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## Trade and environment: *green light* or red light?

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One aspect of globalization that Latin American and Caribbean countries will have to confront is the increase in trade restrictions on environmental grounds. Not by chance, the first dispute judged by the new Appellate Body of the World Trade Organization that began to function in February 1996 was an environmental dispute involving the United States and Latin American countries. Two trends—more open economies and rapid growth in international trade, on the one hand, and, on the other, the broader acknowledgement of “environmental responsibilities” by the international community, as expressed in a number of new multilateral environmental agreements—have brought to the forefront two questions: are trade restrictions an effective instrument for implementing environmental policy? and to what extent are environmental restrictions changing international trade and competitiveness? Policy-makers are in fact replying to these questions in contradictory ways, as empirical studies to assess the impact of environment-related trade measures and trade-related environmental measures are only beginning.

## I

## The goal and the instrument: trade or environment?

The interaction between environmental policy and international trade has brought up two questions that policymakers have been facing and on which they have been taking decisions, without having the chance to wait for the answers that academics and their research might provide. One question starts with the environment, the other starts with trade:

1) Can environmental goals be reached through rules for international trade or, in other terms, are trade rules an adequate instrument for reaching environmental goals?

2) Are international trade flows and competitiveness being significantly changed by increasing environmental restrictions of diverse origin?

Those who reply to the first question with a decided "yes" in general hope to propagate and magnify "good care of the environment" through the progressive "greening" of international trade. Those who reply positively to the second question, in contrast, foresee increasing restrictions on international trade, coming from various sources, such as the environmental awareness of consumers in certain countries, trade clauses in international environmental agreements, campaigns driven by large international non-governmental organizations, interests of industries that have acquired a competitive edge in "environmental goods", or attempts by other industries or activities to take advantage of environmental arguments for protectionist purposes: in short, "red lights" in international trade, imposed on real or alleged environmental grounds. From the latter angle, the concern is no longer whether trade is an useful instrument of environmental policy, but "how to compete" given rising environmental requirements in international trade.

□ This text developed from notes for a presentation at the Seminar "Environmental Restrictions and Challenges for International Trade and Development" (University of Chile, Faculty of Economics and Administration and Faculty of Sciences, Department of Ecological Sciences, 29-30 April 1996. Its main points were presented at the conference "European Union/Rio Group Dialogue on Sustainable Development", organized by the Institute for European-Latin American Relations (IRELA) and held at The Hague on 27-28 February 1997.

These questions are not symmetrical. Even if one were to obtain ample evidence that trade bans and restrictions bear no relationship to their stated environmental goals—as seems to be the case, *inter alia*, with the relationship between elephant poaching and the ivory trade ban<sup>1</sup>—trade restrictions on environmental grounds could still be *de facto* influencing competitiveness and trade flows. Both are, in principle, empirical questions. A number of trade bans and restrictions have been established with environmental aims, and it should be possible to examine whether the particular environmental aim (to protect dolphins or marine turtles through a ban on the importation of tunafish or shrimp, or to reduce air pollution through a ban on the importation of a certain gasoline mix) was attained in each instance and whether that result was due to the use of the trade instrument in question and not to other causes. The attainment of a stated specific environmental goal does not necessarily mean, however, that such a result is the best for overall environmental prudence, since reduced exports and less development could well have had, in the end, a relatively larger negative impact on the environment. On the other hand, it is at least possible to estimate the impact of specific environmental measures on trade flows (the reduction achieved in a given country's exports of tuna fish, or gasoline, or ivory) and, in its turn, the consequences of that reduced trade for employment and the overall development of the country. Thus, in those cases where a trade measure was taken by a country in order to reach an environmental goal within that same country, the environmental benefit at one end can be compared with the reduction of exports at the other end and, further, with the impact of less exports on the country's development.

Formulating the questions in this way makes possible some assessment of the benefits and damages for the parties in a dispute, although only to a very limited

<sup>1</sup> There is an amazing number of environmentalist studies showing that the ivory trade ban, even though it reduced international trade in ivory, has not helped the conservation of elephants. See Adams and McShane, 1992.

extent.<sup>2</sup> But even if we had many examples to add to this, this would of course not answer the "aggregate" question as to whether the international trading system or international trade is a cause of environmental deterioration, globally or in individual countries, as a few environmentalists continue to argue. As David Pearce, a leading environmental economist, has concluded, it is hard to demonstrate that the environmental degradation accompanying free trade is truly brought about by trade rather than some other factor, and that the loss of human well-being it represents is larger than the loss ensuing from less trade: "No-one has yet calculated the monetary value of the environmental losses from international trade. Environmentalists can thus argue that the losses are very large relative to the 'gains from trade'. We simply do not know" (Pearce, 1994, p. 35).

Given the "state of the art" of the economic valuation of environmental goods and damages, it is not too far-fetched to posit that we will never know the exact figures in this comparison. Following this same line of reasoning, this would mean that there is no sound basis for the allegation that the present export-oriented development strategy of Latin America and the Caribbean is in general damaging the environment. Even though we can try and put numbers to the value of *n* turtles saved, as compared to the slower economic development of a country subject to a ban on its shrimp exports, the methodology available for such valuation

will never result in precise numbers and can only provide a range of estimates. Even so, the valuation is worth trying, and rough estimates of trade-offs are a less risky basis for policy-making than the presumption of some environmentalists that the value of something that cannot be measured exactly is therefore infinite.

After reviewing a considerable number of empirical studies, Markandya (1994, pp. 10-22) raises these same questions from a slightly different angle, namely, whether trade liberalization conflicts with "sustainable development" and whether policies aimed at "sustainable development" will restrict international trade. His conclusion is that "the evidence on both questions is mixed", and that one way or the other it is not significant.<sup>3</sup>

At all events, policy-makers cannot afford to wait for all the measurements which should be attempted. In a sense, asking whether free trade is good or bad for the environment has as much concrete meaning as asking whether it would be better to live on Mars to protect the environment on Earth. Export-oriented development strategies and integration into the world economy are being pursued everywhere in the developed and, more dramatically, in the developing world, and it is hard to find anyone willing to reopen this debate in order to defend, on environmental grounds, the advantages and/or feasibility of inward-oriented development strategies.

