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Protecting the Ozone Layer through Trade Measures:

Reconciling the Trade Provisions of the Montreal Protocol and the rules of the GATT

By Rosalind Twum-Barima and Laura B. Campbell

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This paper provides an overview of the history of the Montreal Protocol on Substances that Deplete the Ozone Layer, examines the necessity and effectiveness of the Protocol's trade measures and evaluates the measures for consistency with the trade rules of the General Agreement on Trade and Tariffs. It also examines possible mechanisms for settling disputes which may arise as a result of the interpretation and implementation of the Protocol's trade measures.

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Geneva, Switzerland

Fax: 41.22.796.9240

Series Coordinator: Scott Vaughan

ISSN: 1020-1610

Foreword

The 1992 "Earth Summit" found common ground upon which human development can be put on an environmentally sustainable footing. In 1993, completion of negotiations for the Uruguay Round set the course for a further liberalisation of international trade. One of the most pressing and complex challenges facing our generation is the search for a workable synthesis of the two, of economic relations and environmental realities.

We must embark upon this course, not because it is easy, but because it is necessary. Our planet's ecological vital-signs continue to warn us of an accelerating rate of degradation - depletion of the ozone layer that shields us from harmful solar radiation, erosion of productive soils needed to grow food, contamination of freshwater with hazardous wastes, depletion of fish stocks, the massive loss of biodiversity, the threat of climate change and global warming.

An important challenge identified at the Earth Summit is ensuring that trade and environment are "mutually supportive". It is hoped that this series, providing analysis on selected environmental issues of relevance to the environment - trade debate, will contribute to the search for solutions now under way.

Elizabeth Dowdeswell
Executive Director

The Authors

This paper was prepared for the United Nations Environment Programme by ROSALIND TWUM-BARIMA, Researcher, Imperial College Centre for Environmental Technology with the assistance of RICHARD MACRORY, Environmental Law Group, Imperial College Centre for Environmental Technology, London, England and LAURA B. CAMPBELL, former Deputy Co-ordinator of the Ozone Secretariat and currently Senior Legal Officer, Trade and Environment in UNEP's New York office.
The authors wish to thank Martin Hession, Donald Goldberg, James Cameron, Dr. Bondi Ogolla, Mahadva Sarma, Gilbert Bankobeza, Peter Usher and Scott Vaughan for their assistance. This paper does not represent the views of the United Nations Environment Programme or any other individual named above. Any errors are the sole responsibility of the authors.

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For further information contact:

Environmental Law Group,
Centre for Environmental Technology,
Imperial College of Science,
Technology and Medicine,
48 Prince's Gardens,
London SW7 2PE.

Phone: (71) 589 5111 Ext. 7220
Fax: (71) 823 7892.

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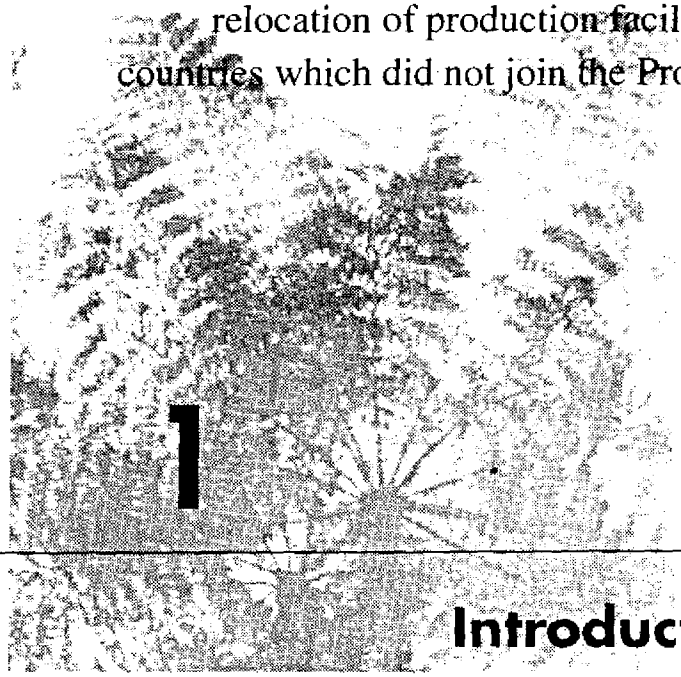


1 Introduction

In recent years, two major agreements dealing with the protection and restoration of the ozone layer have been reached, the Vienna Convention on Protection of the Ozone Layer[1] and its Montreal Protocol on Substances that Deplete the Ozone Layer[1]. Both of these treaties, dealing with a global environmental problem, have achieved global support and participation. As of 30 June 1994,

137 countries have become Parties to the Vienna Convention and 136 countries are Parties to the Montreal Protocol.

The Vienna Convention is a framework agreement aimed at formalizing an ongoing process of international cooperation and research on ozone depletion and providing a more certain scientific basis for specific regulations needed to protect the ozone layer. The Montreal Protocol contains detailed international standards governing the production and consumption of ozone depleting chemicals based on continuing scientific evaluation under the Vienna Convention.

One of the important aspects of the Montreal Protocol is that it was drafted in a manner which takes into account the impact of international trade and investment on the environment. The drafters of the Protocol recognized that totally unregulated trade in ozone- depleting chemicals would likely result in the relocation of production facilities to countries which did not join the Protocol and re-export of the chemicals or products manufactured by them to countries which were Parties.

As the ozone layer is affected by global emissions of ozone-depleting chemicals without regard to the source of emissions, drafters were concerned that emission reductions in one country could be offset by increased production or consumption in another country. As a result of these concerns, the Montreal Protocol contains various provisions which directly or indirectly affect international trade.

The General Agreement on Tariffs and Trade (GATT)[2] is the primary international treaty governing international trade. The overall purpose of GATT is to promote the full, fair and free exchange of goods and services through the liberalization of international trade. GATT serves as the major forum for negotiation of tariff reductions and other measures aimed at non-

discrimination in trade relations.

The potential for conflict between the goals of environmental protection and trade liberalization was addressed at the United Nations Conference on Environment and Development (UNCED) held in 1992 in Rio de Janeiro. In *Agenda 21*, governments stressed the need for trade and environmental policies to be mutually supportive.

In discussing the role which trade measures in multilateral environmental agreements have played in tackling global environmental problems, Chapter 2 of *Agenda 21* states:

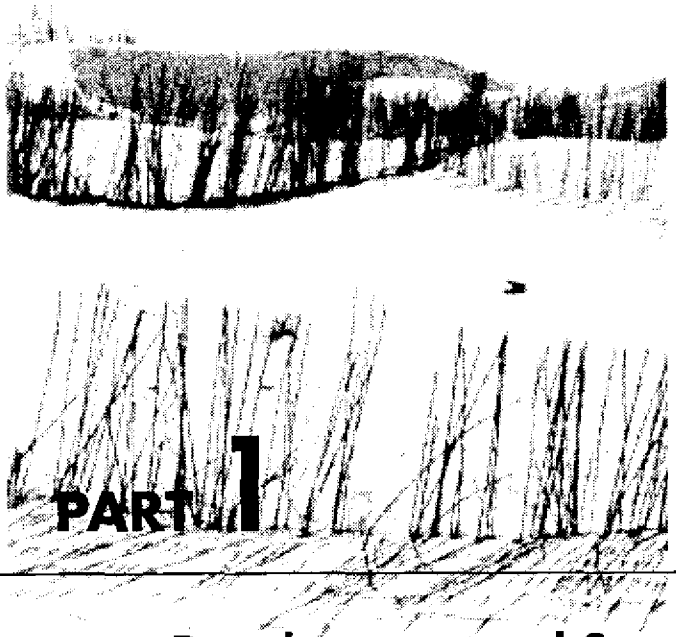
> *"Trade measures have thus been used in certain specific instances, where considered necessary, to enhance the effectiveness of environmental regulations for the protection of the environment. Such regulation should address the root causes of environmental degradation so as not to result in unjustified restrictions on trade The challenge is to ensure that trade and environment policies are consistent and reinforce the process of sustainable development. However, account should be taken of the fact that environmental standards valid for developed countries may have unwarranted social and economic costs in developing countries."*

Agenda 21 also stressed the need for further study of the relationship between trade and environment and to promote a dialogue between the trade and environment communities.

The purpose of this monograph is to describe the development and structure of the Montreal Protocol, including its trade-related provisions, and to analyze its compatibility with the trade principles embodied in GATT. The monograph also reviews mechanisms that exist for settling international disputes

that may arise as a result of conflict between GATT and the trade related provisions of the Montreal Protocol.

The monograph concludes that the Montreal Protocol is an environmentally effective agreement which is consistent with GATT because it contains a combination of provisions which ensure its fair and effective implementation, including but not limited to trade restrictions. The Protocol also provides scientific evidence as the basis for its regulation and special and differential treatment for developing countries, including technical and financial assistance and a grace period for application of the environmental standards.



PART 1

Development and Structure of the Montreal Protocol[4]

The Montreal Protocol on Substances that Deplete the Ozone Layer[4] entered into force on 1 January 1989 with 29 parties, including the European Community. The basic objective of the Protocol is to protect the ozone layer, by taking measures leading to the total elimination of ozone-depleting substances, on the basis of developments in scientific knowledge, and taking into

account technical and economic considerations and the needs of developing countries.[5] The number of countries which are now parties to the Protocol has increased to 136, including the EC.

1. SCIENTIFIC EVIDENCE

(i) The Chemicals

The Montreal Protocol mandates significant reductions in the production and consumption of certain chemicals - chlorofluorocarbons (CFCs), halons, carbon tetrachloride, methyl chloroform, hydrochlorofluorocarbons (HCFC), hydrobromofluorocarbons (HBFC) and methyl bromide.

CFCs are used as aerosol propellants, blowing agents for foams, coolant in refrigerators and air conditioning units, solvents in the electronics and defence industries and for dry cleaning and metal degreasing. Halons were used mainly in commercial and military fire protection systems; methyl chloride is a popular commercial solvent; carbon tetrachloride is used as a chemical feedstock for the production of CFCs; methyl bromide as a fumigant for soil and agricultural products; and HCFCs and HBFCs as substitutes for CFCs.

(ii) Causes and Effects of Ozone Depletion[6]

From the early 1970s, scientists suspected that the presence of chlorine in the atmosphere, caused by the release of CFCs, might cause damage to the ozone layer, which lies mostly in the stratosphere, about 12 to 50 kilometres over the earth's surface. In 1974, Mario Molina and Sherwood Rowland of the University of California, Berkeley, published a research report which concluded that when CFCs were released into the atmosphere, they were not chemically broken down or rained out in the

biosphere or troposphere but, because of their stable chemical structure, persist and migrate slowly up to the stratosphere. There they decompose by a chemical interaction catalyzed by ultra-violet radiation which causes a release of large quantities of chlorine followed by a chain of chemical reactions which destroy the ozone.[7]

Stratospheric ozone has two important characteristics: first, it absorbs particular wavelengths of ultra-violet light from incoming sunshine. One band of such ultra-violet light is known as "UV-B" and has adverse effects on human, animal and plant health and life when it reaches the planet's surface in excessive quantities[8]. Increased UV-B radiation would increase the incidence of human skin cancer and eye diseases and cataracts, adversely affect the human immune system, inhibit plant growth and crop yields, kill aquatic organisms that are an important part of the marine food chain and cause many materials used outdoors, such as plastics, paints and wood, to degrade more rapidly. Second, ozone acts as a greenhouse gas in the upper troposphere[9] and the lower stratosphere.

Changes in the concentration of ozone in these regions could influence temperature structures and circulation patterns of the stratosphere and have major implications for climate around the world. Various research programmes were instituted to investigate the issue further. In 1976, the US National Academy of Sciences (NAS) published a report on the effects of CFCs on the atmosphere.[10] The Report stated that even if CFC emission levels were held at 1973 levels, there would be a long-term reduction of between 6 to 7.5 per cent in concentration of ozone in the stratosphere, leading to an increase of 12 to 15 per cent in the amount of ultra-violet radiation reaching the surface of the earth. Although acknowledging that the US consumed nearly

50 per cent of the world's CFCs, the NAS report stressed the nature of ozone depletion as a global problem that needed to be addressed at international level.

2. RESPONSE OF GOVERNMENTS AND INDUSTRY TO THE OZONE LAYER PROBLEM.

After the publication of the Molina and Sherwood findings in 1974, a debate ensued between CFC and aerosol manufacturers, on the one hand, and atmospheric scientists and environmentalists on the other. Because the protection of the ozone layer entails economic and social costs,[11] the industrialists were initially opposed to regulatory action. They argued that the figures projected by scientists were determined on the basis of theory, and that considerable uncertainty existed about the extent of the rate of ozone layer depletion, and how much of it was due to human activities. They advocated more time to gather additional data on ozone and on CFC concentrations at different altitudes, before any action was taken to control the use of CFC compounds. Scientists and environmentalists, on the other hand, maintained that a "wait and see" approach was dangerous. Even if CFC emissions ceased immediately, chlorine concentrations would continue to build up over decades as CFCs already in the atmosphere slowly decomposed.

Before negotiations began on an international agreement to deal with the problem of ozone depletion, a number of governments decided to take unilateral preventative action. As a result of the 1976 National Academy of Science report and public reaction to the revelations of the potential danger to the ozone layer, an amendment to the United States Clean Air Act in 1977 was passed. The amendment authorised the Administrator of the US Environmental Protection Agency (US

EPA) to regulate "any substance which, in his judgement, may reasonably be anticipated to affect the stratosphere, especially ozone in the stratosphere, if such effect may reasonably be anticipated to endanger public health and welfare"[12].

On the basis of this regulation, further regulations were ratified in March 1978, setting out a timetable for phasing out CFC use in aerosols in the USA. The manufacture of CFCs for aerosol propellants was banned from October 1978 and from December of the same year, companies had to cease using existing supplies of CFC propellants in the manufacture of aerosols. There were exceptions made for some essential medical uses.

Canada, Norway and Sweden also effected regulations banning the use of CFCs in non-essential aerosols, and the former West Germany and the Netherlands started aerosol labelling. A report published by the British Department of Environment in 1976 emphasized the uncertainties in scientific analysis and dismissed the need for immediate regulatory action.[13]

Under pressure from major CFC producers and industrial users in France, Italy and the UK, the European Community rejected proposals for stricter controls within the Community on CFC use in aerosols. However, in the late 1970s, the Council of the European Community adopted a Resolution calling for a limitation on CFC production[14]. This was followed in 1980 by a Council Decision[15] placing a limit on the production capacity for two CFC compounds, CFC-11 and CFC-12[16], within the Community and requiring a cutback in the use of aerosols in 1981 to 70% of the 1976 level. In addition, the production capacity for CFCs 11 and 12 was not to be increased beyond their 1980 levels. A Second Decision[17] added a requirement that production of CFCs 11 and 12 within the Community was not

to exceed 480,000 tonnes per annum. The EC Commission was sympathetic to industry arguments that strong controls on aerosols would impose hardships because of substantial existing over capacity and the alleged large capital investment required to convert to substitute propellants in aerosol cans.

The varying standards of regulations imposed by the US and the EC resulted in a significant change in their respective positions as producers and suppliers of CFCs in the world market. In 1974, the US was the largest producer of CFCs 11 and 12, with 46 per cent of world total production; the EC was second, with 38 per cent. By 1986, the EC produced between 43 - 45 per cent of the world total, while the US production level had decreased to 30 per cent. By this time the US consumed almost all the CFCs it produced, while the EC had become the almost unchallenged CFC supplier to the rest of the world, especially to the growing markets in developing countries. (Japan and the Soviet Union also increased their share in the world market over this period).

Although the 1978 US ban on the manufacture and use of CFCs caused a significant drop in world-wide emissions, this turned out to be short-lived. Emissions began to rise again as other uses of CFC continued to grow in the 1980s and other countries increased their output of CFC aerosols. Markets for CFCs were expected to grow in both industrialised countries, where new uses for CFCs were being discovered, and in industrialising countries, which had started to develop and manufacture products dependent on CFCs. The population size in these countries, particularly developing countries, ensured that they would be capable of overwhelming any reduction in the use of ozone-depleting chemicals in the US and the EC[18].

3. THE VIENNA CONVENTION ON THE PROTECTION OF THE OZONE LAYER

In response to the potential threat posed by the emission of chemical substances that could deplete stratospheric ozone, the United Nations Environment Programme (UNEP) convened a meeting of experts on the ozone layer in May 1977. The meeting produced the *World Plan of Action on the Ozone Layer*,[19] which recommended international research and monitoring of the situation and mandated to UNEP the role of coordinating and integrating research efforts. In order to fulfil its responsibilities under the Plan, UNEP established a Co-ordinating Committee on the Ozone Layer composed of various UN bodies, specialized agencies, international, regional, intergovernmental and non-governmental organizations and scientific institutions. The objectives of the Committee were to make an environmental assessment of ozone layer depletion and its impacts and to establish an international forum for discussions on the issue of ozone layer depletion.[20]

On the basis of a report[21] produced by the Committee, UNEP began work on an international agreement for the protection of the ozone layer in January 1982. A meeting of representatives of 24 countries was convened to launch the Ad Hoc Working Group of Legal and Technical Experts for the Elaboration of a Global Framework Convention for the Protection of the Ozone Layer. By early 1985, the Working Group had achieved substantial agreement on the Convention and drafted all elements, except the control provisions, of a protocol to the Convention. In March of that year representatives of 43 nations convened in Vienna to complete work on the ozone convention.

The Vienna Convention for the Protection of the Ozone

Layer[22] was opened for signature on 22 March 1985 and entered into force on 22 September 1988. The Convention does not prescribe any specific measures for the protection of the ozone layer, and simply lists CFCs in an annex with other gases, as substances "thought to have the potential to modify the chemical and physical properties of the ozone layer"[23].

However, the treaty obliges Parties to, *inter alia*, (i) take appropriate measures to protect human health and the environment against the adverse effects resulting or likely to result from human activities which modify or are likely to modify the ozone layer[24]; (ii) cooperate in scientific research and systematic observations in order to better understand and assess the effects on human health and the environment from modification of the ozone[25] (iii) exchange relevant scientific, technical, socio-economic, commercial and legal information[26]. The Convention also established a framework for future protocols to control ozone modifying substances[27].

4. NEGOTIATING THE MONTREAL PROTOCOL

In September 1986, representatives from 26 countries and from industry met in the United States (the "Leesburg meeting"). This was the last in a series of meetings convened by UNEP before international negotiations on a Protocol to the Vienna Convention began in December of the same year. Until this meeting, there had been a conflict between the USA, Canada, Switzerland and the Scandinavian nations (the "Toronto Group") on the one hand, and the EC countries on the other. The former had advocated a world-wide ban on CFCs in aerosols, which they had already imposed domestically, whilst the latter argued for a cap on overall CFC production without bans or reductions. At the Leesburg

meeting, the Toronto Group dropped their demand for a world-wide ban and a consensus was reached on the need to regulate all sources of CFC emissions and to base any future controls on one of three options: limits on production, production capacity caps or restrictions on CFC consumption and emissions.

The inevitability of a global curb on CFCs prompted a rethink by CFC producers, who until then had argued that in the absence of an immediate threat to the ozone layer, further research and ozone monitoring were the only measures needed. The US Industrial Alliance for Responsible CFC Policy announced after the meeting that it would support a "reasonable" global limit on CFC production. Dupont, the USA's major CFC producer announced in October 1986, a month after the meeting, that alternatives to CFCs 11 and 12 could be on the market in volume within five years, given appropriate incentives. Such incentives, according to Dupont, could be provided by a global cap on CFC production to limit the future growth of the chemical.[28] In a statement issued through the European Fluorocarbon Technical Committee, Europe's CFC manufacturers also announced that, for the first time, they agreed that a global production limit on CFCs 11 and 12 "would do much to remove unease about the effects of projected increases in their use."[29] ICI, the UK's major CFC producer also began to look closely at substitutes for CFCs 11 and 12, although it was less optimistic than Dupont that substitutes could be found for all applications within five years.[30]

In December 1986 and again in June 1987, signatories to the Vienna Convention met in Geneva in an attempt to draft a Protocol to the treaty. The Toronto Group maintained that despite gaps in knowledge, further delay would increase health and environmental risks to an unacceptable degree. They proposed a gradual elimination of emissions of controlled

substances down to the point where only emissions related to a limited number of uses would be allowed. The European Community, and the United Kingdom in particular, continued to argue for production caps, on the basis that scientific models indicated that there had been no significant ozone depletion for at least two decades, and therefore there was time to wait for more concrete scientific evidence before imposing cuts on production. This perspective was also shared by Japan and the Soviet Union.

