for preferential treatment of environmental goods and services, the relationship between the Agreement on Trade Related Intellectual Property Rights (TRIPS) to the Convention on Biodiversity (CBD) and fisheries subsidies. Yet several other major issues on the Doha agenda also deserve attention from an environmental perspective, in particular agriculture and investment.

Annex B: The Experts Group

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Annex C: Categories, Inclusive Doha Research Agenda

One of the categories of research surveyed is work focusing on negotiating options for the Doha Development Agenda. The analysis of survey results also makes some observations about a broader grouping, which also includes research *related* to the items on the Doha agenda, but which may not focus directly on the negotiations themselves. This annex lays out how this broader definition of Doha-related research is defined in the analysis.

Agriculture:

- 1.2.1: Scale, structural impacts of trade, trade policy, agriculture
- 6.1: Analysis of Doha negotiations, agriculture

Services:

- 1.3.1: Environmental regulatory effects of trade, trade policy, services liberalization
- 6.2: Analysis of Doha negotiations, services

TRIPS:

- 1.3.3.: Environmental regulatory effects of trade, trade policy, TRIPS (esp. impacts on biodiversity)
- 6.3: Analysis of Doha negotiations, TRIPS

Investment:

- 1.3.2: Environmental regulatory effects of trade, trade policy, investment liberalization
- 3.9: Institution building: international investment agreements
- 6.4: Analysis of Doha negotiations, investment

Competition Policy:

- 6.5: Analysis of Doha negotiations, competition policy

Government Procurement:

- 6.6: Analysis of Doha negotiations, government procurement

WTO Rules (Subsidies):

- 6.7: Analysis of Doha negotiations, WTO rules

Dispute Settlement Understanding:

- 6.8 Analysis of Doha negotiations, DSU

WTO-MEAs:

- 1.3.8.: Environmental regulatory effects of trade, trade policy, MEAs (impacts of trade rules)
- 2.4: Impacts of environmental policy: trade impacts of MEAs
- 3.1: Institution building: WTO-MEAs
- 6.9: Analysis of Doha negotiations, WTO-MEAs

Environmental Goods and Services:

- 1.3.1: Environmental regulatory effects of trade, trade policy, services liberalization
- 6.10: Analysis of Doha negotiations, Environmental goods and services

Environmental Measures and Market Access:

- 2.3: Impacts of environmental policy: environmental measures and market access
- 6.11: Analysis of Doha negotiations, environmental measures and market access

Labelling for environmental purposes:

- 1.3.7: Environmental regulatory effects of trade, trade policy, labelling for environmental purposes
- 2.1: Impacts of environmental policy: labelling for environmental purposes
- 6.12: Analysis of Doha negotiations, labelling for environmental purposes

Capacity Building:

- 3.7: Institution building: capacity building on trade and environment
- 6.13: Analysis of Doha negotiations, capacity building

The Role of the CTE:

- 6.14: Analysis of Doha negotiations, the role of the CTE