## II

### The international context

The two questions on the interaction of trade and environment are actually being answered in a context where two main trends are at work: on the one side, globalization, which, even if it is not only economic, is driven by global economic integration and a rapid increase in international trade; on the other side, a broader acknowledgement of "environmental respon-

sibilities" of societies and governments and the recognition of the need for international cooperation to meet those responsibilities. Agenda 21: Programme of Action for Sustainable Development, and the Rio Declaration on Environment and Development,<sup>4</sup> as well as an increasing number of multilateral environmental agreements (MEAs), are as important benchmarks in

<sup>2</sup> No-one has ever calculated scientifically how much "sustainable development" was "lost" by Mexico, Venezuela and Colombia because of the tunafish embargo imposed by the U.S. since 1991, and how much "environmental protection" for the world's dolphins was "gained" in exchange. How many of the 25,000 jobs in Mexican tuna production were lost or shifted to environmentally damaging activities? Some say that the only difference between the Asian Pacific and Indian Ocean tuna and the Latin American tuna that it replaced was that it was far away from the eyes of U.S. environmentalists.

<sup>3</sup> In his review, Markandya draws, among others, on case studies prepared in the framework of the UNCTAD/UNDP Research Programme on Trade and the Environment in which he participated. He is among those who have dismissed rather too easily the issue of the costs imposed on developing countries by new environmental restrictions in their export markets.

<sup>4</sup> Adopted at the United Nations Conference on Environment and Development, held at Rio de Janeiro in June 1992.

this context as the Final Act of the Uruguay Round approved in Marrakesh.

Since 1950 the volume of world merchandise trade has been growing faster than world output. It is true that during this period of over forty years the trade elasticity of world output has varied. It was very low between the mid-1970s and the mid-1980s, but has been much higher in the 1990s. In 1995 trade growth was almost three times as fast as output growth. Despite some narrowing of the difference, it still grew almost twice as fast as output in 1996, and the difference is expected to remain approximately the same in 1997.

These trends cannot be attributed only to the various GATT trade liberalization rounds that started in 1950 and culminated with the Uruguay Round. Other factors have been studied, such as technological changes that have reduced communication and transport costs, or the higher degree of industrialization that has brought product development, specialization and growing inter-industry trade. But the point to be emphasized here is that government policies have also played an important role, by liberalizing trade and building a rules-based system of international trade. Governments have taken part in eight GATT Rounds, and as a result the average import tariffs of industrial countries on manufactures have come down to less than 4% (ECLAC, 1996, p. 134). It is also true, however,

that the tariffs of the industrial countries on the products of greatest interest to developing countries (in particular textiles, leather and footwear, and agricultural products) are much higher – again as the result of policies and differences in bargaining power. Furthermore – and even more important for the subject under discussion here – non-tariff barriers and “grey area” measures (real or alleged environmental protection included) are nowadays at the core of development concerns and World Trade Organization activities (Agosin and Tussie, eds., 1993).

The Latin American and Caribbean countries not only reflect these trends, but also helped to define them. In the period immediately before the Uruguay Round, Latin American countries joined the GATT in growing numbers and virtually all are now members of the World Trade Organization. Latin American governments had a strong participation in the Uruguay Round, with a small but highly visible and skilled group of negotiators.<sup>5</sup> A complex web of subregional trade and economic integration agreements in Latin America and the Caribbean, and the major steps towards trade liberalization and integration being taken by the countries of MERCOSUR in South America, are further evidence of a very strong policy option in favour of trade liberalization and integration into the world economy.

### III

#### Trade as an instrument

The effectiveness of trade as an instrument of environmental policy is far from established.<sup>6</sup> Yet international trade is being increasingly used as an instrument of environmental policy, at different levels, unilaterally or multilaterally, sometimes on a voluntary basis, as with ecolabels or some of the clauses in multilateral environmental agreements (MEAs), but sometimes imposed on individual countries. It was no accident that the first case that the new WTO Appellate Body had to report on was a dispute over “environment and trade”. Venezuela, later joined by Brazil, had requested in 1995 the establishment of a WTO panel to examine their claim that United States rules for gasoline, following the rules established by the US Environmental Protection Agency to implement the US Clean Air Act, applied to imported gasoline standards that dif-

fered from those applied to the domestic product. The report of that panel, presented to the WTO Dispute Settlement Body in February 1996, in fact concluded that the US gasoline standards were not consistent with the internationally agreed trade rules, in that they violated Article III of GATT, the “national treatment” provision retained in the WTO agreements, which requires that goods imported from members must be treated no less favourably than the equivalent domestically-produced goods, in respect to all legislation.

<sup>5</sup> The names of the late Leopoldo Tettamanti from Argentina, Rubens Ricupero, Georges A. Maciel and the late Paulo Nogueira Batista from Brazil, Patricio Leiva from Chile, Felipe Jaramillo from Colombia, and Julio Lacarte from Uruguay, come easily to mind.

<sup>6</sup> For a thorough examination of the pros and cons, see Low, (ed.), 1992. See also Pearce, 1994, and Markandya, 1994.

Moreover, the panel considered that the U.S. gasoline standards under consideration could not be justified under the GATT Article XX exceptions admitted in paragraphs (b) (measures "necessary to protect human, animal or plant life or health"), (d) (measures to secure compliance with laws or regulations which are inconsistent with GATT agreements) and (g) (measures "relating to the conservation of exhaustible resources if such measures are made effective in conjunction with restrictions on domestic production or consumption"). The United States appealed to the WTO Appellate Body in the same month of February 1996, and almost one year later, in January 1997, the Appellate Body judged that in fact the US policy was incompatible with WTO rules in that it treated Venezuelan and Brazilian gasoline less favourably than domestic gasoline.