In March 1987, a major change in UK policy[31] enabled the EC Commission to put forward a proposal, on behalf of all the Community Member states, for a freeze and subsequent reductions of CFC production and import levels, but not a freeze on exports.[32] A third group of countries, which included a number of developing countries,[33] was initially uncommitted, but gradually moved towards stringent regulations.

The principal issues debated during the initial negotiations on the Protocol included: the chemicals which were to be controlled, whether controls should be imposed on their production or on their consumption; the timing and size of cutbacks; measures to restrict trade with non-parties; and the treatment of developing countries with low levels of CFC consumption.

(i) Controlled Substances

In November 1986, the USA proposed a freeze at current levels, followed by a long-term phase out, not only on CFCs 11 and 12, but also on CFC 113 and Halons 1211 and 1301. The Protocol provided for controls on eight chemicals - five CFCs and three halons. For control purposes, all CFCs were considered as one basket and halons as another. Controls were imposed on

each basket as a whole. Provision was made for the addition of new substances in the future[34].

(ii) Controls on Production or Consumption?

The issue of whether controls should be applied to the production of controlled substances or to their consumption was highly contentions because of its significant commercial implications. The advantage of imposing controls on production levels was that restrictions would be easier to enforce, as there were only a small number of producing countries to be monitored as opposed to the large number of consumers. However, there were two main arguments against this method of control, one put forward by countries who were small producers of controlled substances, the other by consumer countries. The former maintained that basing controls on current production levels would result in inequitable power being given to larger producers, and the only way *they* could then supply CFC importing markets would be through starving their own rising domestic consumption needs.

For their part, countries which depended on imports of controlled chemicals contended that a cap on production levels might cause manufacturers to scale back their exports in order to satisfy their domestic consumers. This, coupled with the fact that, under the treaty, they would be prohibited from starting or expanding their own production of controlled substances, would cause them to bear a disproportionate share of the cost of reducing CFC use.

It was recognised by the negotiators of the Protocol that this situation might discourage countries from participating in the agreement, and thus undermine its effectiveness. In the end, it was decided to limit consumption levels, which would be calculated by aggregating each Party's level of production and

imports of controlled substances and subtracting from this, its level of exports.[35] This eliminated the potential for any monopoly based on existing export positions. A producing country could increase its own production and exports to meet the needs of the export market without reducing its domestic consumption. The formula also dealt with the concerns of importing countries regarding the potential for a lack of supplies. If a CFC-producing country cut back on exports, the importer could meet the shortfall by increasing its own production or by turning to another CFC supplier among the parties to the Protocol. However, from 1 January 1993, exports to non-parties could no longer be deducted and would be included in calculating a country's level of consumption[36]. This provided an incentive for importing countries to join the Protocol lest they lose suppliers.

(iii) Schedule for the reduction of controlled substances

The Protocol imposed an obligation on Parties to freeze their consumption of CFCs at 1986 levels, effective for a twelve-month period beginning seven months after entry into force. This was to be followed by a 20 per cent reduction from 1 July 1993, and 50 per cent reduction of the 1986 levels, from 1 July 1998. Halons were to be frozen at 1986 levels three years after entry into force of the Protocol. An automatic 20 per cent reduction would commence within a twelve-month period beginning July 1, 1993. Crucial to the reduction timetable throughout the negotiations were the periodic scientific and economic assessments which would also enable parties to re-examine and, if necessary, revise any of the reduction steps.

The Protocol was designed so that future changes in the stringency and timing of reductions of chemicals already covered

would be considered "adjustments" to its provisions and therefore binding on all parties. When new chemicals were to be added, these changes would be effected through amendments to the Protocol and governed by Article 9 of the Vienna Convention, which required at least a two-thirds majority of the parties to ratify amendments before they would enter into force, and would only be binding on parties that had ratified them.[37]

(iv) Restrictions on trade with non-parties.

Restrictions on trade with non-parties were considered necessary by the negotiators of the Protocol for two main reasons. First, without wide participation in the Protocol, the objective of reducing the use of the controlled substances, and thereby saving the ozone layer, would be seriously undermined. Non-parties would continue to produce and use the controlled substances, and there would therefore be an incentive for companies to move CFC production facilities to non-party states. Trade restrictions were therefore required to stimulate as many nations as possible to join the Protocol. Second, measures restricting or prohibiting trade with non-party states were imposed to prevent these states from gaining a competitive economic or trade advantage over Parties, by becoming or expanding their capacity as suppliers of controlled substances to both parties and other non-parties. Furthermore, a ban on exports to non-party states would act as an effective inducement for them to join the agreement to ensure continued access to controlled substances. This was particularly true for developing countries who received virtually all their supplies of these substances from developed countries who were to become parties to the Protocol.

The Protocol stipulated that: (i) within a year of entry into force, bulk imports of controlled substances from non-parties

would be banned;[38] (ii) from 1 January 1993, exports to non-parties cannot be subtracted from a Party's production in calculating its consumption level;[39] (iii) within three years of its entry into force, the Parties would elaborate in an annex a list of products containing controlled substances. Parties that did not object to the list would be obliged to ban, within one year of the annex becoming effective, the import of those products from non-party states;[40] and (iv) within five years of entry into force, the parties would determine the feasibility of banning or restricting imports from non-parties of products produced with, but not containing controlled substances.[41]

However, imports to non-parties, who are determined by the Parties to be in full compliance with the control measures of Article 2, would be permitted.[42] The parties also agreed to discourage the export of technology to non-parties for producing or utilising controlled chemicals, and to refrain from providing new financial aid for such purposes.[43] However, technologies that could contribute to emission restrictions could still be exported.[44]

(v) Treatment of developing countries with low levels of consumption.

Developing countries were initially disinterested in the ozone layer problem. They were aware that some of the proposed strategies for controlling the use of ozone-depleting substances could limit their access to chemicals which were important for their economic development. The per capita consumption of CFCs in developing countries was only a small fraction of that of the industrialised world, but the domestic requirements of the former were growing. For example, there was an increasing need for refrigeration and air-conditioning units and a growing

requirement to use, make and export products made with or containing CFCs.[45] Provisions were required to enable developing countries to meet their legitimate needs during the transition period while substitutes were being developed and yet, at the same time, to provide incentives that would discourage them from becoming major producers and consumers themselves.

Under Article 5 of the Protocol, developing countries with a per capita consumption of under 0.3 kilogrammes (Article 5 Parties) were given a ten-year grace period within which they are entitled to delay compliance with the control provisions of Article 2.[46] However, during this period, each eligible Party's annual level of consumption was not to exceed 0.3 kilogrammes. In addition, non-Article 5 Parties were allowed, at each reduction stage under Article 2, a level of national production slightly higher than their national consumption level to allow them to export the surplus to Article 5 Parties.[47]The purpose of these provisions was to enable developing countries to meet their basic domestic needs[48]. The Protocol also encouraged industrialised countries to provide financial and technical assistance to developing countries for alternative substances and new technologies.[49]

(vi) Other Provisions

The Protocol placed an obligation on the parties to regularly submit data on production, imports and exports of each of the controlled substances,[50] and to cooperate in the areas of research development, public awareness and the exchange of information.[51]

(vii) Entry into Force

The Montreal Protocol was initially signed on 16 September

1987, by 29 countries, accounting for an estimated 83 per cent of global consumption of CFCs, and came into force on 1 January 1989. The Protocol set the objective for the reduction of the consumption of CFCs by 50 per cent over the following 10 years. With the special provisions for developing countries and the production of CFCs by non-signatories, this objective had the effect of a real reduction in CFC use of approximately 30 per cent However, according to scientific assessments then, even an immediate 85 per cent reduction would barely save the ozone layer.

5. AMENDMENTS TO THE MONTREAL PROTOCOL

(i) Further Scientific Evidence and Risk Assessment

In May 1985, a team of researchers from the British Antarctic Survey, led by Joe Farman, published a report on their observations and research on the depletion of the ozone layer over the Antarctica. The researchers had been monitoring concentrations of CFCs in the atmosphere over the Antarctica since the early 1970s. Evidence of marked increases of CFC concentration and of ozone depletion suggested a possible correlation, although, this did not prove a cause and effect relationship. The initial report on the expedition, however, stopped short of definitely attributing the ozone hole over the Antarctic solely to CFCs. In March 1988, a more detailed report was published by the NASA Ozone Trends.[52] This report revealed that there had been a small, but significant depletion of the ozone layer over heavily populated regions of the northern hemisphere from 1969 to 1986; that the model projections upon which the control provisions of the Montreal Protocol were based had probably underestimated future ozone loss; and that greater depletion than estimated had already occurred. It further stated

that the ozone change 'may be due wholly, or in part, to the increase in atmospheric abundance of trace gases, primarily chlorofluorocarbons'[53] and confirmed that human activities were causing atmospheric concentrations of chlorine to increase on a global scale[54].

An Arctic expedition in the winter of 1988/89 showed that there were higher chlorine concentrations in the atmosphere than had been predicted and concluded that the Arctic was poised for a potential ozone hole. The results of the expedition also demonstrated the inadequacy of the existing models to accurately predict future ozone levels. This led scientists and policy makers to place growing reliance on an alternative concept - the total abundance of chlorine in the atmosphere or chlorine loading, as the measure of the potential threat to the ozone. Reduction strategies would be evaluated on their effect on chlorine loading rather than by predictions of future ozone levels.

On the basis of this new concept, a re-examination was required of other chlorine-containing substances not yet regulated under the Protocol. It was discovered, for example, that carbon tetrachloride had an ozone-depleting potential which exceeded all CFCs. The global consumption of this chemical was greater than all CFCs and halons combined. Methyl chloroform, which was considered a suitable substitute to CFCs, also posed a threat to the ozone layer.

The short-term phase-out of CFCs depends on the continuing use of hydrochlorofluorocarbons (HCFCs), which themselves destroy ozone, although to a much lesser extent. However, an expanded use of HCFCs could delay the decline in stratospheric chlorine even as CFCs and halons were phased out and prolong the point at which chlorine concentrations would return to the pre-ozone hole levels. CFC was also suspected of contributing

to as much as 25 per cent of the total greenhouse gas effect. Other greenhouse gases partially offset the depleting effect that CFCs had on stratospheric ozone, therefore any future measures to limit emissions of these other gases in order to mitigate global warming, would exacerbate ozone destruction unless chlorine concentrations were significantly reduced.

(ii) Response of Governments and Industry to the Montreal Protocol

Even before it came into force, the provisions of the Montreal Protocol were seen as too lenient by many countries, and others considered them to be obsolete in the light of new scientific findings[55]. By the end of 1989, regulations and policies in the UK, Belgium and West Germany were in place to ensure that 95 per cent of aerosols produced were CFC-free. In Tasmania, CFC aerosols and car air conditioning units were made illegal and Western Australia banned CFC aerosols from the end of 1989. Norway planned to reduce total CFC consumption by 90 per cent by 1995 and in Sweden regulations were instituted to eliminate all CFCs by 1995.

The European Community worked together as one regulatory unit for the purpose of implementing the control provisions in Article 2 of the Protocol. The EC implemented the Protocol through a Council regulation[56] and also adopted a resolution[57] which called on the EC Commission to reach voluntary arrangements with industry to curb CFC usage beyond the Protocol's requirements, and on an EC-wide labelling scheme for CFC-free products. The resolution also called for "urgent action" beyond the provisions of the Montreal Protocol to limit the use of controlled substances in "products and equipment containing them or in processes using them".[58]

In the US, sales of CFCs incurred direct tax, with the rate of taxation increasing at regular intervals until it was so draconian that the use of CFC-113, for example, to clean soldered electronic assemblies, became impracticable. Dupont, the US company which was the world's largest producer of CFCs announced in March 1988 that they would completely phaseout production of all CFCs and halons which pose the most serious threat to the ozone layer. A major factor leading to this decision was the company's lead over its competitors in the development of substitute chemicals.

The UK Government, on the other hand, decided not to impose requirements on the use of specific controlled substances, but rather to allow market forces and public awareness, combined with strict adherence to the Protocol's control provisions, to dictate which substances were to be produced and used within each basket of controlled substances.[59] Although this would result in price rises for certain substances, the Government believed that the increased costs would in turn give rise to improved prevention of losses and wastage and to the development of new technology. However, without the added impetus of mandatory legislation, the use of market forces did not cause industry to respond as rapidly as desired.

A survey of the UK electronics industry at the end of 1988 challenged the UK government's belief that businesses using CFCs could be relied on to voluntarily reduce their levels of CFC consumption.[60] In 1987 and 1988, Friends of the Earth campaigned for an end to the use of CFC aerosol propellants. This led to the announcement by nine UK aerosol manufacturers[61] in February 1988 of their plans to phase out the use of CFCs in all aerosol products and to switch to hydrocarbon propellants as soon as possible, and in any event by the end of

1989, and paved the way for the British Aerosol Manufacturer's Association to introduce a policy for "ozone-friendly" labelling.[62]

Another crucial factor behind the industry's move was the hard evidence of the effect of CFCs on the ozone layer provided by the 1988 NASA Report and the fact that supermarket chains, obviously prompted by consumer demands, decided to move their own-brand products away from CFCs and introduce "ozone-friendly" labelling on these products.

(iii) The First Meeting of the Parties to the Protocol - Helsinki, May 1989.

(a) The Helsinki Declaration

The treaty could not be legally revised at the First Meeting of the Parties, as it had only entered into force five months earlier.[63] However, the Parties to the Protocol approved by consensus the Helsinki Declaration on the Protection of the Ozone Layer[64]. Although this was a non-binding document, it carried important practical weight for the future deliberations on the strengthening of the Protocol. Under the Declaration, it was agreed, *inter alia*, that:

- the production and consumption of CFCs should be phased out as soon as possible, but not later than theyear 2000;
- the phase out of halons and the control and reduction of other ozone-depleting substances should take place as soon as feasible;
- the parties would commit themselves in proportion to their means and resources, to accelerate the development of environmentally acceptable substitute chemicals, products and technologies;

- the parties would facilitate the access of developing countries to relevant scientific information, research results and training and to develop appropriate funding mechanisms to facilitate the transfer of technology and replacement of equipment at minimum costs to developing countries.

The meeting also established the Open-Ended Working Group of the Parties which would prepare issues to be reviewed at the Conference of the Second Meeting of the Parties in 1990. At a meeting in the Hague in 1988, to consider practical details of implementing the Protocol, four panels of experts had been established - The Scientific Assessment Panel, the Technological Assessment Panel, the Economic Assessment Panel[65] and the Environmental Effects Assessment Panel. The research findings of these Panels would be used by the Open-Ended Working Group to assist in its work. The establishment of the Panels was endorsed by the Parties at their first meeting.

(b) Expert Assessment Panels and the 1989 Synthesis Report

The Scientific Assessment Panel was responsible for reviewing available scientific knowledge on issues relating to ozone depletion. The Panel for technical assessment was responsible for reviewing knowledge concerning the state of art production and use of technology and exploring all options to phasing out the use of controlled substances. The Economic Assessment Panel was mandated to analyse and evaluate the economic effects of ozone layer modification and of the technical options for limiting the use of ozone depleting substances. It was also responsible for establishing the quantities of controlled

substances required by developing countries for their basic domestic needs and the availability of such supplies, and for assessing the costs of technical solutions, the benefits of reduced use of controlled substances and the issue of technology transfer. The Environmental Effects Assessment Panel's mandate was to survey the state of knowledge of impacts on health and the environment of altered ozone levels and the resultant increased ultraviolet radiation reaching the Earth's surface.

The first combined report of the four panels was produced in 1989 (the Synthesis Report). The Scientific Panel assessed that the ozone layer recovery would require the early elimination of CFCs, halons, carbon tetrachloride and methyl chloroform, plus only a transitional reliance on HCFC substitutes. Even then, the target for the return of the ozone to its pre-industrial state (i.e pre-1970) would not be reached until around 2070 to 2080. The Environmental panel reported that, with the exception of future rates of skin cancer and eye cataracts, it was impossible to quantify the environmental effects of ozone depletion with any degree of confidence.

However, on balance, science experts were concerned about the uncertain consequences of postponing the restoration of the atmosphere to its earlier condition. In the light of the accelerating pace of industrial research, testing and technological innovation in 1988 and 1989, which had considerably increased the options for replacing and conserving CFCs, the Technological Panel concluded that it was "technically feasible" by the year 2000 to phase down the five controlled CFCs by at least 95 per cent, methyl chloroform by 90 - 95 per cent and carbon tetrachloride by 100 per cent. However, the panel could not agree on a feasible phaseout date for halons because of the continuing unavailability of suitable substitutes.

The Economic Assessment Panel identified, but could not quantify, "enormous beneficial impacts on human health and the environment" from cutting back on ozone-depleting substances. It concluded that "the monetary value of the benefits of safeguarding the ozone layer is undoubtedly much greater than the costs of CFC and halon reductions". The Synthesis Report concluded that a complete and timely phaseout of all major ozone-depleting substances was of paramount importance. The longer the delay in implementing measures, the longer the recovery time.

(iii) The Second Meeting of the Parties to the Montreal Protocol - London, June 1990

Against this background, the first amendments to the Montreal Protocol were adopted at the Second Meeting of the Parties in London. By the time of the Conference, 58 governments plus the EC had ratified or acceded to the Protocol. They accounted for an estimated 99 per cent of world production and 90 per cent of consumption of controlled substances, and included 28 developing countries.

(a) New Controlled Substances and Control Measures

The London revisions to the Protocol added 12 new chemicals to the list of controlled substances - 10 new CFCs, carbon tetrachloride and methyl chloroform - and 34 HCFCs were included as transitional substances with reporting requirements. The amendments provided for a 50 per cent reduction in CFCs by 1995, and 85 per cent reduction by 1997 and a complete phaseout by 2000,[66] and a commitment by the Parties to review the situation with the objective of accelerating the reduction schedule.

The Scientific Panel had stated in the Synthesis Report of 1989 that the phaseout of methyl chloroform would be the single most important short-run contribution to lowering stratospheric ozone concentration, and the Technical Panel had reported that a 90-95 per cent reduction of the chemical by 2000 was technically feasible. Based on these assessments, the Parties agreed to a freeze on methyl chloroform in 1993 at 1989 levels, with a 30 per cent reduction in 1995, a further 70 per cent reduction in 1997 and a complete phaseout in 2005 and a commitment to review, no later than 1992, the feasibility of even earlier reductions and phase out.[67] It was agreed that from 1995, consumption and production levels of halons would be reduced by 50 per cent and of carbon tetrachloride by 85 per cent with a phaseout of both chemicals by 2000. 1989 was selected as a base year for calculating control levels for the newly added substances.

Under Article 2.5, any Party may transfer to another any portion of its allowable level of production of controlled substances as set out in Article 2A to 2E, provided that the total combined calculated levels of production of the Parties concerned does not exceed the production limits set out in Article 2. At the same time, the allowable levels of production may be exceeded by a specified percentage "in order to satisfy the basic domestic needs of Article 5 Parties.