Strictly speaking, the gasoline dispute in the WTO was not an environmental case: the dispute was not over the environmental goals pursued by the country which discriminated against imports, and there was no discussion on whether those goals were being reached in the best way, or even whether they were being reached at all. The dispute was over the use of trade as an instrument to reach those goals. According to the report of the panel of experts, WTO members are free to set their own environmental objectives, but trade discrimination is not an accepted instrument for pursuing them.

Regional and subregional trade agreements in Latin America and the Caribbean have of late tended to include protocols regarding environmental aims to be pursued in their trade (or despite their trade), and some have even included negotiations aiming at, if not

harmonization, at least some degree of compatibilization of environmental rules and regulations of the partners in order to establish a fair basis for competition among their productive sectors. Here, the concern is to identify potential differences of interest and prevent future disputes.

Though unilateral trade actions with environmental purposes, or even environmental directives linked to regional integration schemes, may be the most publicized cases, especially when the parties involved make use of the dispute settlement mechanism of the World Trade Organization, a far more important area deserving study is the present or potential impact of trade clauses in a growing number of multilateral environmental agreements (MEAs). Some of these clauses are not compatible with WTO rules because they discriminate between countries, while some of them provide for protection of the environment in a country other than the one imposing the measure, thus constituting an "extraterritorial" dimension that is also incompatible with free trade principles. However, trade measures called for by multilateral environmental agreements derive legitimacy from their stated goal of protecting the "common heritage of humanity" and are less likely to be disputed in WTO than those adopted unilaterally and invoking domestic laws (such as the U.S. Clean Air Act, the U.S. Marine Mammal Protection Act, or U.S. federal turtle protection laws). A considerable body of multilateral environmental agreements has been built up in recent years, so that it will become harder to claim that unilateral action is justified because of the absence of multilateral rules.

## IV

### Trying to enforce multilateral environmental agreements

There are by now hundreds of multilateral environmental agreements (MEAs) of different geographical coverage –worldwide, regional or subregional– and addressing sometimes very specific problems. The United Nations Environment Programme (UNEP) maintains a register of such agreements (UNEP, 1996). Some of them have trade clauses which are supposed to help implement their environmental or "sustainable

development" goals, and some of them, without having specific trade clauses, could nevertheless affect trade flows. As these MEAs are relatively new, there is not much empirical investigation to assess whether they have (or could have) any significant impact on international trade. The most important of the MEAs with trade implications will be briefly examined, to illustrate some differences between the international

trade regime and environmental regimes.<sup>7</sup> This brief review of MEAs will lead us to a broad comparison of the international trade and environmental regimes.

### 1. Reducing hazardous wastes

Ultimately, the goal of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989) is to change patterns of consumption and production so as to minimize the hazardous wastes generated in production processes. To that end, it establishes a series of restrictions on their transport. The Convention has been ratified by 105 countries, including most of the Latin American and Caribbean nations.

The Convention allows the contracting parties to take drastic measures, such as to prohibit completely imports and exports of certain categories of wastes included in Annex I or approved as Annex I following recommendations of the Technical Working Group linked to the Convention. Besides the categories of wastes to be controlled, there are certain categories allowed in international trade under specific conditions, which include obtaining the "prior informed consent" (PIC procedure) of the importing country. Notification procedures have been established, and the parties must prohibit exports to a country that does not permit that specific import or a country which has not given consent in writing. For wastes characterized as hazardous according to the procedures of the Convention, movement between parties and non-parties is forbidden, except when there are bilateral and multi-lateral agreements that provide the same degree of environmental protection as the Convention.

The most recent development regarding transboundary movement of hazardous wastes is a consensus decision of the parties to the Convention to introduce an amendment that totally forbids developed countries (in effect, the OECD countries) to transport hazardous wastes for recycling in developing countries. Up to now, very few countries have ratified this amendment, which was supposed to come into force by January 1998. Governments were waiting for clarification from the Technical Working Group of the Convention regarding which materials for recycling were to be covered by the new amendment.

In February 1997 the Technical Working Group recommended new lists of wastes characterized as hazardous according to Article 1, paragraph 1a of the Convention (list A), of wastes not considered hazardous according to the same article (list B) (UNEP, 1997a), and of wastes to be placed on a list C (a sort of waiting list of residues to be considered for inclusion in A or B) (UNEP, 1997b). But of course these are only recommendations to the Conference of Parties to the Convention (COP).

There are other uncertainties, too. One refers to the WTO rules regarding trade in products to be recycled. And what happens when a country joins OECD? Does it lose the right to trade with its neighbours outside OECD and gain the right to trade with developed countries, which, according to the amendment, maintain their right to trade among themselves?

The Technical Working Group of the Convention had recommended at the end of 1995 that certain categories of waste to be recycled, consisting of metal and metal compounds in non-dispersible form, should be excluded from the restrictions as long as such waste was handled according to certain rules and it did not include wastes covered by the Convention or components that would render it hazardous. The recyclable wastes to be excluded were: precious metals (excluding mercury), iron and steel scrap, copper scrap, and a number of other types of metal scrap, including nickel, aluminium, zinc, tin, tungsten, molybdenum and manganese. This recommendation was confirmed at the last meeting of the Technical Working Group, in February 1997.

This discussion of the Technical Group illustrates one of the difficulties the Convention has to deal with, namely, the shadowy line between what is a product and what is waste. Another general difficulty is to reach agreement of what is "hazardous" and warrants inclusion in the list of "hazardous wastes" (UNEP, 1997b). In its Annex III, the Convention lists and defines "hazardous characteristics": explosive, flammable, liable to spontaneous combustion, poisonous, infectious, corrosive, toxic, ecotoxic, etc. But what is hazardous changes from one material to another. In each one it depends on the dose and on the corresponding response, on the time of exposure, and, in the case of composite materials, everything changes once more depending on the synergies involved. Most importantly, hazardousness depends on the existence (or inexistence) of adequate technology for handling and recycling and the capacity to manage "hazardous wastes" in an environmentally safe manner.