According to a note issued by the Secretariat[68], "It appears that the term 'calculated level of production' contained in paragraph 5 of Article 2 includes production to meet basic domestic needs of the Parties operating under Article 5, paragraph 1. Therefore, a party can transfer to another Party its right to produce to meet the basic domestic needs of Parties operating under Article 5, paragraph 1".[69] Secondly, since

production limits are applicable to Parties operating under Article 5.1 only from 1 January 1999, it appears that the transfer of production rights to those parties will not take place until after that date.

(b) Further restrictions on trade with non-parties

The ban on exports of controlled substances to non-parties, which originally had applied only to exports from non-Article 5 parties, was extended to apply to exports from all parties. Furthermore, any existing party that did not accept the London amendment containing the newly controlled substances would be considered a non-party with respect to those substances, and hence would be subject to trade restrictions.

(c) Measures to ensure compliance

Compliance with obligations under the Protocol is measured through the reporting requirements of Article 7. Parties are obligated to provide the Secretariat with annual statistical data on production, imports and exports of controlled substances, including imports and exports to parties and non-parties. However, there were difficulties in acquiring reliable data and no means of independently verifying data which was produced. The Secretariat does not have the mandate to inspect and verify that data reported is accurate.

The recommendations of the Working Group of Legal Experts for the establishment of an Implementation Committee were adopted on an interim basis by the Conference of the Parties. The Implementation Committee would consider and report to the meeting of the parties cases of non-compliance. The Meeting would be ultimately responsible for deciding steps to bring about full compliance, which could include measures

to assist compliance. The objective behind the establishment of the Implementation Committee was to respond quickly to early indications of non-compliance, with the aim of resolving problems amicably and obviating the need for recourse to formal arbitration or the International Court of Justice.[70]

(d) The perspective of low-consuming developing countries and the creation of the financial mechanism.

At the Second Meeting of the Parties, the main issue of contention was the treatment that should be accorded developing countries, who were consuming less than 20 per cent of the CFCs produced in the world.

The Science Panel assessed that a 15 year lag in phasing out CFCs by countries accounting for 10 to 20 per cent of the total consumption of controlled substances would not materially affect the peak chlorine concentrations and would lead to a minor delay in attaining pre-industrial ozone levels. However if 20 per cent of the 1986 CFC consumption were to continue indefinitely, chlorine loading would not fall below the level required for a return of the ozone layer to its pre-industrial level. Furthermore, long-term non-compliance by countries consuming as little as 10 per cent of the world's 1986 total could delay the elimination of the ozone hole until the end of the twenty second century. CFC technology was inexpensive and uncomplicated, and some developing countries would therefore be tempted to build their own facilities if the only alternative was to purchase more expensive substitutes, technology and products from Europe, Japan and the USA.

The treaty's trade restrictions against non-parties were irrelevant when the sheer size of their populations would provide an adequate market for domestically produced CFC-related

products. Furthermore, to the extent populous nations stayed outside the Protocol, new producers in developing countries might try to supply CFCs and related-products to Africa, Asia and Latin America, even as industrialised country manufacturers were scaling down production. By August 1989 only 14 developing countries were party to the Protocol. In the light of these factors, there was a potential for large scale non-accession to the Montreal Protocol.

The governments of developing countries were not indifferent to CFC emissions. They recognised that their populations could also be affected by the adverse effects resulting from ozone depletion, but their objective was to maintain the maximum use of CFCs for the longest possible grace period. The industries in developing countries had invested heavily in CFC production facilities, and they wanted to know what assistance would be available to them for converting these facilities, where they could acquire new ozone-friendly technologies and who would bear the cost of amortization. With industrialised countries now on the fast track towards phaseout rather than a 50 per cent reduction, resulting in dwindling supplies of CFCs, or expensive, if not unavailable substitutes, the grace period became irrelevant. It was now in the interest of Article 5 Parties to move as rapidly as possible to new technologies and substitutes, and to ensure that financial and technical help was available to accomplish this.

To deal with the concerns of the developing countries, and ensure their participation in the Protocol, the London amendments included provisions relating to technology transfer and the establishment of a financial mechanism. An Interim Multilateral Fund was established[71] to assist eligible parties[72] to comply with the control measures.

For a number of newly industrialising developing countries, technology transfer was a separate issue from financial aid. For example, Brazil, China, India and Mexico could already produce CFCs and therefore wanted to be able to produce any new substitute without being subject to potential exploitation by large foreign patent holders. They called for guaranteed access to new technologies on terms they could afford.

However, industry representatives argued that entrepreneurs would be reluctant to invest in research and development of new products if the results would be given away to companies in developing countries that would undercut potential markets, and furthermore, governments would not be able to enforce the transfer of private sector technology on non-commercial terms. They maintained that it would be best for such transfers to take place through joint ventures and licensing arrangements and that investment would gravitate towards developing countries where the investment climate was favourable, market prospects good and intellectual property rights respected.

Although the Protocol provides, through its financial mechanism, assistance to Article 5 Parties to enable them to purchase new technologies, developing country parties were disappointed that no provision was made for the transfer of technology on preferential terms nor did it deal with many of the traditional problems of technology transfer.[73]

(iv) Third Meeting of the Parties to the Montreal Protocol - Nairobi, June 1991

The London Amendment to the Protocol represented a great advance in the drive to protect the ozone layer. However, new scientific evidence presented to the Third Meeting of the Parties demonstrated that the rate of ozone depletion in both

hemispheres was greater than had been estimated when the London amendments were initially negotiated. It was clear that more was required to tighten up the Protocol's provisions for controlling ozone-depleting substances.

Representatives from several developed countries called for a strengthening of the measures for restricting the use of controlled substances, on the basis that they had each imposed more stringent controls nationally. The EC, for example, had already agreed a phase-out of CFCs by 1997. Sweden, Norway, Switzerland, Austria, Denmark and the Netherlands were each planning to enforce regulations which would reduce the use of controlled substances below levels mandated by the Protocol, including further limits on the use of transitional substances and their phase out as soon as technically possible.

In spite of the above findings, no further control measures were adopted by the Parties at their third meeting in June 1991. However, the Parties did adopt, in accordance with Article 4.3, an annex elaborating a list of products containing CFCs and halons. The Annex subsequently entered into force on 27 May 1992, and within one year of that date, Parties who had not objected to the list were required to ban the import of the products listed from non-party states.

(v) The Fourth Meeting of the Parties - Copenhagen, November 1992

By the date of the Fourth Meeting of the Parties, the phase-out of substances controlled by the Protocol was about three years ahead of the schedule anticipated under the London Amendments and elimination costs had become much lower than anticipated in 1989. However, evidence presented to the meeting in the reports of the three assessment panels, made it imperative that

significant amendments and adjustments be made to the Protocol's provisions.

(a) Reports of the Expert Assessment Panels

The Scientific Assessment Panel reported that ozone depletion was significantly more serious than had been the case in 1990 and that there was no doubt that it was caused primarily by the emission of anthropogenic chemicals containing chlorine and bromine. Strong Antarctic ozone holes continued to occur and levels of depletion similar to those over the Antarctic region were to be found over Northern Europe, parts of North America, Australia, New Zealand and other populated areas. For the first time, serious levels of UV-B radiation had been observed in conjunction with ozone depletion over Antarctica and Australia and in a mountainous regions of Europe.[74]

The findings of the Environmental Effects Assessment Panel were of a growing threat to the Earth's food chain as ozone depletion affected the productivity of the oceans. Increased UV-B radiation was affecting marine organisms in their natural environment. This was demonstrated in seas surrounding the Arctic ice, where local phytoplankton communities were reduced in productivity while under the ozone hole.[75] The report of the Technology and Economic Assessment Panel stated that it was feasible to phase-out CFCs, methyl chloroform and carbon tetrachloride between 1995 and 1997; that halon production could be eliminated by 1995 or earlier, assuming that halon banks could be established and trading regulated; and methyl bromide emissions could be significantly reduced by a variety of measures.[76]

Most developed countries represented at the meeting were in favour of tightening the Protocol's provisions to reflect the

recommendations of the Assessment Panels (a number preferred even earlier phase-out dates), a rapid phase out of the transitional substances, and the inclusion of methyl bromide in the Protocol as a controlled substance, since it was a known ozone-depleting substances. In principle, most of the representatives of Article 5 Parties favoured the more rapid phasing out of the controlled substances by the parties not operating under Article 5, paragraph 1. However, they wanted to be sure that exports of those substances would be guaranteed, at affordable prices, during their own grace and phase-out periods.

Furthermore, they insisted that they should not be asked to advance their phase-out schedules nor assume commitments regarding more ozone-depleting substances until they were sure the provisions of the Protocol concerning technology transfer and financial assistance were working satisfactorily. Several of them called for all impediments to the transfer of technology to be removed and expressed the fear that developed country private suppliers of these technologies might refuse to transfer the technologies or overcharge for their transfer.

(b) Adjustments to the Protocol

Taking into account the reports of the Assessment Panels and the concerns expressed by both developed and developing country Parties, the following adjustments were adopted: a 75 per cent reduction in the consumption and production of CFCs from 1 January, 1994; an 85 per cent reduction in the consumption and production of carbon tetrachloride from 1 January 1995; a 50 per cent reduction in the consumption and production of methyl chloroform from 1 January 1994; and a complete phaseout of the above three chemicals by 1 January 1996 and of halons by 1 January 1994. However, the reductions

and phase-out of controlled substances are subject to production and consumption exemptions for essential uses to be approved by the Parties or to meet the basic domestic needs of Article 5 parties.

(c) Amendments to the Protocol

(i) HCFCs and HBFCs

Amendments to the Protocol included the addition of HCFCs among the substances to be controlled. The Parties agreed to a freeze on HCFCs by 1 January 1996 at levels which would not exceed the sum of 3.1 per cent of the level of consumption of CFCs in 1989 and the level of consumption of HCFCs in 1989, followed by further reductions between 1 January 2004 and 1 January 2020, with phase-out from 1 January 2030. Hydrobromofluorocarbons are to be completely phased out from January 1, 1996, except to the extent necessary to satisfy essential uses.

(ii) Methyl Bromide

One of the most significant issues decided on at the meeting, was the inclusion of methyl bromide in the list of substances to be controlled under the provisions of the Protocol. The Science Assessment Panel reported that controls on methyl chloroform and methyl bromide would have the greatest effect on limiting ozone depletion during the next one to two decades because of their short atmospheric lifetimes. Methyl bromide is used as a soil and quarantine fumigant and for the fumigation of grain and fruit in storage. Any ban on the chemical could have serious implications for the international trade in agricultural commodities.

Many delegations, of both developed and developing

countries, had expressed concern over the issue of restricting the use of methyl bromide. They argued that because the significance of man-made methyl bromide in ozone depletion was not yet known, and secondly, as there were no viable alternatives for certain essential uses, such as quarantine fumigation, further studies were necessary before any controls were imposed. Representatives of developing country parties, in particular, were concerned that the inclusion of methyl bromide as a controlled substance in the Protocol could have serious effects on their agriculture-based economies and that proposed new regulation might be used to establish non-tariff barriers to international trade.

The provisions finally adopted by the Parties, reflected the concerns of both groups. The Copenhagen Amendment to the Protocol provides for a freeze on the consumption and production of methyl bromide at 1991 levels from 1 January 1995. However, the use of the chemical for quarantine applications (which includes pre-shipment quarantine fumigation) is to be excluded when calculating a Party's consumption and production levels. Furthermore, as in the case of other controlled substances, Parties can exceed the limits placed on their production levels by up to 10 per cent for the purpose of providing for the basic domestic needs of Article 5 Parties.[77]

(iii) Application of adjustments and amendments to Article 5 Parties

It was agreed by the Parties that further adjustments or Amendments to the Protocol, following those adopted at the Second Meeting of the Parties, would apply to Article 5 Parties only after a review of the situation by these Parties, which was to take place no later than 1995.[78] The Copenhagen Amendment also provides that any non-Article 5 Party may transfer to another

such Party any portion of its calculated level of consumption provided that the calculated levels of consumption of CFCs of the transferor Party did not exceed 0.25 kilograms in 1989 and the total combined calculated levels of consumption of the Parties concerned in the transaction do not exceed the consumption limits set out in the Protocol.[79]

(iv) Entry into force

The Copenhagen Amendment entered into force in June 1994.

(v) Other decisions

Other decisions[80] taken by the Parties at their Fourth Meeting included:

(i) the adoption of the non-compliance procedure drawn up by the Ad Hoc Working Group of Legal Experts and an indicative list of measures that might be taken in respect of non-compliance.

(ii) the establishment of the Multilateral Fund, in place of the Interim Multilateral Fund, which became operative from 1 January 1993, and the Executive Committee for the Fund; and

(iii) an agreement on the criteria and procedure to be applied in assessing an essential use for the purpose of the control measures in Article 2.

(iv) import and export of recycled and used controlled substances are not to be taken into account in calculating consumption levels (except when calculating the base year consumption levels under Article 5.1). However, data on such imports and exports are subject to the reporting

requirements of Article 7. The Parties agreed that recovery, reclamation and recovery of controlled substances should be an essential party of the strategy to facilitate the early phase-out of ozone depleting substances.

(v) approved technologies for the destruction of controlled substances which had been recommended by the Ad Hoc Technical Advisory Committee on Destruction Technologies.

(iv) The Fifth Meeting of the Parties - Bangkok, November 1993

(a) Trade restrictions on products made with, but not containing, controlled substances.

One of the most significant findings made by the Technology and Economic Assessment Panel concerned the identification of products *made with, but not containing,* controlled substances listed in Annex A of the Protocol[81]. The Panel reported[82] that it was not technically feasible to make such identifications with the vast majority of products concerned. In the case of the remaining products, where such identification could technically take place, the identification process was extremely complicated and expensive.

The processes would involve either identifying trace residues in the products or inspecting manufacturing processes, and such inspections would only be administratively feasible with the cooperation of exporting companies and their governments. Furthermore, it would be difficult to select which products to subject to laboratory testing or to factory inspection since virtually every product in trade might have a component that was manufactured with a controlled substances. There were no

internationally accepted sampling and testing protocols to detect such residues and it would mean an international legal standard of proof may need to be elaborated.

In these circumstances, and in the light of phase-out deadlines under the provisions of the Protocol[83], any additional export restrictions would not act as an incentive to encourage non-parties to join the agreement[84]. On the basis of the Panel's report, the Parties decided not to impose a ban or restriction on imports of products *produced with, but not containing,* controlled substances in Annex A.[85]

(b) Halon production and consumption exemption for essential uses

The Technology and Economics Assessment Panel also found that none of the applications by Parties for halon production in 1994, that is after phase-out of the chemicals, had met the Essential Use Production/Consumption Exemption Criteria agreed upon by the Parties at their fourth meeting. There are technically and economically feasible alternatives and substitutes for most applications, and in cases where such alternatives were not available, halon is also currently available in sufficient quantity and quality from existing stocks of banked and recycled halon.[86]

Based on the findings and recommendations of the Panel, the Parties decided that no level of production or consumption of halons is necessary to satisfy essential use of halons in non Article 5 states for 1994.[87]

(c) Transfer of production rights under Article 2

With effect from 1 January 1995, Article 5.1 Parties which require controlled substances from other Parties are requested to furnish to the governments of supplying Parties, a letter

specifying the volume of substances required and stating that their requirements are for the purposes of meeting their basic domestic needs. Parties supplying controlled substances to Article 5.1 Parties are, in turn, requested to provide the Secretariat, on an annual basis, a summary of requests received and to indicate whether the receiving parties have affirmed that the supply is to meet basic domestic needs.[88]

(d) Relationship between the Montreal Protocol and the Basel Convention on Transboundary Movement of Hazardous Wastes.

According to a note issued by the Ozone Secretariat[89], the Basel Convention may have implications for the import and export of used controlled substances which are included in Annex 1 of the Convention. The Secretariat of the Convention was therefore requested to clarify whether used ozone-depleting substances are regulated wastes under the Convention. In response to this request, the Technical Working Group of the Basel Convention issued a note on the classification of ozone-depleting substances as hazardous wastes in accordance with the Convention's definition.

The note indicated that ozone-depleting substances, that become waste in accordance with the definition of waste in Article 2[90] of the Basel Convention, and are subject to transboundary movements could be considered hazardous wastes under the definitions provided in Article 1 of the Convention, and were therefore subject to the trade restrictions imposed by Article 5.4 of the Convention. This article bans exports and imports of wastes classified as hazardous between Parties and non-Parties, but there is no ban on trade among the Parties nor on trade between a Party and a non-Party, provided the latter is

in accordance with Article 11 of the Convention[91].

In order to comply with the trade provisions of the Basel Convention therefore, parties to the Montreal Protocol and their trade partners would either need to ratify the Basel Convention or enter into an Article 11 arrangement among themselves.

On the basis of this report, the meeting urged Parties to the Basel Convention to take appropriate decisions, consistent with the objectives of the Basel Convention and of the Montreal Protocol, in order to facilitate early phase-out of the production and consumption of the controlled substances of the Montreal Protocol.[92]

6. THE OZONE SECRETARIAT

The Secretariat for the Vienna Convention and the Montreal Protocol is based in Nairobi and its functions are crucial to the effective evolution and implementation of the Protocol. The Secretariat is responsible for arranging and servicing the meeting of the Parties to the Protocol. It takes the initiative in developing constructive ideas and provides advice to the Parties which form the basis of matters discussed and decided upon at the meetings of the Parties.

The Parties are obliged, under Article 7, to submit data on their consumption and use of controlled substances and on their activities in the area of research, development and exchange of information. The Secretariat then prepares and distributes reports to parties based on the data it receives. In the cases of non-compliance with the Protocol's obligations, the Secretariat carries out the administrative aspects of the non-compliance complaints procedure, and receives submissions of non-compliance from parties which it then passes on to the Implementation Committee. It is also responsible for arranging

and servicing the meetings of the Implementation Committee.

The Secretariat is also responsible for providing the Secretariat of the Multilateral Fund with information and advice it requires for servicing the meetings of the Fund's Executive Committee. It also advises the Executive Committee of the Multilateral Fund on Article 5 parties that are eligible to receive funding under Article 10 of the Protocol,[93] and for providing the Fund Secretariat with any relevant information and advice required by it to service the meetings of the Executive Committee.

Unless UNEP has sufficient information to establish that a country's annual consumption was less than 0.3 kilogramme per capita, the country could not be certified as an Article 5 Party, and would therefore not be entitled to the benefit of the 10-year grace period nor be eligible for funding from the Multilateral Fund or to receive exports from non-Article 5 Parties to meet their basic domestic needs.[94]

7. FINANCIAL MECHANISMS

(i) The Multilateral Fund

At their Second Meeting, the Parties established a mechanism for the purpose of providing financial and technical co-operation to Parties operating under Article 5.1, in order to assist them in meeting their obligations under the Protocol to eliminate the production and consumption of ozone depleting substances. The Multilateral Fund was established as part of this mechanism and operates under the authority of the Parties who decide its overall policies.

The Fund was originally established as an interim fund and began formal operations in January 1991. Its interim status ended on 31 Dec 1992, after which it was established on a

permanent basis. Contributions to the Fund are made by the industrialised country Parties to the Protocol, on the basis of the UN scale of assessment. Donor countries can also count bilateral aid up to 20 per cent against their contributions to the Fund, provided such aid is additional and specifically in accordance with the Fund's criteria. However, recipient countries have the right to request that all their needs be met solely from fund.

The Fund provides money for the development and implementation of projects in developing countries which are aimed at phasing out the production and use of ozone-depleting substances, provides technical expertise and assistance, and information on new technologies as well as training. It also provides technical and financial assistance to enable countries to gather data which they are required to submit to the Ozone Secretariat under Article 7 of the Protocol. An indicative list of categories of incremental costs, adopted by the Parties to the Protocol at their Fourth Meeting in 1990, is the basic document used to determine projects which are eligible for assistance from the Fund.

The Fund can also assist countries, which are not yet Parties to the Protocol, to carry out country studies. This sort of assistance will be in the form of providing information and advice, rather than actual funding, and is aimed at encouraging these non-Party states to participate in the agreement[95].

Fund-assisted activities are implemented through the four implementing agencies: UNEP, United Nations Development Programme (UNDP), United Nations Industrial Development Organisation (UNIDO) and the World Bank. Other multilateral agencies can be invited by the Executive Committee to cooperate with the Fund.

The Multilateral Fund is administered by an Executive Committee, assisted by the Fund's Secretariat, composed of 14 members with equal representation from developing and developed Parties. The Fund and its Secretariat are based in Montreal. According to its terms of reference, the Executive Committee is responsible for developing and monitoring the implementation of operational policies, guidelines and administrative activities to facilitate the funding process, including the review and approval of country programs, project proposals and the work programs of the implementing agencies; managing the funding process; evaluating and approving projects for which the agreed incremental costs exceed $500,000; reviewing disagreements with decisions taken with regard to requests for the financing of projects where the agreed incremental costs are less than $500,000 ; and reporting annually to the meeting of the Parties on the activities exercised under its functions and making recommendations as appropriate.

ii. The Global Environmental Facility

Certain countries, particularly those with economies in transition, are not classified as developing countries for the purposes of the Montreal Protocol and are therefore not entitled to assistance from the Multilateral Fund. However, these countries may still require financial and technical assistance for the purpose of phasing out their use of controlled substances.[96] Countries in this category may be entitled to financial assistance from the Global Environmental Facility (GEF).

The GEF was originally established in 1990 as a three-year pilot program,[97] to provide grants and low-interest loans to developing countries to help them carry out programs to relieve

pressures on global ecosystems. The Facility is a cooperative venture among national governments, the World Bank, and UNEP. The GEF was established to address the following environmental issues:

- the reduction in the level of emissions of greenhouse gases which cause global warming;
- the preservation of the earth's biological diversity and natural habitats;
- the pollution of international waters;
- the protection of the ozone layer from further depletion.

To qualify for funding from the GEF a project must relate to at least one of the four specific areas of concern mentioned above, and must be one that would not be economically viable in a particular country without support from the Facility.

With regard to projects to protect the ozone layer, only countries which are parties to the Montreal Protocol are entitled to assistance from the GEF. The general principles on which the Facility bases its decisions to fund an ozone-related project must be agreed by the Executive Committee of the Multilateral Fund under the Protocol. Only a small percentage of the Facility's resources are spent on the reduction of ozone-depleting substances because most developing countries that have ratified the Montreal Protocol are eligible for support through the Multilateral Fund and therefore not eligible for GEF funding.

However, the GEF has recently provided US$4.8 million to fund the establishment in certain countries of stations to monitor ozone depletion and global warming. The stations are to be

established in Algeria, Argentina, Brazil, China, Indonesia and Kenya - countries classified as developing countries under Article 5 of the Montreal Protocol, and which would not normally be entitled to benefit from funding from the Facility. To qualify for funding from the GEF, projects to protect the ozone layer must involve one or more of the substances controlled under the Montreal Protocol, and countries applying for financial assistance must meet the same criteria as those receiving funding through the Multilateral Fund.

8. THE ENVIRONMENTAL EFFECTIVENESS OF THE MONTREAL PROTOCOL

According to the 1993 Report of the Technology and Economic Assessment Panel[98], most developed nations party to the Protocol are well below the amounts authorised under the phaseout schedule. Governments and firms are able to move faster towards the phase-out of ozone-depleting substances because of the development of substitute substances and processes.

For example, by January 1993, New Zealand and Sweden had reduced CFC use by more than 75 per cent and Canada, the EC, Japan and the United States had reduced their use by more than 50 per cent below 1986 levels. As a result of this progress by consuming nations, many CFC production facilities are closing or switching to more ozone-friendly production methods. Article 5 developing nations continue to phase out CFC use in aerosol products and other sections, whilst developing countries who do not qualify as Article 5 parties have equalled or exceeded the rate of production of developed nations. For example, Singapore reduced its use of CFCs by 50 per cent by the end of 1992.

Individual companies have also achieved complete phase-

outs in their global operations. Ozone-friendly substitutes are now available in quantities sufficient to meet growing market demands. Industry sectors that have converted from CFCs to substitutes include automobile and aircraft manufacturers, manufacturers of household consumer appliances and chemical producers.

Some parties are implementing phaseout strategies and regulations more stringently than those required under the Protocol. The European Community, for example, will phase out production and imports of CFC, methyl chloroform and carbon tetrachloride by January 1995; Canada will phase out carbon tetrachloride by 1995; the US has proposed a complete phaseout of methyl bromide by 2000; and Canada, the EC, Netherlands, Sweden, Switzerland and the US are proposing product use restricitons, a lower initial cap and/or accelerated phaseout of HCFCs.

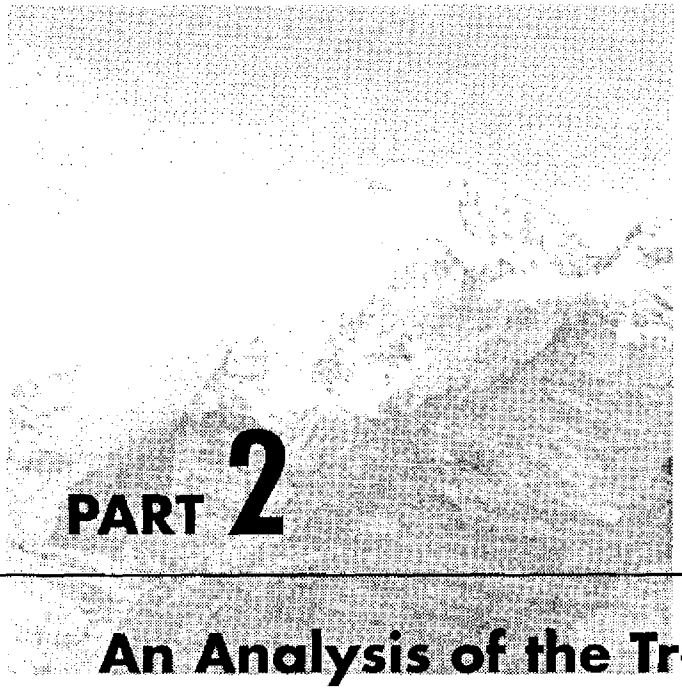
However, the phaseout in developed nations is rapidly affecting the developing nations. Developing nations are concerned that the phaseout in developed countries and the subsequent closing of production facilities for ozone-depleting substances, will jeopardize their reliable supply of some controlled substances. Furthermore technology dependent on ozone-depleting substances is becoming obsolete and developed nation markets for developing nation products are demanding products that do not contain ozone-depleting substances. In addition, there is some concern that producers in developed nations are pricing controlled substances lower in developing countries than in developed nations thus increasing dependency and reducing the incentives for alternatives and substitutes.

The Report concluded that "[d]espite the challenges of conversion and uncertainties of which substitutes and

alternatives are best in refrigeration, air conditioning and foam insulation sectors, a rapid decline in the production of ozone depleting substances is taking place worldwide. [But] there continues to be a need for international cooperation and increased incentives particularly in those sectors and nations where progress is not rapid enough".[99]

The Montreal Protocol is convincing evidence of the ability of players with different, and sometimes conflicting, interests to rally together to effectively deal with a global environmental problem. However, although the initial agreement has been ratified by over 100 states, a number of these have still not ratified the London and Copenhagen amendments to the Protocol. Scientists have predicted that, even with full implementation of the Protocol by all countries of the world, the ozone layer will continue to deplete until the year 2000 and will thereafter improve gradually to its pre-1970 shape in another 50 years. The recent reports of the three Assessment Panels indicate that the Montreal Protocol has gone some way in effectively dealing with the problem of ozone depletion.

However, the serious effects of ozone depletion call for more international cooperation in order to implement the provisions of the Protocol. Such cooperation will not simply involve the participation of more states in the treaty, but, and perhaps more importantly, the need to ensure that countries, particularly developing countries, have access to ozone-friendly technologies and substances.



PART 2

An Analysis of the Trade Measures in the Montreal Protocol Under GATT

A. THE PURPOSE OF THE TRADE MEASURES IN THE MONTREAL PROTOCOL

The primary impetus behind negotiating a multilateral agreement to protect the ozone layer was the recognition that if individual countries or even regional or economic groups took action rather than reaching global agreement, an increase in the production

of ozone-depleting chemicals in non-participating countries could negate the environmental benefits of actions by a limited number of countries. Early concerns focused on increased production by European countries and Japan to supply markets supplied by U.S. producers prior to the imposition of controls within the United States.

The drafters of the Protocol also understood that the use of ozone-depleting chemicals tended to increase with a country's level of industrialization and that many countries which were relatively small consumers of these chemicals at the time the Protocol was signed would probably increase consumption significantly unless an alternative was available. It was therefore a reasonable assumption that production of ozone-depleting chemicals would increase in countries without control measures either for domestic consumption or export, thereby offsetting the benefits achieved by countries limiting production.

Without global regulation of consumption of ozone-depleting chemicals, the environmental goal of protecting the ozone layer could not be achieved. From a trade perspective, unilateral or regional action to reduce domestic production and restrict imports would have had a significant impact on exporters, particularly developing countries without an opportunity to influence the development of the environmental standards and implementation scheme.

The Montreal Protocol contains provisions which impose direct restrictions on international trade as well as provisions with indirect effects on trade and investment. After seven years of implementation, it appears that while the potential for imposition of the trade restrictions under Article 4 has had an effect in encouraging participation in the Protocol, other

provisions, such as the control measures in Article 2 and the technical and financial assistance available under Article 10, have also had an impact on trade and investment.

The objectives of the Montreal Protocol can only be effectively achieved if all major producers and consumers of ozone-depleting chemicals participate in the agreement, whereby there are persuasive reasons why a country may decline to join. Some countries may not be convinced by available scientific evidence and may therefore not accept that a problem really exists. Some may attach a low priority to ozone protection and, having limited means, choose to concentrate national resources on other problems. A third reason for non-participation may be to avoid the economic costs that might be involved in complying with the obligations of an international agreement. Countries in this category may continue to produce or use ozone-depleting chemicals while benefitting from the actions taken by Parties to the Protocol and gain a competitive advantage and increased share in the global market.[10]

The Montreal Protocol contains provisions which address all these issues. The provisions for assessment and review of its control measures on the basis of scientific, environmental, technical and economic information have generated convincing evidence of the cause of ozone depletion. Provisions for the special and differential treatment for developing countries in the form of financial and technical assistance and a grace period for meeting the control measures are aimed at encouraging participation in the Protocol by countries with limited financial resources. At the same time, the Protocol discourages "free-riders", those who would benefit without sharing the costs of environmental improvement by imposing restrictions on exports and imports between Parties and non-Parties.

The Montreal Protocol is an environmentally effective agreement that does not impose an unfair restriction on international trade because of a combination of well-conceived and skillfully drafted provisions, including those concerning ongoing scientific evaluation of the causes of ozone depletion and the effectiveness of its environmental standards and control measures, special and differential treatment for developing countries, industrial rationalization of ozone-depleting chemical production and financing technology transfer and technical assistance for developing countries. This section discusses how this combination of measures, which includes but is not limited to trade sanctions, is consistent with international trade law and achieves the goal of protecting the ozone layer.

B. PROVISIONS OF THE MONTREAL PROTOCOL WHICH HAVE AN IMPACT ON INTERNATIONAL TRADE

1. The Controls on Production and Consumption of Ozone-depleting Chemicals in Article 2

Under Article 2 of the Protocol, controls are placed on the production and consumption of ozone-depleting chemicals. Consumption is calculated as production plus imports minus exports. However, from 1 January 1993, exports of controlled substances to non-Parties can not be subtracted in calculating consumption. The formula used in calculating consumption encourages Parties to limit imports. The subtraction of exports to non-Parties, combined with the trade bans in Article 4 which are phased in over time, serve to curtail exports to non-Parties.

2. Trade Restrictions in Article 4

Trade measures in Article 4 of the Montreal Protocol are

designed to enable the Parties to manage trade in (1) ozone-depleting chemicals controlled under the Protocol, (2) products containing ozone-depleting chemicals, and (3) products manufactured with, but not containing ozone-depleting substances. The Protocol provides for the regulation of both imports and exports by Parties of substances and products.

The trade restrictions contained in Article 4 of the Protocol are aimed at avoiding the problem of the so-called "free-riders", countries which would enjoy the environmental benefits of the Protocol without sharing the costs of implementation.

The Protocol stipulates that: (1) within a year of entry into force (1 January 1992), imports of controlled substances from non-Parties were be banned; (2) from 1 January 1993, exports to non-Parties of controlled substances were banned; (3) within three years of the Protocol's entry into force, the Parties would elaborate a list of products containing ozone-depleting chemicals and that Parties which did not object to the list would be obliged to ban their import from non-Parties within one year (1 January 1992); and (4) within five years of the Protocol's entry into force, the Parties would determine the feasibility of banning or restricting imports of products manufactured with, but not containing, ozone-depleting chemicals (1 January 1994).

An important feature of the scheme for controlling trade under the Montreal Protocol is the non-discrimination provision in Article 4, paragraph 8 which states that:

> *"Notwithstanding the provisions of this Article, imports referred to in [this Article] and exports referred to in [this Article] may be permitted from, or to, any State not party to this Protocol, if that State is determined, by a meeting of the Parties, to be in full compliance with*

Article 2, Articles 2A to 2E and this Article, and have submitted data to that effect as specified in Article 7."

This provision serves as the authority for allowing exports to non-Parties who have shown compliance with the control measures in the Protocol. The Parties have also made more general exceptions to these trade prohibitions such as that contained in Decision IV/17C adopted at the Fourth Meeting of the Parties which provided for a temporary exemption from the ban on exports to non-Parties from 1 January 1993 until the Fifth Meeting of the Parties for countries which met certain conditions.

Under Article 4 of the Protocol, parties are required to ban imports from and exports to non-parties of controlled substances. In addition to the bans on export and import of bulk chemicals, the Protocol requires parties to place trade restrictions on products *containing* controlled substances. Parties that do not object to the lists are obliged to implement bans on imports of the relevant products from non-party states.[102] Finally, parties are required to consider the feasibility of restricting or banning imports from non-parties of products *produced with*, but not containing, controlled substances listed in the various annexes. If determined feasible, the Parties would elaborate a list of relevant products and ban the import of those products from non-Parties.

Article 4 also requires parties to discourage to the fullest extent practicable the export to any non-Party, any technology for producing or utilizing controlled substances. Parties are also required to refrain from providing new subsidies, aid, credits, guarantees or insurance programs for the export to non-Parties of products, equipment, plants or technology that would

facilitate the production of controlled substances.

3. Financial and Technical Assistance for Developing Countries Under Article 10

As discussed above, developing countries with low consumption of controlled substances are eligible for financial and technical assistance to meet the "agreed incremental costs" of compliance with the control measures of the Protocol.[103]

At their Fifth Meeting in November 1994, the Parties approved a three year budget of $510 million to carry out the financing and technology transfer activities authorized by Article 10. As of March 1994, the Fund Secretariat reported that nearly $142 million dollars had been disbursed for approved programs and projects.

The Multilateral Fund established as the financial mechanism of the Montreal Protocol provides financial and technical assistance to Article 5 Parties and facilitates the transfer of new technologies to them. The Fund finances "all agreed incremental costs" incurred in complying with the control measures of the Protocol. The funding of incremental costs is intended to act as an incentive to developing countries to adopt, as quickly as possible, ozone protecting technologies.

At their Fourth Meeting in 1990, the Parties adopted an indicative list of categories of incremental costs. The list is used as a basis for determining what costs incurred by a Party would qualify as an "incremental cost", and guides the Fund in making decisions on which projects and programmes are eligible for funding. The list includes the costs of converting or retiring production facilities and establishing new facilities for manufacturing substitute chemicals, the costs resulting from the elimination of controlled substances in the manufacture of

intermediate goods and the costs incurred in the modification or replacement of end-use equipment.

B. RELATIONSHIP BETWEEN GATT AND THE MONTREAL PROTOCOL

The rules regulating international trade on the whole are found in the General Agreement on Trade and Tariffs (the GATT), which has as its objective the liberalization of trade through the removal of tariff and non-tariff barriers to free and fair trade.[104] Concerns have been raised over the compatibility of the provisions of GATT and trade measures in the Montreal Protocol and other multilateral environmental agreements.

1. GATT Article I - The Most Favoured Nation Principle

Article I of the GATT requires that any trade advantage conferred by a GATT Contracting Party on products from another, must automatically be extended to all other GATT Contracting Parties -the Most Favoured Nation principle. This ensures that Contracting Parties do not discriminate among products imported into their territories from other Contracting Parties on the basis of their national origin. The obligation applies to rules, regulations, duties and charges connected with importation and exportation.

As discussed above, the control measures in Article 2 may lead to restrictions being imposed on imports from other GATT Contracting Parties which are or are not parties to the Protocol. Such restrictions would, prima facie, be contrary to Article I of the GATT, if they are not applied against imports from all other GATT Contracting Parties who are or are not also members of the Protocol.

The Protocol's ban on imports from non-Parties under Article

4 would also appear to be inconsistent with Article I of the GATT since no parallel ban is imposed on imports from countries which are Parties to the Protocol. In order to be consistent with GATT, therefore, they must meet the requirements for the exceptions under Article XX.

The Montreal Protocol does not prohibit the export of controlled substances to signatories. Furthermore, even after the phase-out of ozone-depleting substances under the provisions of the Protocol, non-Article 5 parties would be entitled to continue to export to Article 5 party states in order to satisfy the basic domestic needs of the latter. The export ban against non-parties is therefore contrary to Articles I and XI of the GATT. Again, export bans would only be allowed if they qualify as an exception under Article XX.

2. GATT Article III - The National Treatment Principle

The GATT also requires its Contracting Parties to treat imported goods in the same way as "like" or competing domestic goods once they have met tariff and other import requirements - the National Treatment Principle.[105] This requirement applies to internal taxes and other charges, laws, regulations and requirements affecting, *inter alia*, the internal sale of products. The purpose of this rule is to ensure that taxes and regulations are not imposed so as to afford protection to the domestic industries of the importing state. The rule, however, does allow Contracting Parties to impose the same internal regulations applying to domestic products upon imported products at their point of importation.[106]

In addition, although the Protocol imposes an obligation on Parties to reduce, and finally phase out, the production and use of controlled substances, there will be periods before final phase

out when controlled substances will still be produced and used within their territories. The restrictions on imports which discriminate between "like" domestic and imported products from non-parties would therefore be contrary to Article III.

There are no clear guidelines to determine when domestic and imported products are "like".[107] Previously the determination was made on an ad hoc, case-by-case basis, and included consideration of factors such as the products end-use, consumer tastes or the products nature or quality.[108] As pointed out by one commentator "[p]ast GATT practice indicated that differences in production methods do not make the final products "unlike" if their end uses and physical properties remain "like" from the viewpoint of consumers' tastes and habits"[109].

However, a recent GATT panel allowed a distinction to be made between high alcohol and low alcohol beer.[110] On this basis, it could be argued importing states should be allowed to distinguish between otherwise identical imported products containing ozone-depleting substances and domestic or other imported products which do not contain such substances or which contain substances with lower ozone-depleting potential such as HCFCs. However, there would still be difficulties with discriminating against products *produced with, but not containing* ozone-depleting substances on the basis that similar domestic products and products from other signatories to the Protocol are produced using ozone-friendly technology.

Articles I and III do not state that discriminations based on production process methods are violative of GATT. Neither do the interpretative notes to GATT stipulate that products should be defined separately from their production process methods. However, past GATT practice suggests that differing production methods do not make the final products "unlike" if their end

uses and physical product properties remain "like" from the view point of consumer habits and tastes.