<sup>7</sup> The assistance provided by Carmen Artigas (Environment and Development Division, ECLAC) in the analysis of international environmental agreements is gratefully acknowledged.



If there is to be any hope of effective control of transboundary movements of hazardous wastes and avoidance of illegal transport, it will also be necessary to standardize nomenclatures. The nomenclature used in relation to the Basel Convention, based on the United Nations list of dangerous products, does not coincide either with the United Nations Standard International Trade Classification or with the Customs Cooperation Council's Nomenclature for the Classification of Goods in Customs Tariffs (the so-called Brussels Tariff Nomenclature used by trade authorities).<sup>8</sup> Effective implementation is further complicated by the multiplicity of "chemical safety" instruments, among them the International Code of Conduct on the Distribution and Use of Pesticides, of the United Nations Food and Agriculture Organization, or the London Guidelines for the Exchange of Information on Chemicals in International Trade, which seeks to ban or restrict certain chemicals and introduce PIC procedures for many others. Last but not least, lack of adequate technology and technical capacity, especially in the developing country signatories of the Convention, is a further impediment. As a capacity-building measure, the Latin American and Caribbean countries are at present considering the creation of a network of Regional Centres to provide training and technical support for national implementation of the Convention and for the transfer of technology for sound management of dangerous wastes (ECLAC, 1995).

Another problem related to the issue of hazardous wastes that the Basel Convention is trying to handle is the question of how to treat "domestically prohibited goods" in international trade. This is a broad category, covering in particular pharmaceuticals, consumer goods, chemical products, cosmetics and foodstuffs whose sale is not allowed on the domestic market, which have not obtained a legal permit for such sale, or whose permit is no longer valid. It may also cover machinery and equipment or inputs which are prohibited in the exporting country due to health or safety risks. Discussions on this issue continue in the Trade and Environment Committee of WTO.

<sup>8</sup> An illustration of these uncertainties is the case of some containers loaded with selenium which the Chilean health authorities considered to be hazardous waste (under the Convention that Chile has ratified) but which the Supreme Court of Chile in November 1994 declared to be a commercial product entering the country under valid rules ("Corporación Minera y Química Corniquin SA con Servicio de Salud del Ambiente", Rol ingreso Corte 2552-94).

## 2. Biodiversity

Among the numerous agreements and consultation mechanisms and platforms regarding nature conservation, the Convention on International Trade of Endangered Species of Wild Fauna and Flora (CITES) is the oldest one using explicitly and mostly "trade related environmental measures" (TREMs). The CITES convention, which has 134 signatories, was adopted in Washington in 1973, and amended in 1979 and in 1983. It prohibits trade in species threatened with extinction and regulates trade in species that could become endangered, and its conference of the parties to the Convention (COP) regularly approves, by a two-thirds majority, scientific criteria, inclusions and exclusions in Appendix I, the list of all species threatened with extinction, in respect of which "particularly strict regulation" or trade bans are required, in Appendix II, the list of species not currently threatened with extinction, but whose survival justifies trade restrictions, and Appendix III, which covers other species needing the cooperation of the Parties. In order to implement the Convention, countries have to impose restrictions on imports or exports, depending on the geographical location of the fauna or flora in question.

Trade with countries that have not signed the Convention is in principle subject to the same rules as those applied to signatories. The European Union has in fact approved rules for the application of CITES in Europe that are more rigorous than the rules of the Convention itself and has included species not listed by it. An instrument which has aims related to CITES is a new Convention on Migratory Species, under the auspices of which some regional agreements have been adopted, as for example on the conservation of cetaceans of the Baltic and North Seas, of bats in Europe, and of African-Eurasian waterbirds. In these cases, however, there is less emphasis on trade measures.

The CITES Secretariat in Geneva monitors infractions and reports implementation problems to the COP. The IX COP, which met in Fort Lauderdale, U.S.A. in 1994, unanimously approved new criteria for the listing of endangered species and reviewed infractions, recent examples of which include the discovery of a crate containing a gorilla and a chimpanzee at the Kigali (Rwanda) airport, containers with ivory sculptures in Brussels, and the skin of a serpent in a postal packet sent from Argentina to Denmark (CITES, 1994). Animal protection gets a lot of publicity, and CITES has a glossy quarterly (*CITES/C&M International Maga-*

zine), but given the limited volume and nature of the trade covered, CITES is not at the core of the concerns on the compatibility between trade regimes and the environment.

Although it does not contain explicit trade clauses, the implementation of the Convention on Biological Diversity could have much greater importance in international trade. This Convention was presented for signature at the United Nations Conference on Environment and Development in 1992 and by now, with the notable exception of the United States, almost all countries have signed and/or ratified it: a total of 163 nations at the end of 1996, including most of the Latin American and Caribbean countries.

Its main goals are the conservation and sustainable use of biodiversity and the equitable distribution of the benefits thereof, or, as formulated in its article 1, "... the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and technologies, and by appropriate funding". To that end, the countries have agreed to a whole list of measures for in-situ and ex-situ conservation, for identifying and monitoring biodiversity, and for integrating biodiversity conservation and use into relevant sectoral policies and programmes.

The Convention considers the conservation of biodiversity to be "a common concern of humankind" but reaffirms national sovereignty of States over their biodiversity, and it operates at three levels: genes, species and ecosystems.

Under the Convention, each party promises to facilitate access to its genetic resources, "on mutually agreed terms" and subject to prior informed consent: the well-known PIC procedures of several other MEAs. An unresolved point of discussion is how to compensate developing countries for the global use of the biodiversity originating in their territory. For Latin America and the Caribbean, which are comparatively rich in biodiversity and are following a development path making intensive use of the export of natural resources, this is an important point. What is at stake here is the international use and pricing of biodiversity, which is known to be unevenly distributed worldwide and concentrated, at least at present, in the developing countries.