The purpose of Article III is to ensure that regulations restricting imports are not imposed so as to afford protection to domestic producers. It prohibits discriminatory taxes and regulations when they amount to conditions more onerous on imports than on domestic products. If they do have this effect they are only allowed if they qualify as a justifiable discrimination under one of the exceptions in Article XX. Therefore, where a country does not allow its domestic producers to use ozone-depleting substances in or for the manufacture of certain products, particularly because such substances are harmful, it should be permitted to ban imports of otherwise "like" products which do, without being required to further justify the restrictions under Article XX of the GATT.[111]

3. GATT Article XI - Prohibition on Quantitative Restrictions

Article XI of the GATT prohibits quantitative restrictions such as quotas, bans and licensing schemes on imported or exported products. The article contains several narrow exceptions, such as the application of standards to internationally-sold commodities and agricultural products. Even where exceptions are allowed, the quantitative restrictions should apply to imports and exports of like products to and from all GATT Contracting Parties.

4. General Exceptions to GATT Obligations - Article XX

Article XX of the GATT establishes limited exceptions to Contracting Parties' obligations under the agreement for

measures based on national policy considerations. Article XX simply affords exceptions to GATT obligations and does not constitute a positive obligation. A Contracting Party seeking to invoke Article XX to justify a departure from GATT's general obligations bears the burden of proving that the measures imposed "are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade".

Article XX(b) and XX(g) allow derogations from GATT obligations for what could be broadly termed environmental protection objectives. Article XX(b) provides an exception for measures "necessary to protect human, animal or plant life or health"; and Article XX(g) for measures "relating to the conservation of exhaustible natural resources, if such measures are made effective in conjunction with restrictions on domestic production or consumption".

The compatibility between the Protocol's trade provisions and the GATT was considered during the negotiations leading up to the adoption of the Protocol. The Sub-Group on Free Trade Issues established by the Ad Hoc Working Group of Legal and Technical Experts provisionally concluded that provided it was clearly demonstrated that the measures were not arbitrary or unjustifiable, any discrimination in the treatment between parties and non-parties would be permissible under the exceptions provided for in Article XX(b) and, possibly Article XX(g) of the GATT.[112]

A European legal expert on the GATT subsequently confirmed this finding and advised that the restrictions on trade with non-Parties were justified under Article XX(b) of the GATT as "necessary for the protection of human, animal or plant life

or health".[113] He stressed, however, that "the judgment as to whether a proposed action to implement the trade restrictions satisfied Article XX lay with GATT Contracting Parties normally in the context of a complaint by one GATT Party against another".[114]

Subsequently, the Open-Ended Working Group of the Parties to the Montreal Protocol discussed problems relating to the implementation of Article 4, especially with regard to GATT rules. Their conclusions supported the opinion of the GATT expert, but they did add that the possible restrictions on products produced with, but not containing, controlled substances might be hard to justify under the GATT if it proved difficult to determine which substances were actually produced with controlled substances.[115]

There was not much debate on or opposition to the inclusion and appropriateness of the trade measures during the Protocol's negotiations. Decisions on more substantive provisions, such as the chemicals that were to be controlled under the agreement, the control measures and the treatment of developing countries, were those that gave rise to tensions. The trade measures were really considered additions necessary to assist in the effective implementation of these more fundamental provisions.[116]

A GATT dispute panel report, dealing with Thai restrictions and taxes on imported cigarettes,[117] interpreted the term "necessary" in Article XX(b) to mean that: (1) no reasonably available alternative measure consistent with the GATT existed, and (2) the measure taken was the least trade restrictive of all available alternatives.

To justify the Protocol's trade restrictions as an exception permitted under Article XX(b) or (g) of the GATT, it will be necessary to show that the trade provisions in the Protocol meet

the general and specific conditions laid down in Article XX. The trade related measures:

i) should not constitute an arbitrary or unjustifiable discrimination among countries where the same conditions prevail[118]

(ii) should not amount to a disguised restriction on international trade[119];

(iii) with regard to Article XX(b), should be necessary for achieving the objective of protecting life and health;

(iv) with regard to Article XX(g), must relate to the conservation of an exhaustible natural resource and must be made effective in conjunction with restrictions on domestic production and consumption.

a. Do the Protocol's trade provisions constitute unjustifiable and arbitrary discrimination among countries where the same conditions prevail?

Because Parties to the Protocol are obliged to take steps to reduce their consumption and production of ozone-depleting substances while non-Parties are under no such obligation, the same conditions do not exist between non-Parties and Parties to the Montreal Protocol. Therefore, the provisions of Article 4 of the Montreal Protocol do not amount to unjustifiable and arbitrary barriers to trade.[120] However, the fact that a country is not party to an international environmental agreement does not appear to be sufficient to meet this requirement.

It has been argued that trade provisions should not

discriminate against countries based solely on their membership or non-membership in a multilateral environmental agreement, but should differentiate between parties and non-parties to the extent necessary to achieve their environmental goals. The more relevant factor is whether there is an actual difference between the environmental protection commitments met by Parties and non-Parties.

In the case of the Montreal Protocol, a country's compliance with the obligations of the treaty is evidence of a difference in achieving environmental goals. Under Article 4.8, to ensure that non-Parties are not unnecessarily treated in a discriminatory fashion by the application of the trade measures, imports and exports to non-Parties who have complied with the control provisions of Article 2 are permitted. The Protocol is therefore not "purely restrictive", and non-Parties are not discriminated against merely because of their status as non-Parties.

b. Are the Protocol's trade measures disguised restrictions on trade?

The implementation of Article 4 of the Protocol by its Parties is in accordance with "transparent" treaty law and implemented by related domestic measures to achieve the agreement's objectives. On this basis, they do not constitute disguised restrictions on international trade.

c. Are the trade measures **necessary** for the protection of health and life against the adverse effects of ozone depletion?

Documentation on the establishment of the proposed International Trade Organization[121]suggests that disputes under Article XX(b) were to be resolved on the basis of scientific tests[122]. For the first four decades of GATT's history, enquiries into whether a particular trade measure was necessary for health protection reasons were based on science. However, a few years ago, in the Thai Cigarette case, the GATT dispute panel propounded a new test for determining the necessity of such measures.

Trade restrictions implemented in accordance with Article 4 of the Protocol would only be considered "necessary" in GATT terms, if they satisfy the requirements laid down in that case. First, there must exist no other reasonably available alternative measures consistent with the GATT and, secondly, the import and export bans must be the least trade restrictive of all available alternatives for achieving the life and health protection objectives of the treaty.

Scientific evidence has shown that not only is it necessary to have stringent reduction and phase-out schedules for ozone-depleting substances, but also that without broad participation in complying with the schedules, the decline of ozone concentrations in the stratosphere would worsen, with a consequential increase in the adverse effects of ozone depletion.

Various alternatives have been suggested for effectively reducing the global production and consumption of ozone-depleting substances, some of which are more consistent with the GATT than the current trade measures of the Protocol.[123] However, an important factor to consider when determining the "necessity" of the Protocol's trade provisions, is whether the alternatives would achieve the international support required for the effective implementation of the Montreal

Protocol's objectives.

An option favored by the GATT Secretariat is for the Protocol to have been structured in such a way that it reduces the consumption of ozone-depleting substances in participating countries by the target amount without the necessity for special restrictions on trade with non-parties.[124] It has been suggested that this could have been carried out by imposing taxes on the domestic consumption of CFCs or through a quota on domestic consumption implemented by a system of auctioned domestic sale licenses which permit the holder to buy from all potential suppliers regardless of whether they are party to the agreement or not. Production of CFCs in participating countries could then be regulated by quotas set at projected levels of consumption in these countries.[125]

In the light of the Protocol's objective of phasing out the use of ozone-depleting substances as rapidly as possible, this option presumes that a sufficient number of countries would participate in the agreement to enable global CFC emissions to be reduced to the extent necessary to prevent the further depletion and the restoration of the ozone layer. It has been suggested that moral persuasion, negotiation and the provision of international assistance and compensation could have been used to encourage participation.

The history of the Montreal Protocol shows clearly that these methods have, to a certain extent, been effective in increasing participation in the Protocol's regime. However, the reality was, and still is, that the effective implementation of the Protocol imposes significant economic costs on countries. Although the provision of financial and other assistance has been a major incentive in encouraging the participation of developing countries, the real threat of losing supplies of essential chemicals

was a major influencing factor in the decisions of some developing countries to ratify the agreement. The trade provisions of the Protocol make eventual non-compliance a viable economic proposition only for a country with a large internal or external non-party market for ozone-depleting substances.

A second alternative is for countries to impose taxes or regulated standards on product characteristics or production process methods of domestic products. The same standards and equivalent taxes could then be imposed on imported products from both party and non-party states, as long as these do not contravene Article III of the GATT. If the standards used are the least trade restrictive and their trade effects on imports proportional to the environmental benefits to be achieved, they would also be allowed under the Agreement on Technical Barriers to Trade.[126]

Price-based instruments, such as taxes, are considered to be more efficient and cost-effective than command and control regulations in achieving environmental goals, because they directly affect exporters of products by forcing them to internalize the negative environmental effects of their products.[127] This would bring about a justifiable increase in the price of pollution-intensive goods or activities and thus reduce the demand for such products and increase demand for more environment-friendly substitutes.

However, in view of the considerable number of CFC-containing products and the difficulties involved in detecting emissions of ozone-depleting substances, such a tax would be costly to implement.[128] Furthermore, taxes imposed on imported ozone-depleting substances, products which contain ozone-depleting substances or products produced with ozone-depleting

substances would not necessarily discourage the polluting behavior in exporting countries, and may therefore be ineffective as an incentive to encourage such countries to join an agreement that controls the consumption and production of these substances.

Therefore, for such taxes and charges to contribute effectively to achieving the Montreal Protocol's objectives, they must not simply be aimed at the use of end products, but on production processes that use and cause the emission of ozone-depleting substances into the atmosphere. Such charges, however, would be contrary to the GATT, according to the Panel ruling in the Tuna-Dolphin case, because it is related to the production process method rather than to the "product as such".

A third option would be for the Protocol to have included, in addition to its measures controlling the production and consumption of ozone-depleting substances, a requirement for the labelling of products containing ozone-depleting substances so as to accurately reflect their environmental impact and thereby inform consumers. It is doubtful whether labelling requirements would significantly change consumer habits and tastes in order to bring about an effective reduction demand for ozone-depleting substances and related products, and consequently a reduction in the global production of these products.

Although some of the above options might have been preferred over the Protocol's trade measures from a GATT perspective, there is no guarantee that they would have encouraged enough countries, both developed and developing, to participate in an international cooperative effort to effectively reduce global ozone-depleting substances consumption and production. Furthermore, negotiating governments were strongly influenced by the positions of their national industries,

and it is unrealistic to think that a group of countries would agree to participate in an agreement to gradually phase out ozone-depleting substances if outsiders were still allowed to share in the declining market.[129]

For non-producing countries who were dependent on imports of ozone-depleting substances and ozone-depleting substance-related products, the threat of the loss of supplies for essential applications was crucial in ensuring their involvement in the international arrangements to control the use of these substances.

The view that the Protocol recognizes the need to ensure that measures used are the least trade restrictive so as to satisfy the necessity requirement of Article XX(b), is supported by the fact that the treaty graduates trade measures in proportion to the dangerous nature of ozone-depleting substances and related products. For bulk ozone-depleting substances, a complete import ban is imposed. At the same time, for products containing ozone-depleting substances, a ban is only imposed on certain products that have been agreed upon by the Parties, and furthermore, only Parties who do not object to the list are under an obligation to impose such bans as against non-Parties.

The agreement provides for even less stringent requirements for products that are produced with but which do not contain ozone-depleting substances. The Parties are currently only required to consider the feasibility of banning such products, and it is only after such a ban has been determined feasible and an agreed list of products drawn up will Parties, who do not object to the list, be obliged to ban imports from non-Parties.

d. Do the Protocol's trade provisions relate to the conservation of an exhaustible natural resource and are they made

effective in conjunction with restrictions on domestic production and consumption?

The provisions of the Montreal Protocol aim at conserving the ozone layer by protecting it from further depletion and restoring it to its pre-industrial level. The issue to be determined in respect of the above question is whether the ozone layer can be described as "an exhaustible natural resource" within the meaning of Article XX(g) of the GATT. It has been stated that the drafting history of Article XX(g) makes it clear that the natural resources referred to are resources of economic value rather than resources that cannot be exploited economically in any shape or form.[130] This definition would exclude the ozone layer from the ambit of the provision.

However, the rationale underlying the need to conserve natural resources has changed over the years, and it is now recognized that natural resources should be preserved for their intrinsic value as part of the ecosystem, and not merely for their economic value. Furthermore, the dictionary definition of resource includes "a supply or source of aid or support"[131] In view of the scientific evidence that shows that the ozone layer is a source of protection for life on earth against the adverse effects of ultraviolet radiation, it clearly comes within this definition, and measures aimed at its conservation should therefore qualify under Article XX(g).

The GATT panel in the U.S.-Mexico Tuna-Dolphin case interpreted "relating to" to mean primarily aimed at conserving the natural resource in question.[132] The Protocol's measures for reducing the use of ozone-depleting substances are primarily aimed at conserving the ozone layer, however, based on the Panel's interpretation, it may be difficult to describe the trade

restrictions against non-parties as such.

However, Article XX(g) itself simply states that the measure must **relate to** the conservation initiative of the country imposing the trade measures and as the restrictions in the Protocol are considered necessary to encourage participation in the agreement to ensure that the level of global emission of ozone-depleting substances is effectively reduced in order to protect the ozone layer, it can be argued that this condition is fulfilled.

6. Technical Barriers to Trade Agreement

The Agreement on Technical Barriers to Trade (TBT) aims to ensure that technical regulations, standards and conformity assessment procedures do not create unnecessary obstacles to trade. In that context, however, it recognizes that each country should not be prevented from taking measures necessary to protect human, animal and plant life or health or the environment, and that each country has the right to set the level of protection that it deems appropriate in these areas.

The Agreement encourages countries to use international standards where these are available, but it does not require countries to harmonize their domestic regulations and standards upwards or downwards as a result of international standardization activities. [133]

The TBT requires that "relevant international standards" be used as the foundation for national standards and regulations, except in such cases where international standards would either be ineffective, or inappropriate, to achieve the stated "legitimate" objective of the standard.

Difficulties may arise, however, where individual Parties to the Montreal Protocol unilaterally impose stricter trade-impacting regulations than are required under the agreement.

Some countries have implemented reduction and phase-out strategies more stringent that those required under the provisions of the Protocol.[134] This could have the result of increasing import restrictions against ozone-depleting substances and related products from other Parties during the reduction period provided for by the Protocol.

Trade restrictions could also be imposed on chemicals not yet regulated under the Protocol, on the basis of scientific evidence acquired through a national research venture that indicates that the chemicals have an ozone-depleting potential. Although such measures may be consistent with the objectives of the treaty, they may be perceived by exporting states as a product of the unilateral decision of the importing state, and therefore not "necessary".

Such measures are not discussed in an international forum and are not subject to the control of an international authority. However, the question to be asked in determining if such measures can still be considered the product of international cooperation, is whether the environmental interest they are designed to protect was clearly identified by the Parties to the convention acting in common.

The Protocol states in its preamble that it is "[d]etermined to protect the ozone layer by taking precautionary measures to control equitably total global emissions of substances that deplete it, *with the ultimate objective of their elimination* on the basis of scientific knowledge, taking into account technical and economic considerations and bearing in mind the developmental needs of developing countries." It is therefore arguable that the elimination of ozone-depleting substances as quickly as possible is clearly an objective accepted by all the Parties to

the agreement, and stricter unilateral measures to achieve this are justified.

In keeping with the core objective of the GATT, the TBT Agreement requires parties to apply standards and regulations in a non-discriminatory manner, and to ensure that national regulations and standards are designed in such a manner so as to be no restrictive, or "least trade restrictive," than necessary to achieve stated objectives.

The TBT Agreement also requires countries to take account of the risk associated with non-fulfillment of regulations. In assessing various risks, the Agreement makes reference to available scientific and technical information, as a means of measuring if national regulations are legitimate, or, if they are used for protectionist purposes. An exporting country which challenges an importing country's national standards which do not conform to international standards bears , however, the burden of proof in showing that such standards are not legitimate

In order to help to clarify the questions of "legitimate" technical regulations related to products, regulations must be applied equally to domestic and imported products. In addition, risk associated with differing regulations must reflect basic principles of "scientific" information.

The TBT Agreement deals, as noted, with technical regulations and standards concerning product characteristics, and their related process and production methods, if the production process directly affects the characteristics of the final product. An example of a production method which directly affects the characteristics of the final product is the use of CFCs as a coolant in refrigerators. An example of a production process method which is not reflected in the character of the final product is the manufacture of metal products using ozone-depleting

chemicals as a degreasing agent.

Generally, the TBT is focused on the potential for national regulations and standards to create an obstacle to trade. While its provisions do not directly address what form of international standards would be acceptable, it contains a strong preference for multilateral agreement and national standards based on international standards.

A State could restrict or prohibit imports of products on the basis that they do not conform with its national technical regulations or standards. To ensure that national technical regulations, standards and conformity assessment procedures are not adopted or applied with a view to creating unnecessary obstacles to international trade, signatories to the Agreement on Technical Barriers and Trade (the Standards Code)[135] are obliged to used relevant international standards, where they exist, as the basis for national measures.[136] Derogations from this obligation are allowed where the relevant international standards are considered inappropriate for certain legitimate objectives which include "the protection of human health or safety, animal or plant life or health, or the environment".

However, non-international standards imposed for the protection of health and the environment are subject to the condition that they should "not be more trade restrictive than necessary to fulfil the objective, taking account of the risks non-fulfillment would create". In assessing the risks of non-fulfillment, relevant elements to be taken into consideration include available scientific and technical information and the intended uses of the products.

Where a Contracting Party adopts national regulations or standards for environmental protection objectives, which may have a significant impact on the trade of other Contracting

Parties, it will be required, upon the request of another party, to justify the measure in the light of the environmental objective it seeks to achieve. Such justification may be on the basis of the provisions of the GATT, which allow derogations from GATT's general obligations of non-discrimination and equal treatment, for example Article XX, or under the Code.

The Code generally offers the same exception as those under Article XX of the GATT, and thus incorporates some of the difficulties faced by environmental regulations seeking to come within the ambit of that section. However, because the Code specifically mentions the protection of the environment as a legitimate objective for applying technical standards and now covers standards and regulations relating to process and production methods, environmental regulations that might fall outside Article XX may come within the purview of the Code.

To effectively implement the provisions of the Protocol, and thus achieve its objective of reducing the use of ozone-depleting substances, some parties may apply national technical regulations and standards based on the ozone-depleting characteristics of products or their production process methods, and on the basis of these regulations, they may deny access to their domestic markets of imported goods which do not conform with these standards. In addition, by banning the import of products containing controlled substances and the potential for banning the import of substances produced with controlled substances, member states to the Protocol are effectively imposing technical standards on countries which are not party to the agreement.

7. Agreement on Subsidies and Countervailing Measures

One of the potential challenges to the trade-related provisions of the Montreal Protocol is that the technical and financial assistance provided to developing countries under the Multilateral Fund constitutes an actionable or impermissible subsidy under GATT. While several articles in GATT deal with the issue of subsidies, it is the Agreement on Subsidies and Countervailing Measures (Subsidies Agreement) concluded as part of the Uruguay Round which raises the most concerns about the Fund.

It is important to note that subsidies are not prohibited in most cases under GATT. Rather, where the use of subsidies can be shown by a Contracting Party to have caused or threatened to cause material injury to a domestic industry, such subsidies may be subject to countervailing measures. Therefore, even though financial assistance under the Multilateral Fund may be found to be a subsidy, it is highly unlikely that the industrialized countries granting the subsidy will challenge it or argue that it is damaging their domestic industries.

While the Subsidies Agreement does prohibit certain subsidies, the assistance provided under the Fund clearly does not fall within the definition of prohibited subsidies contained in Article 3.

Under the Subsidy Agreement, certain subsidies are prohibited[142] while others are classified as "non-actionable,"[143]that is, countervailing duties can not be imposed on products receiving such subsidies. Many subsidies which are neither prohibited nor non-actionable are subject to challenge by a Contracting Party on the basis that their domestic injury

has or will be materially injured by the import of the subsidized products.

While the financial assistance provided under the Multilateral Fund may fall within the definition of a "subsidy" set forth in Article 1 of the Agreement, it is not a "specific subsidy" as defined in Article 2. Therefore, the assistance provided under the Fund is "non-actionable" under Article 8 and not subject to challenge or the imposition of countervailing duties under other provisions of the Agreement.

Article 2 (b) of the Subsidies Agreement states:

> *"Where the granting authority, or the legislation pursuant to which the granting authority operates, establishes objective criteria or conditions governing the eligibility for, and the amount of, a subsidy, specificity shall not exist, provided that the eligibility is automatic and that such criteria and conditions are strictly adhered to. The criteria or conditions must be clearly spelled out in law, regulation, or other official document, so as to be capable of verification."*

The Parties to the Protocol have adopted clear and objective criteria for the approval and funding of projects under the Multilateral Fund.[144] These criteria for project approval are publicly available for all interested countries.

The Subsidies Agreement also identifies other non-actionable subsidies on which countervailing duties cannot be applied, including subsidies for adaptation of existing facilities to new environmental requirements imposed by law or regulations. Under Article 3 (c), payment of up to 20 per cent of the cost of adaptation of existing facilities to new environmental laws and

requirements, subject to certain conditions, constitute a non-actionable subsidy.

In order to meet the requirements of Article 3 (c) the facilities to be adapted must have been in existence for at least two years, the assistance must be of a one-time, non-recurring nature and must be available to all firms that are able to adopt the new equipment or production processes, it must be directly linked and proportionate to a firm's planned reduction of nuisances and pollution and must not cover any manufacturing cost savings investment, which must be fully borne by firms. The Multilateral Fund does not fall within the terms of this subsidy.

7. Protection of Intellectual Property Rights - The Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPs)

The Agreement on Trade-Related Aspects of Intellectual Property Rights is expected to encourage more research and innovation and better access to new technology, including environmental technology, for all countries. Article 27 of the TRIPs defines "Patentable Subject Matter", of which paragraphs 2 and 3 provide for exclusions from patentability, both covering areas that may be of importance in the context of environmental protection. Paragraph 2 provides for the possibility of excluding inventions from patentability if preventing their commercial exploitation is considered necessary to avoid serious prejudice to the environment. Paragraph 3 allows governments to exclude from patentability "plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes." However, Members must provide for the protection of plant varieties by patents or by an effective

sui generis system, or a combination thereof.

The Agreement on Trade Related Aspects of Intellectual Property Rights was negotiated as part of the Uruguay Round. The agreement appears to be biased towards stronger intellectual property protection. During negotiations on the London Amendment to the Montreal Protocol, developing country parties called for "preferential and non-commercial" transfer of new technologies on terms they could afford. However, the Protocol does not provide for this, nor does it deal with many of the traditional problems of technology transfer. Developing countries believe that a TRIPs Agreement which strengthens intellectual property protection would further hamper the transfer to them of environmentally-sound technologies and that the lack of such technologies may make it difficult for them to comply with their obligations under the Protocol. On the other hand, it is possible that increased protection could actually assist the development and transfer of such technologies. In general, evolving environmentally-friendly technologies are owned by private entities and unless the technologies are secure from piracy, the private parties investing in their development will be reluctant to supply these technologies to the developing world.

8. Dispute Resolution Mechanisms for Potential Conflicts Between GATT and Trade Measures in Multilateral Environmental Agreements

It has been suggested that, as between parties to the Protocol, the conflicts between the GATT and the environmental agreement can be resolved through the application of the rules governing the priority of treaties set out in the Vienna Convention on the Law of Treaties.[145] Article 30(3) of the Convention provides that as between states that are parties to two inconsistent

treaties, only the provisions of the earlier treaty that are compatible with those of the later treaty apply, unless one treaty expressly specifies otherwise. On this basis, it is argued that with regard to states that are both parties to the GATT and to the Protocol, the provisions of the Montreal Protocol which have the effect of restricting imports of controlled substances would prevail over any provisions of the GATT with which they may be incompatible.[146] However, because of the peculiar nature of the GATT, this suggested solution to resolving conflicts between the two agreements raises certain difficulties.

(a) Is the GATT a "treaty" to which the Vienna Convention on the Law of Treaties applies?

There has been some debate on whether the GATT can be considered to be a treaty under international law or whether it is merely a contract between states that are party to it. But the distinction appears irrelevant when one considers what constitutes a treaty under international law. A treaty is "a legally binding agreement deliberately created by, and between, two or more subjects of international law who are recognized as having treaty-making capacity, [and] once [it] enters into force.....creates rights and obligations [binding in international law] distinct from those arising under the municipal law of any party"[147]. The GATT does come within this definition, and furthermore, although the GATT has not definitively entered into force, it is applied by each Contracting Party by virtue of the 1947 Protocol of Provisional Application or similar subsequent protocols of accession.[148] Under the provisions of these protocols, the GATT is applied like a treaty by the Contracting Parties and the obligations of the GATT are therefore binding on the Parties in international law.

The Vienna Convention on treaties is not retroactive and, therefore, does not apply to treaties concluded before its own entry into force in January 1980. Because the GATT has never come into force in the "usual" way, it is difficult to state conclusively a date when it can be said the agreement was concluded. The most appropriate date would appear to be 1 January 1948, the date from which the GATT was first applied, albeit provisionally, by the eight original Contracting Parties. On the basis of this date, it would appear that the Vienna Convention does not technically apply to the GATT. However, the Convention, to a certain extent, codifies customary international law, and states that nothing shall preclude the operation of rules set forth in the Convention to treaties outside its scope if such rules exist "independently of the Convention, i.e. customary law.[149] Article 30(3) reflects the customary law rule that in the event of a conflict of obligations, the rights of the parties under two different treaties are usually determined by reference to the treaty later in time, and this rule will apply in resolving the apparent conflicts between the GATT and the Montreal Protocol.

(b) The implications of applying Article 30(3) or the customary law rule.

The rules laid down in Article 30 of the Vienna Convention on treaties and the customary law rule mentioned above, apply only to each individual party to a treaty from the date of adoption of the treaty by the party in question. Therefore, if a state adopts the GATT subsequent to ratifying the Montreal Protocol, the GATT's provisions will control the obligations of that state. This issue is further complicated by various GATT side agreements[150] which are not integrated into the GATT text. These agreements

are not adopted as amendments to the GATT[151] but are technically stand-alone treaties which bind only GATT Contracting Parties who accept them. Their relationship to the obligations of the GATT itself is unclear.[152] Therefore, when a state adopts a GATT side agreement after it has adopted the Montreal Protocol, the former will control its obligations with regard to incompatible provisions contained in the two agreements. This would result in different obligations for different states depending on when they adopted the Montreal Protocol and the GATT or its associated side agreements.

(c) Do the GATT and the Montreal Protocol deal with the same subject matter?

The rule in Article 30(3) and the related customary law rule primarily focus on conflicts and priority between treaties addressing the same subject matter. Although it would appear that the GATT and the Montreal Protocol, on the whole, deal with different subject matters, it could be argued that the conflicting provisions in the two agreements deal with the same issue - whether or not it is permissible to restrict trade in certain goods - and therefore the rules of international law relating to conflicts of treaties would still be applicable.

It is a recognized principle of international law that where a treaty codifies or develops customary international law[153], non-party states could be bound by the obligations expressed in the treaty. However, they are bound only because the obligations have become rooted in customary law.[154] In order for a treaty provision to give rise to a customary rule, it must be capable of general application and must be intended as a basis for future state practice, as well as being supported by the necessary *opinion juris*[155].[156] The Montreal Protocol has been ratified by

129 states to date, and some non-Party states comply with the control provisions set out in Article 2 and the reporting requirements in Article 7 of the Protocol[157], but it cannot be said that this establishes the obligations of the treaty as rules of customary international law. There are a variety of reasons why non-Parties may choose to comply with the Protocol's provisions, but it is unlikely that any of them believe that they are under an obligation in international law to do so. Furthermore, although it is now recognized, as a rule of customary law, that states are under a duty to protect the environment, it is unlikely that detailed rules found in environmental protection agreements dealing with specific aspects of environmental protection, have gained the same status.[158]

It has also been suggested that the Montreal Protocol, as an international environmental agreement that deals with the protection of the global commons falls, within the category of international agreements that have *erga omnes* effects. In other words it has been created for the benefit of the international community as a whole and its obligations are therefore binding, not only in respect of Parties, but also of non-Parties to the agreement.[159] However, before it can be established that any international treaty has created obligations (or rights) which are valid *erga omnes*, it must be shown that non-Parties to the agreement have consented or acquiesced to these obligations (or rights).

As mentioned above, some non-Parties to the Montreal Protocol have chosen to comply with Article 2 and Article 7 of the agreement, but it is unlikely that this fact will be sufficient to prove consent or acquiescence to its obligations. Furthermore, although the responsibility of states to protect the ozone layer could possibly be recognized as an obligation *erga omnes*, it is

unlikely that a treaty dealing with a specific environmental issue, and containing specific regulations for dealing with the issue, can be said to establish such obligations.

PART 3

Procedures for Settling Disputes Between Provisions of the Montreal Protocol and The GATT

To date, there have been no reported disputes either among the Parties to the Protocol or between Parties and non-Parties. There are probably two reasons for this. First, the Montreal Protocol has achieved the highest level of participation of any international environmental agreement, and most GATT Contracting Parties are also Parties to the Protocol. Secondly,

all decisions taken by the Parties to the Protocol relating to amendment or implementation of the Protocol have been reached by consensus.

However, in recent years there has been an increase in the number of disputes brought under GATT based on the use of trade-related environmental measures. Although none of the existing multilateral environmental agreements have been the subject matter of these disputes, the increasing use of trade restrictive measures in such agreements could lead to actions by GATT Contracting Parties on grounds of their incompatibility with GATT rules. There is a need for an appropriate dispute resolution mechanism to resolve these potential conflicts.

Agenda 21 identifies a number of specific objectives in relation to the settlement of trade-environment disputes. These include the clarification of the role of international organisations in dealing with trade and environment-related issues and the development of conciliation and dispute settlement procedures.[160] *Agenda 21* also calls upon states to broaden and make more effective the range of techniques available for the avoidance and settlement of disputes.[161]

This section outlines mechanisms that currently exist for resolving conflicts and disputes that exist between the trade provisions of the Montreal Protocol and the GATT. It specifically looks at available fora for the settlement of disputes that may arise as a result of conflicts between the two agreements and at how such disputes can be resolved in one forum when they may require expertise available in another.

B. CHOICE OF FORUM

The GATT Group on Environmental Measures and International Trade has stated in a report[162] that:

"In the case where both parties are members of GATT but only one is a member of [an] international environmental agreement, then it would be clear that the dispute settlement provisions of the GATT would apply to a conflict. However, if both are parties to the GATT and *to the environmental agreement then the situation could be more complicated. One of the problems to be faced would be the competence of GATT panels to interpret the terms of the General Agreement but not the terms of international environmental agreements."*

1. GATT as a forum for disputes between GATT members where one is a party to the Montreal Protocol.

Articles XXII and XXIII of the GATT set out the process for dealing with disputes related to the interpretation and implementation of the trade agreement. Article XXII allows parties involved in a dispute to consult informally without the need to invoke a formal GATT dispute settlement procedure. Article XXIII provides the formal procedure for dealing with disputes where one contracting party "[considers] that any benefit accruing to it under the Agreement is being nullified or impaired..... as a result of..... the application by another contracting party of any measure, whether or not it conflicts with the provisions of this Agreement".

In the first instance, the "injured" party may make written representations to the other party(ies) concerned, and the latter is then obliged to give sympathetic consideration to the representations made. Article XXIII paragraph 2 provides that "if no satisfactory adjustment is effected between the contracting parties within a reasonable time, the matter may be referred to the Contracting Parties as a whole, who will then establish a

panel to investigate the matter and make recommendations or give a ruling on the matter as appropriate.

The GATT's dispute settlement system is elaborated in the Draft Understanding on Rules and Procedures Governing the Settlement of Disputes ("Understanding"), negotiated during the Uruguay Round of trade talks. The system provided for under the terms of the Understanding covers disputes arising under almost all the instruments negotiated during the Uruguay Round, and comprises a range of dispute resolution methods, including conciliation and third-party mediation, arbitration and judicial settlement through hearings before a Dispute Settlement Board ("DSB")[163] and appeals to an Appellate Body. In spite of this range of available options, the GATT dispute settlement system has certain disadvantages that militate against its suitability as a forum to accommodate the different interests associated with international trade and environment conflicts.

For example, Section 23 of the Understanding makes the application of the GATT dispute settlement system compulsory in all cases where it is potentially applicable. This implies that GATT Contracting Parties are obliged to have disputes that arise out of the application of the Montreal Protocol's trade measures settled in the GATT forum.[164] Although arbitration is available as a method of dispute settlement, arbitral decisions are subject to review, revision or repeal if they cause nullification or impairment of benefits or interfere with the rights and obligations of Contracting Parties. This could undermine the authority and effectiveness of arbitral decisions.

Secondly, the Appellate Body to be established under the provisions of the Understanding, goes some way in offering GATT Contracting Parties a forum that is not influenced by state politics. It will function more like a court of law, hearing appeals

on points of law from decisions of the dispute settlement panels. The juridical nature of the Body could provide some consistency in 'laws' relating to the interpretation and application of the GATT. In addition, unlike the panels, its members will be non-governmental representatives. This will ensure that decisions of the Body are objective. However, the Appellate Body is not completely independent of the GATT system. Its decisions are subject to the approval of the Dispute Settlement Board and can be challenged if they add to or diminish the rights of the Contracting Parties.

Unlike most other international agreements, neither the GATT framework agreement nor the Understanding provide for the settlement of disputes through the International Court of Justice ("ICJ"). Although it is recognised that the proceedings before the ICJ can be time-consuming, the extent of the current controversy surrounding the use of trade-restrictive measures in multilateral environmental agreements makes it imperative to have an authoritative and independent judicial resolution to the conflicts between such measures and the rules of the GATT and, it is suggested, the ICJ would be the most appropriate forum.

2. Forum for settlement of disputes where parties are members of both the GATT and the Montreal Protocol.

Where a party to the Montreal Protocol complains about import restrictions imposed by another Protocol party against substances and related products controlled under the Protocol, it could be argued that the complaint is wholly a trade issue and not one concerning the implementation of the environmental agreement. The complaint should therefore, in cases where both parties are also members of the GATT, be resolved within the GATT dispute settlement forum rather than that provided for under the

provisions of the environmental agreement. On the other hand, it could be counter-argued that since the import restrictions were imposed in order to comply with the Protocol's obligations, the issue is one relating to the interpretation and implementation of the Protocol and should be dealt with under the dispute resolution mechanism of that agreement. This section will consider whether the Montreal Protocol provides an appropriate forum for the settlement of such disputes.

Disputes between parties to the Montreal Protocol can be settled either through the non-compliance procedure adopted by the parties at their fourth meeting[165] or under the procedure provided for in the Vienna Convention. The non-compliance procedure provides that any party may, through the Secretariat, submit "reservations regarding another party's *implementation of its obligations under the Protocol*" to an Implementation Committee reporting to the Conference of the Parties. This procedure applies without prejudice to the operation of the settlement of disputes procedure laid down in Article 11 of the Vienna Convention.

Since the Protocol does not contain provisions *obliging* parties to trade with one another, it will therefore be difficult to establish non-compliance based on the fact that a party is restricting imports of controlled substances and related products from another signatory. The non-compliance procedure would therefore be an inappropriate mechanism in such instances. However, it could be argued that, as with all other international agreements, parties to the Montreal Protocol are obliged under international law to ensure that their implementation of the treaty does not conflict with their obligations under other international agreements such as the GATT. This is particularly important when such a conflict could result in the abrogation of rights that

accrue to other contracting parties under the provisions of the GATT.[166]

Therefore, by restricting imports from other parties, particularly since the Protocol does not expressly provide for this (and therefore allows trade in controlled substances to be carried on between parties), a party to the Protocol who is also a party to the GATT may fail to meet its obligations under the GATT.[167] It is likely that the parties to the Protocol did not anticipate that the non-compliance procedure might be used to deal with the complicated issues which could arise when determining whether trade related provisions of the Protocol were consistent with GATT. If trade related disputes are to be dealt with in a forum provided for under the provisions of the environmental agreement, then the dispute resolution system of the Vienna Convention on the Protection of the Ozone Layer would appear to be more appropriate.

Article 11 of the Vienna Convention provides the mechanism for the settlement of disputes between parties to the Convention concerning its interpretation or application.[168] The provisions of the article also apply to the Montreal Protocol.[169] Like most environmental treaties, the Vienna Convention contains a number of provisions for dispute settlement. In the first instance, "the parties concerned shall seek solution by negotiation"[170]. However, if they "cannot reach agreement through negotiation, they may jointly seek the good offices of, or request mediation by, a third party"[171]

The Convention also provides for the submission of disputes to arbitration, in accordance with an arbitration procedure adopted by the First Meeting of the Conference of the Parties[172], and to the ICJ[173]. However, third-party adjudication procedures cannot be invoked unilaterally at the request of any one state,

but are dependent on "common agreement" by the parties to a dispute, unless a party has expressly waived this condition. This diminishes the potential of the ICJ and arbitral panels as fora for the settlement of disputes between parties to the Protocol.

Although there is the theoretical possibility that trade disputes related to the implementation of the Montreal Protocol could be dealt with under the provisions of the Vienna Convention, it is unlikely that this will happen in practice. The dispute settlement procedures of the Convention and the Protocol can only be invoked when the issues raised concern the interpretation or implementation of the agreements. In most trade-environment disputes, a state would be alleging that the application of trade measures, that may be justified under the Protocol, are in breach of the provisions of the GATT or impair benefits that accrue to it under the trade agreement. The matters to be determined are therefore concerned with the interpretation and implementation of the GATT, and one would therefore be required to look to the dispute resolution mechanism of the GATT even where the dispute is between two parties to the Montreal Protocol.

C. RESOLVING DISPUTES IN ONE FORUM WHICH REQUIRE "OUTSIDE EXPERTISE".

Following the report of the Panel on US-Mexico Tuna-Dolphin dispute, environmentalists have expressed concern about the lack of appropriate environmental input into environment-related issues in trade disputes. Based on an incorrect assumption that the US had not attempted to use other means to deal with the problem of the excessive incidental killing of dolphins, the Panel determined that the restrictions imposed by the USA on imports of Mexican tuna were not necessary for the protection of the dolphins. However, the US had unsuccessfully tried to resolve

this issue through bilateral negotiations with Mexico. Environmental groups were not granted the opportunity to present this information to the Panel during the proceedings.

Section 13.2 of the Understanding provides that:

> *"Panels may seek information from any relevant source and may consult experts to obtain their technical opinion on certain aspects of the matter. With respect to a factual issue concerning a scientific or other technical matter raised by a party to a dispute, a panel may request an advisory report in writing from an expert review group."*

It is hoped that future GATT panels will, in accordance with the above provision, seek expert advice in all matters that relate to the use of trade measures in effecting environmental objectives.