It has been claimed that biodiversity could become the new competitive advantage of developing countries (Feinsilver, 1996). That might depend on the

possibility of bargaining access to biodiversity resources against access to technology for their sustainable use (especially biotechnology). Since agreeing to the Convention on Biological Diversity, many developing countries have adopted regulations on access to and export of biological resources, in order not only to control them but also to capture the economic benefits thereof.

The most publicized practical experience is the 1991 agreement between Merck and the National Institute of Biodiversity of Costa Rica (INBio), for biodiversity prospection in Costa Rica and research on the possibility of obtaining and commercially exploiting pharmaceuticals based on the samples provided by INBio. INBio received initially one million U.S. dollars for identifying, collecting and extracting a number of plants and insects. The patents of invention deriving from these samples would belong to Merck, but INBio would have some rights in respect of the pharmaceutical products or agrochemicals produced on the basis of the samples provided.<sup>9</sup>

Another proposal that has been put forward is to study an acceptable international mechanism allowing countries that have biodiversity resources considered to be important for the rest of the world to charge for the "environmental services" provided to the other countries through that biodiversity (United Nations, 1997). Resources thus obtained could be used for the sustainable management of the biodiversity in question.

Other open questions related to the Convention are:

- i) "farmers rights", that is, rights stemming from past, present and future contributions by farmers in conserving, improving and making available plant genetic resources, which should guarantee them participation in the benefits resulting from plant breeding and other scientific methods applied to those resources;
- ii) access to *ex-situ* collections that did not result from decisions of the Convention;
- iii) how to face the possibility that new uniform plant varieties may displace the biodiversity of traditional varieties;
- iv) the impact of the agrochemicals which have made possible the expansion of agricultural production.

<sup>9</sup> Feinsilver (1996) gives an excellent analysis of Costa Rica's experience, of other cases of biodiversity prospection and the scientific and commercial use made of the samples obtained, and of the potential of such arrangements for developing countries.

the agrochemicals which have made possible the expansion of agricultural production.

Intellectual property issues loom large in the provisions on the transfer of technology (especially biotechnology), involving not only technology for the conservation and sustainable use of biodiversity, but also technology stemming from the use of genetic resources whose access is covered by the Convention. Compatibility with the intellectual property rules of the World Intellectual Property Organization (WIPO) and of the World Trade Organization (WTO) is an issue deserving examination. In principle, the WTO agreement on trade-related intellectual property rights does not prevent governments from limiting research on, and use of, technology, with the aim of protecting the environment. A registered patent guarantees that its owner can avoid its use by others (with exceptions), but does not guarantee to the owner the right to exploit the patent if it is found to be damaging or dangerous. Apart from biosafety issues, however, there is also the question of the appropriation of economic benefits through the commercial exploitation of patents of invention obtained on the basis of the biodiversity of countries that do not have the scientific and research capacity to exploit independently their own biodiversity.

### 3. Reducing global emissions of gases likely to increase the "greenhouse effect"

The latest MEA with trade implications is the 1994 United Nations Framework Convention on Climate Change. It too was opened for signature at the 1992 United Nations Conference on Environment and Development, and came into force in March 1994. By the end of 1996, it had 163 signatories. Its general objective is to protect the climate system against human-induced change, and for that purpose governments have committed themselves to a series of measures to obtain "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a timeframe sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner" (article 2). Moreover, "measures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade" (article 3).

As in other major environmental conventions, this provides for a subsidiary scientific and technological advisory body to link the scientific assessments and information provided by competent international bodies with the policy-oriented needs of the conference of the parties to the convention. The relationship between that advisory body and the Intergovernmental Panel on Climate Change (IPCC) is unclear, but the IPCC confirmed, in its latest evaluation, the occurrence of global warming induced by human activities.<sup>10</sup>

The Framework Convention, like the first Conference of the Parties held in Berlin in 1995, insisted on "common but differentiated responsibilities", "respective capabilities" and "equity", for obvious reasons, as the main greenhouse emissions to be stabilized are carbon dioxide (CO<sub>2</sub>) emissions and their main sources are the energy and transport sectors. Most industrialized countries, including the European Union, Japan and the United States (the Annex I countries in the parlance of this Convention), had committed themselves to "the aim of returning individually or jointly to their 1990 levels of these anthropogenic emissions of carbon dioxide and other greenhouse gases" by the year 2000 (article 4). But these targets are not binding and by the first COP in Berlin in 1995, and again at the second COP in Geneva, in 1996, the specified time frames were being pushed further into the future.

Potentially, drastic measures on carbon dioxide emissions could affect international competitiveness and trade via the energy and transport sectors, as these sectors provide inputs to all production processes. However, despite highly respectable proponents (Cline, 1992) and a February 1997 call by 2,000 United States economists that included six Nobel laureates, an international carbon dioxide emission/energy use tax, that could affect trade in fuels, currently lacks the political support needed to turn it into a feasible proposition.

The international instrument being tried under the Framework Convention is "joint implementation", or "activities implemented jointly", now at a pilot stage, which could set the stage for the introduction of internationally tradeable emission certificates. At the origin of "joint implementation" was the idea that a country (branch of industry, company) could fulfil its

<sup>10</sup> At the last Conference of the Parties, in 1996, however, some parties disputed these conclusions, and there is no clear consensus among scientists, either, as is evident from Emsley, (ed.), 1996.

reduction obligations through a combination of internal reductions and external offsets (offsets meaning here emission reduction credits which, once formally certified, could be traded internationally).<sup>11</sup> This should act as an incentive for project sponsoring by industrialized countries and for the transfer of low-emission technologies to developing countries.