The knowledge and expertise of the Assessment Panels established by the parties to the Montreal Protocol would be invaluable in assisting GATT panels to resolve disputes based on conflicts between the Protocol's trade measures and GATT rules. The Protocol's Assessment Panels provide the relevant information needed to enable the parties to the Protocol to review the effectiveness of the agreement's provisions for controlling the use of ozone-depleting substances on an ongoing basis. The Scientific Assessment Panel's report on the adverse effect of the continuous consumption of CFCs, even at low levels, was a major factor in influencing the Parties to adopt measures, including trade restrictions, to encourage broad participation in the agreement. It is suggested that the Assessment Panels should be consulted and requested to provide information and advice on issues such as the relevance and necessity of the specific trade measures that a country may seek to impose for the

effective implementation of the Protocol's objectives.

The trade dispute panel convened under the GATT should defer to any conclusions of the expert reports with regard to the environmental aspects of the trade measures and apply these conclusions in passing on trade law issues in cases under consideration.[174]

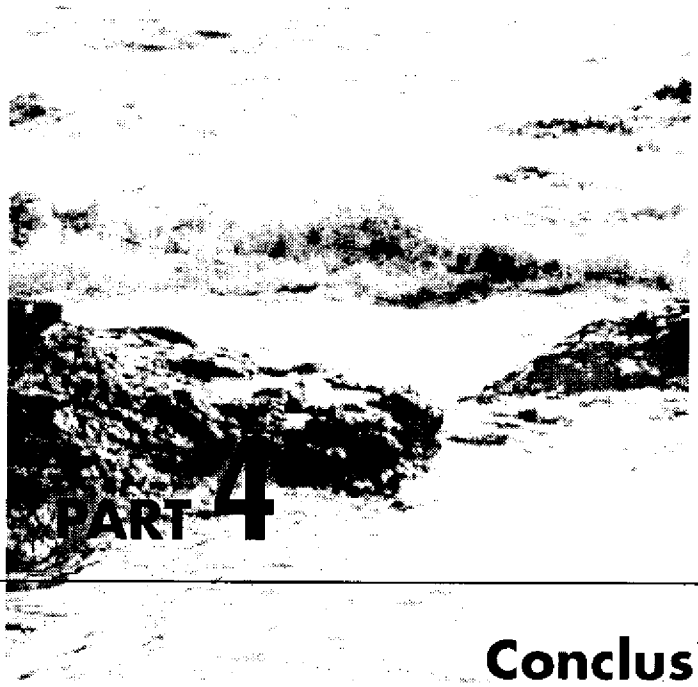
In addition to enabling GATT Panels to consult experts, Section 13.2 of the Understanding also allows GATT Panels to "seek information from **any relevant source**". Non-governmental organisations (NGOs) play an important role in influencing governments to adopt standards and regulations for environmental protection, and their perspective on environmental issues plays a part in influencing the formulation of multilateral environmental agreements.

Several NGOs were represented at the initial negotiations on the Montreal Protocol and at subsequent meetings of Working Groups and of the Parties to the Protocol. Their indepth research into, and understanding of, the background to and motives behind the provisions of multilateral environmental agreements and the extent of their participation in ensuring the effective implementation of these agreements would make them an invaluable source of information on the reasonableness and necessity of trade-related measures in environmental agreements.

With regard to disputes based on the trade provisions of the Montreal Protocol, it is hoped that NGOs with a proven interest in the ozone problem will be entitled to make submissions and representation directly to the Panels during proceedings instituted to resolve conflicts between GATT rules and the provisions of the Montreal Protocol.

Despite its shortcomings, the dispute settlement

procedures of GATT has been used more frequently for the settlement of trade related environmental disputes than any other international dispute settlement mechanism. However, it has been suggested that if a trade dispute arises as a result of standards or regulations adopted by a country to implement a multilateral environmental agreement, a panel of environmental experts should be formed, perhaps under the aegis of the environmental agreement's Secretariat, to provide advice on whether the measure is reasonable or necessary to achieve the agreement's environmental objectives. The GATT panel would then defer to the environmental panel's conclusion and would apply it in passing on the trade law issues involved in the case.[175]



PART 4

Conclusion

THE TRADE MEASURES OF THE MONTREAL PROTOCOL HAVE BEEN EFFECTIVE IN ACHIEVING THE AGREEMENT'S OBJECTIVES

There are now 136 Parties to the Montreal Protocol, representing some 99 per cent of the world's population. All major countries, including all major producers of ozone-depleting substances,

are now parties to the treaty. For a number of countries who are still not parties to the treaty, the reasons for non-participation appear to be political rather than economic in nature. Some countries have had constitutional problems in joining due to internal political turmoil making it difficult to focus on ratifying international environmental treaties. Other countries may not participate in international cooperative arrangements for ideological reasons.

The Protocol's trade measures have been a significant contributory factor in achieving such wide participation in its regime. However, it is recognized that the trade measures alone would probably not have achieved this result. For example, because of the size of their populations and domestic markets, China and India alone could have undermined the objectives of the treaty if they had remained outside its regime and expanded their CFC production and use. The Protocol's restrictions on international trade might have been ineffective because of their huge domestic markets.

Countries, such as China and India and other developing countries, needed to be assured that they would receive a greater economic advantage in becoming parties to the agreement than by not joining. These concerns were addressed by the creation of the Multilateral Fund.

The purpose of trade provisions of Article 4 of the Montreal Protocol is positive and not negative. Its intent is to encourage inclusion rather than promote exclusion of nations. It is very likely that the imposition of the trade ban on exports to non-Parties was a significant influencing factor in the increase in ratifications, especially in 1993.

The view of the Ozone Secretariat is that the combination of trade restrictions, the grace period for developing countries

and the provisions for financial and technical assistance, have each been essential in contributing to the success of the Vienna Convention and the Montreal Protocol.

Appendix

Examples of National Implementation of the Montreal Protocol.

Australia

Implementation of the Montreal Protocol is carried out under the Ozone Protection Act 1989, as amended by the Ozone Protection Amendment Act 1992.

The Act prohibits the manufacture, import or export of controlled substances without a licence. The control provisions of the Protocol are effected through a quota system and licence holders are prohibited from manufacturing, importing or exporting controlled substances in excesss of quotas allocated to them. The manufacture or import of products containing controlled substances or using controlled substances in their operation is also prohibited. A Schedule to the Act specifies products that fall into this category, these include dry cleaning machinery, which require the use of controlled substances in their operation; thermal insulation which contain or are made with a controlled substance; aerosol products containing or made with a controlled substance; and polyurethane foam products for packaging which contain or are made with a controlled substance. And imports of controlled substances, products containing substances and products manufactured using controlled substances are banned.

Manufacturers, importers and exporters of controlled substances and of transitional substances are required to submit quarterly reports and annual reports respectively to the Minister of State for the Environment.

Efforts taken to implement Article 4.5 and 4.6 of the Protocol include the establishment of environment sections in government departments with responsibility for trade, international

Efforts taken to implement Article 4.5 and 4.6 of the Protocol include the establishment of environment sections in Government Departments with responsibility for trade, international development aid and manufacturing industries. These sections have regular contact with the Department that as policy responsibility for Australia's compliance with the Convention and Protocol.

Regulations on Ozone-depleting Substances are issued under the Canadian Environmental Protection Act. Regulation No.1 of 1989 relates to CFCs and No.2 of 1990 to certain bromofluorocarbons. Controlled substances can only be manufactured, exported or imported in accordance with provisions under the Regulations. The manufacture and import of controlled substances is controlled under a quota system and exports can only take place under the terms of a permit issued by the Minister of Environment.

Imports of controlled substances from non-party states are banned under the provisions of both Regulations.

Denmark

EC Council Regulation 594/91 of 4 March 1991 (see below) applies to Denmark. Danish regulations implementing the Montreal Protocol and the Regulation consist of various instruments. They include Statutory Order No.53 of 24 January 1992, which prohibits the commercial use of

controlled substances and the commercial production, export and sale of products that contain or are manufactured with the aid of the same substances.

EC

The Montreal Protocol is implemented within the European Union by Council Regulation 3952/92 of 30 December 1992, which amends Regulation No 594/91 of 4 March 1991. Limits are placed on the amounts that each producer within the Union can place on the market and on the amount which can be imported into the Union from third states. Imports of controlled substances into the Union are subject to quantitative limits and to the grant of import licences. In some cases the Community has introduced tighter rules, or a faster phase-out schedule, or additional steps in the phase-out programme. Phase-out schedules apply uniformly to each producer within the Community. However, the Regulations provide for exchanges of production and supply quotas between producers, both within and between member states. Quota trading of this kind may also be permitted between producers in the Community and those in third countries. In all such cases, however, the effect must not be to increase production of the chemical concerned above the limits permitted within the Community. The Regulation also contains rules on imports and exports of ozone-depleting substances and imports of products containing or produced with them. Import bans on these will be phased in over the next few years where they originate from countries which are not parties to the Montreal Protocol. Producers, exporters and importers of controlled substances are obliged to submit annual reports to the Commission and the member state concerned to enable monitoring of compliance with the phase-out deadlines.

Finland

Finland has adopted both legislative and administrative measures implementing Article4 of the Protocol. Imports of controlled substances from countries not parties to the Montreal Protocol have been banned by a Decision of the Government. The Decision was given on the basis of the Air Pollution Control Act and entered into force on 1 January 1990.

Decree No. 891 of 24 September 1992 of the Council of State restricts the use of halons, and Finland has also banned the use of CFCs in the production of certain goods, including aerosols and certain plastic materials, and the import of similar products containing or made with CFCs. Finland has given notification of this decision according to GATT rules

Japan

Japan enacted the Law Concerning the Protection of the Ozone Layer through Regulation of Specified Substances and Other Measures in May 1988 (amended following the Second Meeting of the Parties to the Protocol in 1990). Based on this law, regulations on the production and importation of specified CFCs have been enforced by the Ministry of International Trade and Industry since July 1989.

Malaysia

Although Malaysia is an Article 5 party and, therefore, not under an obligation to implement the control provisions of the Montreal Protocol until 1999, its Ministry of Trade and Industry

is encouraging and promoting investments of relevant ozone- friendly technology. The Environmental Quality Act 1972 regulates and prohibits the use of controlled substances, and the regulation and control of imports and exports of controlled substances is carried out under the Customs Act.

Mexico

Mexico is also an Article 5 party, but already has in place a broad policy for implementing the Montreal Protocol. Measures to control the production and use of ozone depleting substances include the negotiation of 12 agreements with two producers of CFCs and halons and with the main users of these substances in the aerosol, refrigeration, electronic and fire extinguisher industries. The agreements make it possible to reduce and eventually eliminate the use of emissions of the controlled substances; to eliminate unnecessary emissions; to eliminate the consumption of non-essential CFCs; to keep users informed of the development of alternative technologies, substitute products, recycling techniques and other conservation measures; and to improve management practices for controlled substances in order to reduce emissions and introduce recovery and recycling systems.

Mexico has also set up a Technological Information Centre, with responsibility for coordinating the country's various activities to protect the ozone layer. It has also prepared a plan of action, the "Mexican Programme", to control the production, consumption and emissions of substances controlled by the Montreal Protocol.

With regard to the control of trade with States not party to the Protocol, the Secretariat for Urban Development and Environment is responsible for authorising imports and exports of controlled substances.

New Zealand

The Ozone Layer Protection Act 1990 implements the provisions of the Protocol. New Zealand does not manufacture controlled substances and the Act is therefore designed to phase-out the importation and, thereby, the use of controlled substances. Import of controlled substances from countries that are not party to the Protocol has been prohibited since 3 October 1990. The Act also prohibits the import of goods containing or designed to use or manufactured using controlled substances. These include aerosols, some plastic foams, dry cleaning machines and fire extinguishers.

The Act is administered by the Ministry of Commerce, the Ministry of Environment and the Customs Department.

Norway

In Norway, regulations concerning manufacture, import, export and use of CFCs and halons have been laid down by the Ministry of Environment. The Regulations prohibit the manufacture, import and export of CFCs and halons, as pure commodities or in mixtures, without a special permit from the State Pollution Authority, and in any case, imports and exports of controlled substance from or to non-parties are completely banned.

The Regulation further bans the use of CFCs and halons in the manufacture of aerosols, foam plastic products, cooling systems, air conditioning systems and heat pumps and for all

other purposes not expressly excluded under the Regulation.

Sweden

By Ordinance of 8 May 1991, Sweden banned the import and export of CFCs and halons in accordance with Article 4.1 and 4.2. The import of certain products has been banned in parallel to a national ban on production of those products, if they contain or are produced with CFCs or halons.

Swedish agencies for providing aid, credits, guarantees or insurance programmes have been informed about the Montreal Protocol and their responsibilities to refrain from co-operating with States not party to the Protocol, if that co-operation would facilitate the production or utilization of substances controlled by the Protocol.

Switzerland

The Ordinance of Environmentally Hazardous Substances, 9 June 1986 (RS 814.013), came into force January 1, 1990 (amended 14 August 1991). The Ordinance prohibits the manufacture of ozone-depleting substances. It also bans the import from non-party states of bulk controlled substances, products containing controlled substances and products containing or manufactured using controlled substances. However, the bans on the last two categories of products is limited to those listed in an appendix to the Protocol.

Venezuela

In Venezuela, another party operating under Article 5 of the Protocol, a permit is required from the Ministry of the Environment and Renewable Natural Resources for the importation of any substance controlled under the provisions of the Protocol. For the permit to be granted, it has to be verified that the exporting country is party to the Protocol and that the quantities to be imported are in line with the import figures of the year before, to ensure that the 0.3 kg per capita level of consumption is not exceeded.

Endnotes

[+] The Vienna Convention on Protection of the Ozone Layer was adopted in Vienna on 22 March 1985 and entered into force on 22 September 1988.

[1] The Montreal Protocol on Substances That Deplete the Ozone Layer was adopted in Montreal on 16 September 1987 and entered into force on 1 January 1989 as at least 11 instruments of ratification, acceptance, approval or accession representing two thirds of the estimated 1986 global consumption of the controlled substances had been deposited. The London Amendment to the Protocol was adopted on 29 June 1990 and entered in to force on 10 August 1992. The Copenhagen Amendment was adopted on 25 November 1992 and entered into force 14 June 1994.

[2] General Agreement on Tariffs and Trade, GATT, BISD Vol. IV, 55 UNTS, 187 (herinafter "GATT").

[3] Information in this chapter on the history of the Montreal Protocol has been substantially derived from: Benedick, R.E., *Ozone Diplomacy: New Directions in Safeguarding the Planet, Harvard University Press* (1991), and supplemented with information from Lea, C., After CFCs? : Options for Cleaning Electronics Assemblies, Electrochemical Publications Ltd (1992), Chapter 2.

[4] The Montreal Protocol on Substances that Deplete the Ozone Layer, *Handbook for the Montreal Protocol on Substances that Deplete the Ozone Layer*, Third Edition, Ozone Secretariat, Nairobi, 4 (1993).

[5] *Green Globe Yearbook*, Edited by H.O Bergesen and G. Parmann, Oxford University Press, 128 (1993).

[6] Information on effects of ozone depletion was obtained from *The Impact of Ozone-Layer Depletion*, UNEP/GEMS Environment Library No.7, UNEP (1992).

[7] Molina, M.J., and Rowland, F.S., 'Stratospheric Sink for Chlorofluormethanes: Chlorine Atom Catalyzed Destruction of Ozone', 249 *Nature* 810 (1974)

[8] UNEP, "Towards an Ozone Convention : A Look at Some Issues", Paper prepared by the Ozone Secretariat for submission to the UN Ad Hoc Working Group of Legal and Technical Experts for the Elaboration of a Global Framework Convention for the Protection of the Ozone Layer, Stockholm 20 - 29 January, 1982. UNEP/WG.60/5, 2.

[9] The troposphere is the part of the atmosphere that extends from the earth's surface to about 12 kilometres.

[10] National Academy of Sciences Report, "Halocarbons, Environmental Effects of Chlorofluoromethanes Release", Committee on Impacts of Stratospheric Change, Assembly of Mathematical and Physical Sciences, 1976, Washington D.C.

[11] The effects of imposing controls on the production and use of CFCs include: loss of employment and export

earnings for countries with a CFC industry; increased costs of CFC and related products to users, with accompanying economic losses; the fact that the physical characteristics of substitutes may make them less suitable as alternatives; and the costs of monitoring and enforcing controls.

[12] *Clean Air Act*, 42. U.S.C. section 7457(b)

[13] "Chlorofluorocarbons and their Effect on Stratosphere Ozone", Department of the Environment, Central Unit on Environmental Pollution, Pollution Paper No.5 (1976).

[14] Council Resolution of 30 May 1978 on Fluorocarbons in the Environment. *OJ C113*, Vol.21, pp.1-2, June 1978.

[15] Council Decisions (80/372/EEC) of 26 March 1980 Concerning Chlorofluorocarbons in the Environment, *OJ L90*, Vol. 23, p.45, 3 April, 1980.

[16] CFC 11 is used primarily as a blowing agent for foams, such as soft foams for mattresses and furniture, foams for food packaging and refrigerator insulation, and rigid foams used for building insulations. CFC-12 is used primarily as a coolant in refrigeration systems, including home refrigeration units and building air conditioning units. Both compounds are well-suited to be used as aerosol propellants. Cummings, A., and Matthew, A.B., "The Montreal Protocol Case" in *The Greening of World Trade*, United States Environmental Protection Agency, (1993), at p.140.

[17] Council Decision (82/795/EEC) of 15 November 1982 on the Consolidation of Precautionary Measures Concerning Chlorofluorocarbons in the Environment, *OJ L329*, Vol. 25, pp.29-30, 25 November 1982.

[18] However within the EC itself there were differences of opinion on what action was required to deal with the problem of ozone depletion. Belgium, Denmark, the Netherlands and Germany (the only major producer in this group of countries) were in favour of strong measures. UK, France and Italy, who were all large producers, were against stringent measures. Greece, Ireland, Luxembourg, Portugal and Spain did not take part in most of the initial negotiations for an international agreement.

[19] UNEP, "Report of the UNEP Meeting of Experts Designated by Governments, Intergovernmental and Non-governmental Organisations on the Ozone Layer", UNEP/WG/7/25/Rev.1, Annex 3, March 8, 1977.

[20] See "Toward an Ozone Convention", *supra* note 6 at p.2, para.4 to 6.

[21] See *ibid.* at p.2, paras.4-6 for a summary of the findings in the report.

[22] Vienna Convention on the Protection of the Ozone Layer, *Handbook, supra* note 2 at p.128.

[23] *Ibid.* Annex I, paragraph 4(c).

[24] *ibid*, Article 2.1

[25] *ibid*, Articles 2.2(a), Article 3 and Annexes I and II

[26] *Ibid*, Article 4

[27] *ibid*, Article 8

[28] *ENDS Report 141*, October 1986, at p.7.

[29] *ibid.*

[30] *ibid.*

[31] The UK had expected support from France and Italy for its stance that the production of CFCs should be frozen at 1987 levels, rather than reduced, pending a new scientific review of their threat to the atmosphere. However, France and Italy were by then open to the idea of production cuts. This would have left the UK completely isolated during international discussions on the Protocol.

[32] *ENDS Report 146*, March 1987.

[33] Argentina, Brazil, Egypt, Kenya and Venezuela represented the perspectives of the developing countries.

[34] Montreal Protocol, *supra* note 2, Article 2.

[35] *ibid*, Article 1 paras 5 and 6 and Article 3

[36] *ibid*, Article 3

[37] Vienna Convention, *supra* note 20, Articles 9 and 10.

[38] Montreal Protocol, *supra* note 2, Article 4.1.

[39] *Ibid*, Article 3(c).

[40] *Ibid.*, Article 3.4.

[41] *Ibid.*, Article 4.4.

[42] *Ibid.*, Article 4.8.

[43] *Ibid.*, Articles 4.5. and 4.6.

[44] *Ibid.*, Article 4.7.

[45] Davis, S.C., "The European Dimension", *Ozone Depletion*, Edited by Robin Russell Jones and T. Wigley., Chapter 10.

[46] Montreal Protocol, *supra* note 2, Article 5.1.