A number of "joint implementation" projects in the fields of energy efficiency, fuel switching, afforestation and reafforestation are being planned or implemented in developing countries, especially in Latin America and the Caribbean (Belize, Costa Rica, Ecuador, Honduras, Mexico, Nicaragua), but in terms of the intended reduction in greenhouse gases emissions they are no more than a drop in the bucket (Zollinger and Dower, 1996). In this pilot stage, no system to give "emission reduction credits" to the sponsoring countries is in place. Before "credits" can be given and traded, a global verifiable limit to total emissions would have to be agreed upon, as well as a distribution of emission quotas in which richer countries and people would have to make (ecological) room for the poorer.

#### 4. Eliminating ozone-depleting substances

The 1985 Vienna Convention for the Protection of the Ozone Layer, its 1987 Montreal Protocol on Substances that Deplete the Ozone Layer, and subsequent adjustments aim at protecting the ozone layer and ultimately eliminating the production and consumption of substances that deplete it, starting with "precautionary measures to control equitably total global emissions of substances that deplete it"<sup>12</sup>, especially chlorofluorocarbons (CFCs). The Montreal Protocol, which now has 160 signatories,<sup>13</sup> envisages a gradual reduction in the production of controlled ozone-depleting substances—CFCs and a number of other substances—and developing countries that are below a certain level of production

of those substances have a ten-year phase-out period (which would be ending in 1999). The Protocol has linked to it a Technical and Economic Advisory Panel and a small multilateral trust fund, which has received about half a billion U.S. dollars since its establishment in 1991 and which provides concessional credits to help developing countries to cover costs linked to their implementation of the Protocol.

With regard to controlled ozone-depleting substances, the parties to the Protocol have agreed to ban imports from and exports to non-parties. This ban has been in place for CFCs and halons since the early 1990s, and despite the fact that it is not compatible with the non-discrimination principle in international trade, it has not been challenged in the WTO.

The industrialized countries are well on their way to the phase-out of CFCs and halons, and there is progress in other ozone-depleting substances as well. Under the Montreal Protocol, the industrialized countries were supposed to have banned halons by 1994 and CFCs and carbon tetrachloride by 1996. Those countries are to phase out methyl bromide by the year 2010, while the developing countries have agreed to freeze methyl bromide by the year 2002 at their average 1995-1998 levels. This must have been a hard decision, since this substance is used as a fumigant against pests in many export crops of developing countries. Exemptions will be permitted for certain trade-related applications (pre-shipment and quarantine) and for critical agricultural uses.

The United States has stopped producing CFCs for domestic consumption, except for a few essential uses, but it seems that this was essentially the result of domestic policy measures (Cook, 1996). There have also been advances in the developing countries, which are supposed to phase-out CFCs by the year 2010. No assessment has been made of whether trade bans played any important role in meeting the Montreal Protocol's phase-out requirements.

<sup>11</sup> See Simonis, 1996, p. 100.

<sup>12</sup> Preamble of the Montreal Protocol. Besides chlorofluorocarbons (CFCs) and halons, the Protocol and its amendments cover other controlled substances such as carbon tetrachloride, methyl chloroform, and methyl bromide. Hydrochlorofluorocarbons are classified as transitional substances, to which

less tight schedules apply. Products can be added as their ozone-depleting potential is established.

<sup>13</sup> Amendments to the Montreal Protocol were approved at subsequent COPs. As of the end of 1996, the 1990 London Amendment had been ratified by 111 countries, and the 1992 Copenhagen Amendment, by 62.

## V

### Comparing global environmental regimes and the international trade regime

Global environmental regimes and the international trade regime are different: they have different goals, different structures, and operate according to different principles, with different institutions and different instruments. One cannot be translated into the other.

Compared to the international trade regime, environmental regimes are far more complicated. The trade regime is based on a coherent theory showing that trade improves the well-being of exporters and importers alike. By contrast, environmental regimes, in particular the main MEAs ratified in connection with Agenda 21, promote "sustainable development": a vague concept for which there is broad political support but for which there is no formal definition within any given theoretical framework. The multiple definitions which exist are essentially variants of the original formula of the Brundtland Commission: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987, p. 43).

There is more or less general consensus on the nexus between economic activity and the natural environment, and about the inseparable components of development: economic growth or selective growth of production, social development (focussed in developing countries on the fight against poverty and on equity), and environmental sustainability requiring conservation and a fair distribution of the use of ecological resources. Much has been said about these interlinkages, which were already stressed by Gro Harlem Brundtland in March 1987 in her "Chairman's Foreword" to the report of the independent commission established by the Secretary-General of the United Nations in late 1983 (World Commission on Environment and Development, 1987, pp. ix-xv). International organizations, in particular the United Nations, necessarily subscribe to "sustainable development" in the approach arising from the 1992 United Nations Conference on Environment and Development. But one does not have to probe too deeply to recognize the difficulties of the concept.

Sustainability of what?<sup>14</sup> Which should come first: human beings or the ecosystem? There is a whole gradation between anthropocentric and ecocentric approaches, for global as well as for local problems. Then there is the factor of scientific optimism or pessimism, as manifested in the assumptions on substitutability between natural resources themselves and between man-made and natural capital (both depending on technological advances).

Sustainability where? Different environmental problems have different geographic coverage. The damage seldom hits exactly where it originates. And geography also matters in the impact of policies.<sup>15</sup> How should we deal with common and shared resources? How should we distribute geographically those famous "common but differentiated responsibilities" of Principle 7 of the Rio Declaration? How should we establish the overall level of protection or use of the ecological environment and the division of the quotas for access and use of it?

Sustainability when? Improving the well-being of present generations without risking the ability of future generations to do the same is the broad consensus definition. But how much risk is acceptable in the assessment of intergenerational equity? And there is always the question of scientific uncertainty and sustainability. In the presence of uncertainty, what level

<sup>14</sup> Prof. Opschoor, Rector of the Institute of Social Studies of The Hague, who certainly cannot be accused of not being an environmentalist, gave a wonderful lecture on the fuzziness of the concept when answering the questions of what, where, when, and how much risk (Opschoor, 1996). I have drawn on his remarks.