[47] *Ibid.*, Articles 2.1 to 2.4.

[48] "Basic domestic needs" does not allow production of products containing controlled substances to expand for the purpose of supplying other countries". Decision 1/12C of the First Meeting of the Parties to the Montreal Protocol, *Handbook, supra* note 2, at p.34.

[49] Montreal Protocol, *supra* note 2, Articles 5.2, 5.3, 9.1 and 10.

[50] *Ibid.*, Article 7.

[51] *Ibid.*, Article 8.

[52] Watson, R.T., Rowland, F.S. and Gille, J., NASA Ozone Trends Panel, *Press Release*, Washington D.C., 15 March 1988.

[53] *ibid*, at p.2.

[54] *ibid*, at p.19

[55] See *ENDS Report 156*, January 1988 at p.19.

[56] Council Regulation (No.3322/88) of 14 October 1988, *OJ L297*, Vol. , p.1, 31 October 1988.

[57] Resolution , *OJ C297*, Vol. 31, 9 November 1988

[58] *ENDS Report 161*, June 1988 at p.19.

[59] In spite of the Government's apparent lax approach to implementing the Protocol, it did call for the Protocol to be amended to provide for an 85% cut in CFCs. See *ENDS Report 161, supra* note 55 at pp.17-18 and *ENDS Report 163*, August 1988, pp.7 and 20.

[60] See *ENDS Report 168*, January 1989, at pp.5-6.

[61] The companies were Beecham, Boots, Carter Wallace, Colgate-Palmolive, Cussons, Elida Gibbs, Gillette, L'Oreal, and Reckitt & Coleman. See *ENDS*

Report 157, February 1988, at p.5.

[62] Earlier in the year two UK companies, Johnson Wax and Talbex had already decided to introduce "ozone-friendly" labels. However, at that time the industry as a whole was still resistant to the idea.

[63] See Vienna Convention, *supra* note 20, Article 9.2, and Montreal Protocol, *supra* note 2, Article 2.9.

[64] *Handbook*, *supra* note 2, at p.58.

[65] The Technological and Economics Assessment Panels were later merged into one panel.

[66] Montreal Protocol, *supra* at note 2, Article 2A, Annex 1.

[67] *Ibid.*, Article 2E.

[68] UNEP, "Transfer of Production Rights under Article 2 of the Montreal Protocol", UNEP/OzL.Pro.5/8, 16 September 1993.

[69] *ibid.*, p.2

[70] The non-compliance procedure is without prejudice to the operation of the settlement of disputes procedure laid down in Article 11 of the Vienna Convention.

[71] Because the amendment establishing the Fund could not enter into force until 1992, an interim financial mechanism was created to begin functioning on January 1, 1991. Upon the entry into force of the amendment on 10 August 1992, the Interim Multilateral Fund acquired a permanent status and became the Multilateral Fund. See *infra* Section 7.

[72] At their first meeting in 1989 the Parties agreed on a list of countries to be categorised as Article 5 parties (Decisions 1/12E of the First Meeting of the Parties to the Montreal Protocol, *Handbook*, *supra* note 2 at p.38). These countries are eligible for funding from the Fund data they provided in accordance with Article 7 of the Protocol showed that their per capita consumption was under 0.3 kilogrammes.

[73] Goldberg, D.M., "Provisions of the Montreal Protocol Affecting Trade", (Jan 16, 1992), CIEL-US Working Paper.

[74] *Scientific Assessment of Ozone Depletion: 1991*, WMO Global Ozone Research and Monitoring Project - Report No.25.

[75] *Environmental Effects of Ozone Depletion: 1991 Update*, UNEP, November 1991.

[76] *1993 Report of the Technology and Economic Assessment Panel*, UNEP, July 1993.

[77] Montreal Protocol, *supra* at note 2, Article 2H.

[78] Copenhagen Amendment to the Montreal Protocol, *supra* at note 2, Article 5.1.

[79] *Ibid.*, Article 2.5bis.

[80] For full details of decisions adopted at the first, second, third and fourth meetings of the Parties, see *Handbook*, *supra* note 2 at p.29.

[81] Examples of such products are products manufactured with CFC as a solvent, e.g. electronics and metal parts; tobacco products "puffed" with CFC; food flash-frozen by immersion in CFC; products manufactures with CFC where CFC was used as a mould

release agent, e.g. plastic products and drugs; products manufactured with CFC as a feedstock.

[82] Report of the Fifth Meeting of the Parties to the Montreal Protocol, UNEP/OzL.Pro.5/12, 19 November 1993 at p.8. See further 1993 Report of the Technology and Economic Assessment Panel, *supra* note 74.

[83] If the Parties decided to elaborate relevant products in an Annex, the earliest possible date for adopting the annex would be at their sixth meeting in 1994. The annex might enter into force by late 1995 to be implemented under Article 4.4 one year after. This would take place almost three years after the phase-out of halons and months after CFC phase-out stipulated under the Protocol.

[84] Virtually all nations which were major manufacturers of products made with, but not containing, CFCs and halons have already ratified the Protocol and the number of non-parties manufacturing such products was insignificant. Furthermore, these nations were already influenced by prohibitions on the sale of controlled substances from Party states and from restrictions on imports by Parties of products containing CFCs and halons.

[85] Decision V/17, Report of the Fifth Meeting of the Parties, *supra* note 80 at p.22.

[86] *1993 Report of the Technology and Economic Assessment Panel*, *supra* note 74, p.1-1.

[87] Decision V/14, Report of the Fifth Meeting, *supra* note 80, p.25.

[88] Decision V/25, *ibid.*

[89] UNEP, "Possible Effect of the Basel Convention on the Export of Used Ozone-Depleting Substances, including Halons Intended for Recycling", UNEP/OzL.Pro.5/9, 16 September, 1993.

[90] Article 2 of the Basel Convention defines "waste" as "substances or objects which are disposed of or are intended to be disposed of or are required to be disposed of by the provisions of national law".

[91] Article 11 of the Basel Convention provides that the provisions of the Convention will not apply to transboundary movements of hazardous wastes which take place pursuant to bilateral, multilateral or regional agreements, provides such agreements are compatible with the environmentally sound management of hazardous wastes.

[92] Report of the Fifth Meeting of the Parties, *supra* note 80 at p.25, Decision V/24.

[93] At the first meeting of the Parties, a decision was taken to classify a number of countries as developing countries who would operate under Article 5 (Decision I/12E, *Handbook*, *supra* note 2 at p.38). However, this was to act as a preliminary classification. Permanent classification for eligibility to Article 5 provisions and to funding under Article 10 is made after data submitted to the Secretariat by individual countries, as required under Article 7, shows that their level of consumption of controlled substances is under 0.3 kilogrammes for Annex A

substances and 0.2 killogrammes for Annex B substances. Some developing countries, even though listed in the decision of the Parties, will not qualify under this latter criteria, either because they have not submitted data as required or the data submitted shows that they have exceeded the consumption levels stated.

[94] Some developing country parties to the Protocol are currently not classified as Article 5 countries either because they have not complied with Article 7 reporting requirements or because their annual level of consumption of is over 0.3 killogrammes per capita for Annex A controlled substances and 0.2 killogrammes per capita for Annex B substances. The countries are Cyprus, Korea, Kuwait, Saudi Arabia, Singapore and the United Arab Emirates.

[95] Interview with Gilbert Bankobeza, Ozone Secretariat, Nairobi, November 1993.

[96] At present 8 Eastern European countries and former USSR countries, together consume more ozone-depleting substances than the combined developing countries eligible for funding from the Multilateral Fund.

[97] The pilot programme officially came to an end in 1993 and negotiations are still taking place on the restructuring of the GEF. Although no further funding will be available for new projects until the Facility is re-established, funding for on-going projects will still continue.

[98] *supra* note 74.

[99] *ibid.*, at p.3-10.

[101] See Blackhurst R. and Subramanian, A., "Promoting Multilateral Environmental Cooperation", in *The Greening of World Trade Issues*, edited by K. Anderson and R. Blackhurst, Harvester Wheatsheaf, 247, 256-259 (1992).

[102] At the Third meeting of the Parties in June 1991, a list of products containing Annex A substances was adopted. The list includes automobile and truck air conditioning units, domestic and commercial refrigeration units, air conditioning/heat equipment, aerosol products (except medical aerosols), portable fire extinguisher and insulation boards and panels.

[103] The Parties agreed to adopt the Indicative List of Categories of Incremental Costs at their Fourth Meeting in 1992. See Decision IV/18. This list is set forth in Annex XII of the Handbook for the Montreal Protocol on Substances That Deplete the Ozone Layer, August 1993 edition.

[104] Trade among nations is sometimes conducted in accordance with rules laid down in bilateral or multilateral trade agreements.

[105] General Agreement on Trade and Tariffs, GATT, BISD Vol.IV, 55 UNTS, 187, Article III.4.

[106] *ibid*, Note Ad. Article III, Interpretive note to Article III.

[107] For a discussion on the definition of "like products" see Thaggert, H.L., "Like Products: Production and Process Methods in the Trade and Environment Context". Paper prepared for Foundation

of International Environmental Law and Development (FIELD) seminar on Trade and Environment, April 1993, on file at FIELD, London.

[108] GATT, "Working Party Report on Border Tax Adjustments", L/3464 adopted 2nd December 1970, BISD 18S/97, 100.

[109] Petersmann, E-U., "International Trade Law and International Environmental Law: Prevention and Settlement of International Environmental Disputes in GATT". *Journal of World Trade*, 45, 63 (1993). [110] GATT ( ), United States: Measures Affecting Alcoholic and Malt Beverages, GATT Doc. DS23/R.

[111] Compare the judgement of the European Court of Justice in the *John Walker* case (Case 243/83, Judgment of March 4, 1986) in which the Court stated that in determining whether products were "similar" within the meaning of Article 95(1) of the 1987 EEC Treaty,it was necessary to consider, amongst other criteria, the method of manufacture.

[112] Lawrence, Peter M., "International Legal Regulation for Protection of the Ozone Layer: Some Problems of Implementation." *2 Journal of Environmental Law*, No.1, 17, 38; UNEP/WG 1672, 4 March 1981 at p.22.

[113] The GATT Secretariat was presented with an advance copy of the Montreal Protocol's trade provisions. No comments opposing the inclusion of the provisions in the agreement was received from the Secretariat. Although the GATT has been represented at some of the meeting of the Parties to the Protocol, there has not been a formal expression of a GATT perspective on the Protocol's trade measures during the negotiations. *Information obtained from interview with Gilbert Bankobeza, Ozone Secretariat, Nairobi, November 1993.* However, the Secretariat has stated that the availability of Article XX for treaties like the Montreal Protocol is untested and the Secretariat suggests that the discriminatory provisions in such treaties may not be necessary. GATT Report, *supra* note 24 at p.25

[114] Report of the Ad Hoc Working Group on the Work of its Third Sessions, UNEP/WG.172/2 at 18); Goldberg, D.M., "Provisions of the Montreal Protocol Affecting Trade" (Jan 16, 1992), CIEL-US Working Paper

[115] Report of the Fifth Meeting of the Open-Ended Working Group of the Parties to the Montreal Protocol, UNEP/OzL/Pro/WG.1/5/3, 5 December 1990 at p.4, paras.14 and 15.

[116] Interview with Peter Usher, UNEP Global Environmental Monitoring Systems Programme Activity Centre, Nairobi, October 1993.

[117] Thailand: Restrictions on Importation and Internal Taxes on Cigarettes, Report of the Panel adopted 7 November 1990, BISD (37th Supp) 200-223 (1990) (hereinafter "Thai cigarette case").

[118] GATT, Headnote to Article XX.

[119] *ibid.*

[120] See also Lang, W., "The Use of Trade Provisions in the Montreal Protocol",

Draft paper on file at Environmental Law and Institutions Programme Activity Centre, UNEP, Nairobi.

[121] During the initial negotiations on the GATT, it was intended that an International Trade Organization (ITO) would come into effect that would provide the institutional framework in which GATT would be one part. However, the ITO never came into being.

[122] See, for example, UN.Doc. E/Conf.2/C.3/SR.35, at pp.6-7.

[123] For a discussion on alternative options for dealing with the ozone depletion problem see Cummings, C.A. and Arnold, M.B., "The Montreal Protocol Case" in *The Greening of World Trade*, United States Environmental Protection Agency, 136, 147-8 (1993).

[124] GATT Report, at pp.11-12

[125] *ibid.* at p.12

[126] This last condition is required under the Agreement on Technical Barriers to Trade (1991), Article 2.

[127] See Porges, A., "Trade Rules and the Internalization of Costs". Paper prepared for FIELD Seminar of Trade and Environment, April 1993. On file with FIELD, London.

[128] Enders, A. and Pgers, A., "Successful Conventions and Conventional Success; Saving the Ozone Layer", Ed. K. Anderson and R. Blackhurst, at 134.

[129] Demaret, P., "T.R.E.Ms, Multilateralism, Unilateralism and the GATT", p.9. Paper prepared for FIELD seminar on Trade and the Environment, April 1993. Paper on file with FIELD, London.

[130] Lawrence, P.M., 'International Regulation for the Protection of the Ozone Layer: Some Problems of Implementation', 2 *Journal of Environmental Law*, No.1, 17, 39 (1990).

[131] *The Collins Concise Dictionary of the English Language*, Second Edition, (1990).

[132] Tuna-Dolphin case, *supra* note 13 at para.5.33.

[133] Report of the GATT Secretariat to the Second Meeting of the Commission on Sustainable Development, 16-31 May 1994.

[134] For example, the European Union intends to phase-out production and imports of CFC, methyl chloroform and carbon tetrachloride by January 1995 and to reduce methyl bromide by twenty-five per cent in 1996; Canada plans to phase-out the use of carbon tetrachloride by 1995; the US proposes to phase-out methyl bromide by the year 2000; and Denmark is planning on phasing out methyl bromide by 1998. Canada, the EC and the Netherlands propose to restrict the use of HCFCs and lower the initial cap and/or institute an accelerated phase-out of HCFCs.

[135] The Agreement was adopted during the Tokyo Round of GATT Multilateral Trade Negotiations in 1980 (Agreement on Technical Barriers to Trade, GATT, 26th Supplement BISD 8 (1980)) and re-negotiated during the Uruguay Round of talks (Agreement (1991) on Technical

Barriers to Trade, Draft Final Act).

[136] Agreement (1991) on Technical Barriers to Trade, *ibid.*, Article 2.4.

[142] Article 3, Agreement on Subsidies and Countervailing Measures.

[143] Article 8, Agreement on Subsidies and Countervailing Measures.

[144] See the Handbook for the Montreal Protocol on Substances that Deplete the Ozone Layer, Annex XII, Indicative List of Categories of Incremental Costs; Annex XIII, Criteria for Projects under the Multilateral Fund; and Annex XIV, Guidelines for Presentation of Projects and Criteria for Project Approval.

[145] Vienna Convention on the Law of Treaties, 8 ILM, 679 (1969). See Housman and Zaelke, *supra* note 10 at p.603; For further discussion see Cameron, J. and Robinson, J., "The Use of Trade Provisions in International Environmental Agreements and their Compatibility with the GATT", *2 Yearbook of International Environmental Law*, 3, 15-18 (1991).

[146] See Housman and Zaelke, *ibid.*, pp.602-603. For further discussion see Cameron and Robinson, *ibid.*, pp.15-18.

[147] Dixon M., *"Textbook on International Law"*, Blackstone Press Ltd (1990), p.202.

[148] For details of the reasons why the GATT never came into force see, Jackson J.H, *The World Trading System*, The MIT Press Massachusetts(1989) pp.34-37.

[149] See Vienna Convention on Treaties, Articles 3 and 4.

[150] For example, the Agreement on the Interpretation on the Interpretation and Application of Articles VI, XVI and XXIII of the GATT (the Subsidies Code), see *supra* note 20, and the Agreement on Technical Barriers to Trade (the Standards Code).

[151] The rules for amending the GATT are found in Article XXX of the Agreement. For problems associated with amending and applying the GATT see Jackson at pp.34-53.

[152] See *ibid.*, pp.51-52.

[153] See for example, the Vienna Convention on Diplomatic Relation and the Vienna Convention on the Law of Treaties.

[154] For example, the 1982 Law of the Sea Convention, which is not yet in force, crystallized the concept of the Exclusive Economic Zone (EEZ) to such an extent that it can now be regarded as part of customary international law.

[155] One of the elements required to establish that a rule has gained the status of customary international law is the belief by states that the practice of substance of the rule is binding upon them *as law*. This belief in the obligatory nature of the practice is called the *opinion juris*

[156] *North Sea Continental Shelf Cases*, 1969 *ICJ Reports*, 18.

[157] See Report of the Secretariat, The Reporting of Data by the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer, UNEP/OzL.Pro.5/5, 24 August 1993, at pp.3-6.

[158] Compare with the concept of the Exclusive Economic Zone found in the 1982 Law of the Sea Convention. Even though the concept has become part of customary international law, it is unlikely that the rules found in Part V of the Convention governing the workings of the EEC will do so. [159] Cameron and Robinson, *supra* note 31 at p.16-17. For a full discussion of the *erga omnes* doctrine see Schwarzenberger, ., *International Law and Order*, Stevens and Sons London (1971) at pp.458-462.

[160] Agenda 21, Chapter 2, para 2.22(b)

[161] *supra* at para 31.10

[162] GATT, Trade and Environment, News and Views from the General Agreement on Tariffs and Trade, TE002, 3 June 1993.

[163] Under Section 2.1 of the Understanding, the DSB is responsible for operating the dispute settlement procedure of the GATT. Its functions include establishing panels to deal with disputes and adopting reports of the panels and the Appellate Body.

[164] It would appear that this would apply to cases where both parties to the dispute are signatories to the GATT and the Montreal Protocol, and to cases where both parties are signatories to the GATT, but only the Party against whom the dispute is being brought is a signatory to the Montreal Protocol.

[165] See *Handbook on the Montreal Protocol on Substances that Deplete the Ozone Layer*, Third Edition, Ozone Secretariat, Nairobi (1993) at p.81.

[166] In its Advisory Opinion on Reservations to the Genocide Convention (1951) the ICJ held that it is a "generally recognised principle that a multilateral convention is the result of an agreement freely concluded upon its clauses and that consequently none of the contracting parties is entitled to frustrate or impair, by means of unilateral decisions or particular agreements, the purpose and raison d'etre of the convention. (*ICJ Reports*, 121 (1951)).

[167] This argument, if allowed, could be more powerfully used by non-parties to the Protocol who are also Parties to the GATT, in establishing that the explicit trade provisions of the Montreal Protocol abrogate their rights under the GATT.

[168] Vienna Convention for the Protection of the Ozone Layer, Handbook, Article 11.1.

[169] *ibid.*, Article 11.6 and Montreal Protocol, Handbook , Article 14.

[170] Vienna Convention, Article 11.1.

[171] *ibid.*, Article 11.2.

[172] *ibid.*, Article 11.3(a). For details of the arbitration procedure see Handbook, *supra* note 6 at p.138, footnote 13.

[173] *ibid.*, Article 11.3(b).

[174] In the US-Thailand cigarette case, Thailand asserted that its import ban on American cigarettes was necessary to protect the health of its citizens. The GATT Panel in that case consulted the World Health Organisation ("WHO") for advice on the effects of cigarette-smoking on human health. The WHO confirmed that cigarettes did have an adverse effect on

human health and advised that since Thai cigarettes were harsher than imported American cigarettes, there would be a tendency for people in Thailand to smoke less if the only cigarettes available on the Thai market were those produced in Thailand. In spite of this advice, the Panel decided in favour of the US, and found that the Thai import ban was contrary to the GATT and could not be justified under Article XX(b).

[175] Housman, R.F. and Zaelke, D.J., "Making Trade and Environmental Policies Mutually Reinforcing: Forging Competitive Sustainability", 23 *Environmental Law*, 545, 568-569 (1993).

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