<sup>15</sup> In terms of a formal model of natural resource extraction and use, assuming two countries—a home country and a foreign country—and adopting a "weak sustainability" concept, i.e., allowing for substitution between man-made and natural capital, Klepper and Stähler (1996) have shown that the unilateral introduction of "sustainability rules" in the home country leads to greater unsustainability in other countries. It should be noted that the "sustainability rules" used in the model are "exhaustible resources extraction rules" and that the model assumes perfectly competitive markets (and thus no interference in trade). Unless unsustainability abroad is no problem, the results of the model imply a condemnation of unilateral rules within one country for the protection of the environment.

of risk is acceptable? How dangerous is it, for instance, that the deadlines for greenhouse gases emission reductions are being postponed? What exactly are the deadlines that should be established for each programme of action dealing with environmental problems? And finally, linked to all the previous questions, how are we to measure "environmental capital" or "environmental services" and sustainability or the lack of it?

The old trade issues and the measurement of trade flows, by comparison, look simple. The system of rules for international trade has been built up over more than 50 years, based on the principles of non-discrimination, reciprocity and national treatment. In contrast, the principles and most of the existing rules for international environmental management and "sustainable development" are relatively new and are yet to become legally binding. And while the Uruguay Round negotiations strengthened the international trade disputes settlement machinery, there is no unified mechanism for settling disputes related to environmental damage and its mitigation.

It is true that over the years the coverage of the international trade regime has expanded and, besides trade in goods, has come to include services, trade-related investment measures and trade-related intellectual property rights. Environmental regimes, however – and in particular Agenda 21 – might cover in principle anything under the sun. There is a vast range of environmental issues, even if we take account only of those with transnational implications: transboundary air and water contamination, sanitary standards for food trade, toxic chemicals, hazardous waste, ozone depletion, marine contamination from land-based sources, pollution from ships, overfishing, endangered species, loss of biological diversity, soil erosion, desertification, deforestation, climate change, and so on and so forth. Each of them involves a variety of domestic institutions, various levels of appropriate government action (from communal to international), quite a lot of jurisdictional overlaps and conflicts, and diverse international organizations. Moreover, each of these issues relates to different economic activities and interests, and does not affect all socio-economic groups and strata in the same way.

This number of issues is matched by an even larger number of instruments used to achieve results: voluntary agreements between governments and industries, regulations establishing emission standards, product standards, process standards, requirements for environmental assessment, monitoring and reporting, and rules for testing, packaging and labelling.

To these we must add the now rather fashionable emerging "economic instruments": taxes of various kinds (earmarked or not for environmental expenditures), pollution charges, deposit refund schemes, "green protocols" for credit (linking credit to environmental impact assessments), subsidies (given or eliminated), waste fees and levies, ecolabels in marketing, liability instruments, and tradeable permits (relating to the use of certain resources or to the emission of specific substances).

Then, there is the role of natural sciences. The trade regime deals only with economic relations and is not concerned with natural phenomena. MEAs are radically different. Even if they try to deal with social and economic relations, they only do so insofar as these relations result in changes in nature, diagnosed as damage. Although the impact of environmental degradation can often be perceived even without scientific preparation, natural scientists (including health specialists) have identified most environmental phenomena and are monitoring them closely.

It is not by chance that almost every one of the MEAs has attached to it a scientific body, to assess chemical, physical or meteorological processes, to classify toxic and hazardous products and wastes, and so on. Nevertheless, sometimes parties to the conventions ignore or even dispute the scientific advice of such panels.

To deal with scientific uncertainty, international environmental regimes are built on the precautionary principle, according to which "where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation" (as formulated in Principle 15 of the Rio Declaration on Environment and Development, 1992). The reference to "cost-effective measures" is a reminder that the precautionary approach is insufficient alone to guide decisions, and that the value of avoiding environmental damage cannot be assumed to be infinite. As environmental damage and policies to prevent it usually have "winners" and "losers", there will be no easy consensus about cost-effective measures. This is true at both the local and the international level.

This wide variety of trends has necessarily had to be embodied in the system of multilateral environmental negotiations. As a result, for now, enforcement and dispute settlement mechanisms in MEAs are extremely weak. Emphasis is given to voluntary commit-

ments and the exchange of information, as well as to procedural responses in domestic policies, such as the approval of "national strategies" in response to international environmental agreements. In fact, trade measures are about the only coercive instrument in MEAs.<sup>16</sup>

The growing number and variety of multilateral environmental agreements which exist, together with their rapid evolution through new protocols and amendments, is creating a web of ever more complex international environmental regimes. In the absence of international enforcement procedures and incentives, many countries—in particular developing countries, Latin America and the Caribbean included—have yet to build the institutions and technical capacity required for implementing and monitoring the agreements which they have been signing.

Given the linkages between the environmental issues MEAs are trying to address, compatibility between different environmental agreements, and especially coordination of the international and domestic institutions dealing with their implementation is assuming increasing importance in the international agenda. The United Nations Environment Programme (UNEP) provides administrative backstopping to various of the MEA secretariats, and while these tend to strive for more autonomy, UNEP has been calling for increased coordination among them. A more radical proposal has been that of creating a Global Environ-

mental Organization, or GEO, to pull together the multitude of international institutions that currently influence environmental policy, such as UNEP, the Global Environmental Facility, the secretariats of the various MEAs, and a host of other bodies. The original proponent of this approach, Daniel Esty, a senior official of the United States Environmental Protection Agency (EPA) has not suggested practical steps for putting together in one institution the responsibility for all global environmental negotiations, but he has argued that an institutional counterweight to WTO is needed (Esty, 1994).

Trade policy and environmental policy do interact in ways that are not yet well-known and sometimes at cross-purposes. As WTO Director-General Renato Ruggiero has summed up in very cautious terms "it is possible to envisage circumstances in which trade, unsupported by sound environmental policy, could involve damage to the environment—or, on the contrary, circumstances in which environmental regulations could harm legitimate trade" (Ruggiero, 1995). In each of these circumstances: which one should be adjusted? Policy-oriented research should give rational answers to this question. In pondering it, it would be wrong to forget that differences in levels of development and well-being among countries go together with differences in international bargaining power and in environmental priorities.

(Original: English)

### Bibliography

- Adams, Jonathan S. and Thomas O. McShane (1992): *The Myth of Wild Africa: Conservation Without Illusion*, New York and London, W.W. Norton & Co.
- Agosin, Manuel R. and Diana Tussie (eds.) (1993): *Trade and Growth: New Dilemmas in Trade Policy*, New York, St. Martin's Press.
- CITES (Convention on International Trade in Endangered Species) (1994): *Review of alleged infractions and other problems of implementation of the Convention: Report to the IX Meeting of the Conference of the Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora*, Fort Lauderdale, U.S.A., November 1994.
- Cline, William R. (1992): *The Economics of Global Warming*, Washington, D. C., Institute for International Economics (IIE).
- Cook, Elizabeth (1996): *Making a Milestone in Ozone Protection: Learning from the CFC Phase-out*, Washington, D. C., World Resources Institute, January.
- ECLAC (Economic Commission for Latin America and the Caribbean) (1995): *El Convenio de Basilea: un escenario urgente para la cooperación regional*, LC/R.1567, Santiago, Chile.
- (1996): *Panorama de la inserción internacional de América Latina y el Caribe*, Edición 1996, LC/G.1941, Santiago, Chile, 2 December.
- Emsley, John (ed.) (1996): *The Global Warming Debate: The Report of the European Science and Environment Forum*, Dorset, U. K., Bournemouth Press Limited.
- Esty, Daniel C. (1994): *Greening the GATT: Trade, Environment and the Future*, Washington, D. C., IIE.

<sup>16</sup> For a very illuminating comparison between international environmental and trade regimes, see Von Moltke, 1996.

- Feinsilver, Julie M. (1996): Biodiversity prospecting: a new panacea for development? *CEPAL Review*, No. 60, LC/G.1943-P, Santiago, Chile, ECLAC.
- Klepper, Gernot and Frank Staehler (1996): *Sustainability in Closed and Open Economies*, Kiel, Germany, The Kiel Institute of World Economics.
- Low, Patrick (ed.) (1992): *International Trade and the Environment*, World Bank Discussion Paper No. 159, Washington, D. C., The World Bank.
- Markandya, Anil (1994): Is free trade compatible with sustainable development? *UNCTAD Review 1994*, Geneva, United Nations Conference on Trade and Development (UNCTAD), United Nations publication, Sales No. E.94.II.D.19.
- Opschoor, Hans (1996): Sustainability: A suspicious concept, in Duijnhouwer, Frans and Marijke Veldhuis (eds.), *RAWOO/RMNO Lectures on Sustainable Development*, The Hague, Netherlands, Advisory Council for Scientific Research in Development Problems (RAWOO).
- Pearce, David (1994): The greening of the GATT: some economic considerations, in Cameron, James, Paul Demaret and Damien Geradin (eds.), *Trade and the Environment: The Search for Balance*, Vol. I, London, Cameron May Ltd.
- Ruggiero, Renato (1995): The Paul-Henri Spaak Lecture, Harvard University, Boston, MA, U.S.A., 16 October, *mimeo*.
- Simonis, Udo E. (1996): Internationally tradeable emission certificates. Linking environmental protection and development, *Economics*, Vol. 53, Tübingen, Germany, Institut für Scientific Co-operation.
- United Nations Framework Convention on Climate Change (1996): *Activities Implemented Jointly: Annual Review of Progress Under the Pilot Phase*, FCCC/CP/1996/14, Geneva.
- UNEP (United Nations Environment Programme) (1996): *Governing Council of the United Nations Environment Programme*, nineteenth session, Nairobi, 27 January-7 February 1996. *International Conventions and Protocols in the Field of the Environment. Report of the Executive Director*. UNEP/GC.19/31, Nairobi, 18 December.
- UNEP (1997a): UNEP Technical Working Group to Develop Draft Technical Guidelines on the Environmentally Sound Management of Hazardous Wastes Subject to the Basel Convention. Twelfth session, Geneva, 24-28 February 1997. *Draft Position Paper on Hazard Characterization and Classification of Wastes Within the Framework of the Basel Convention*, UNEP/CHW/WG.4/12/2, Geneva, January.
- UNEP (1997b): UNEP Technical Working Group to Develop Draft Technical Guidelines on the Environmentally Sound Management of Hazardous Wastes Subject to the Basel Convention. Twelfth session, Geneva, 24-28 February 1997. *Considerations of Wastes Placed on List C*, UNEP/CHW/WG.4/12/4, Geneva, 6 January.
- United Nations (1997): *Fourth Expert Group Meeting on Financial Issues of Agenda 21*. Department for Policy Coordination and Sustainable Development (DPCSD)/ECLAC/Inter-American Development Bank (IDB), Santiago, Chile, 8-10 January.
- Von Moltke, Konrad (1996): *International Environmental Management, Trade Regimes and Sustainability*, Winnipeg, Manitoba, Canada, International Institute for Sustainable Development
- World Commission on Environment and Development (1987): *Our Common Future*, Oxford, U. K., Oxford University Press (the "Brundtland Report").
- Zollinger, Peter and Roger C. Dower (1996): Private financing for global environmental initiatives: can the Climate Convention's "Joint Implementation" pave the way? *WRI Issues and Ideas*, Washington, D.C., World Resources Institute (WRI), October.