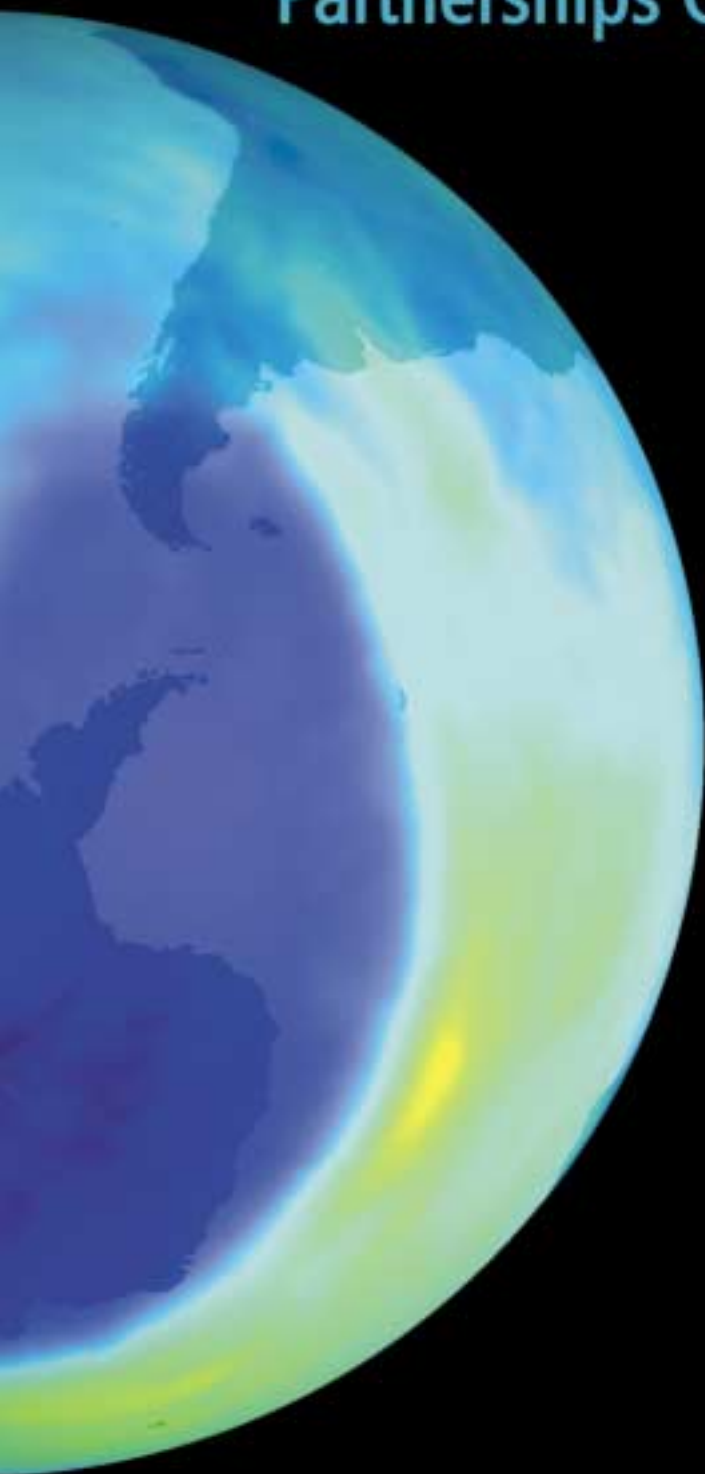


The Montreal Protocol: Partnerships Changing the World



THE WORLD BANK

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The Montreal Protocol: Partnerships Changing the World



As the new millennium dawned, the United Nations set out eight specific challenges for the international community. These Millennium Development Goals (MDGs) include eradicating poverty, providing universal primary education, promoting gender equality, reducing child mortality, improving maternal health, combating disease, establishing a partnership for development, and ensuring environmental sustainability.

The Montreal Protocol: Working Toward an MDG

In his recent report to the United Nations General Assembly on the progress made toward achieving the MDGs (*In Larger Freedom*, 21 March 2005), Kofi Annan highlighted the implementation of the Montreal Protocol as a noteworthy example of success:

"We fundamentally depend on natural systems and resources for our existence and development. Our efforts to defeat poverty and pursue sustainable development will be in vain if environmental degradation and natural resource depletion continue unabated. At the country level, national

strategies must include investments in improved environmental management and make the structural changes required for environmental sustainability ... We already have one encouraging example showing how global solutions can be found. Thanks to the Montreal Protocol on Substances that Deplete the Ozone Layer, the risk of harmful radiation appears to be receding — a clear demonstration of how global environmental problems can be managed when all countries make determined efforts to implement internationally agreed frameworks."



A Model of International Success

An impressive example of an international initiative that is successfully contributing to the environmental MDG is the Montreal Protocol on Substances that Deplete the Ozone Layer, an international chemical management treaty. Through the Protocol, countries agree to control the production and consumption of substances that damage the Earth's protective shield according to an agreed schedule. This effort to save the ozone layer provides a concrete example of how governments, international institutions, the private sector and ordinary people can be effective in addressing urgent challenges. Indeed, in his report to the General Assembly's Millennium Summit, UN Secretary-General Kofi Annan pointed to the Montreal Protocol as "perhaps the most successful environmental agreement to date."

The international consensus on the urgent necessity of preserving the ozone layer is reflected in the establishment of a Multilateral Fund (MLF) that provides support for projects to eliminate ozone-depleting substances (ODS). Between 1991 and 2005, the MLF received contributions of approximately US \$2 billion from 49 industrialized countries according to the United Nations scale of assessment. To date, expenditures of US \$ 1.74 billion have been approved to support approximately 5,000 projects in 139 countries. In addition, National Ozone Units (NOUs), have been established in 131 countries as government focal points for implementation of this multilateral environmental agreement. Projects supported by the MLF and completed through 2004 have already eliminated the consumption of 152,145 ODP tonnes (see box) and they have phased out production of more than 63,240 ODP tonnes.¹

The success of the Montreal Protocol and the MLF is attributable to a strong spirit of ongoing partnership that permeates the entire community responsible for negotiating, managing and implementing these agreements. Recognizing the gravity of the threat to the ozone layer, government and institutions are collaborating in a common global interest. The result is not just an example of an environmental treaty that is succeeding, it is also a model for how institutions and agencies can work together effectively to help countries address the other challenges identified in the Millennium Development Goals.

¹ Table 4, *Cumulative Completed Investment Projects, 2004 Consolidated Progress Report*
UNEP/OzL.Pro/ExCom/46/10, Annex II

Ozone Depleting Substances

In the early 1970s, Paul Crutzen, Sherwood Rowland and Mario Molina established a linkage between the breaking apart of chlorofluorocarbons (CFCs) in the atmosphere and the destruction of the ozone layer. Of all ozone-depleting substances, CFCs are the most extensively used by industry, finding applications in refrigeration, air conditioning, solvents, aerosols, foam blowing agents and sterilants. Hydrochlorofluorocarbons (HCFCs) are used to replace CFCs in refrigeration, air conditioning and foam blowing. Other ODS include carbon tetrachloride, a solvent used in electronics and chemical industries, methyl chloroform, also a solvent, halons and hydrobromofluorocarbons (HBFCs) used in fire fighting agents, and methyl bromide used in pesticides. The Montreal Protocol initially provided for the phasing out of CFCs, and subsequent amendments expanded its scope to include a total of 96 ozone-depleting chemicals.

Ozone Depleting Substances and Ozone Depleting Potential

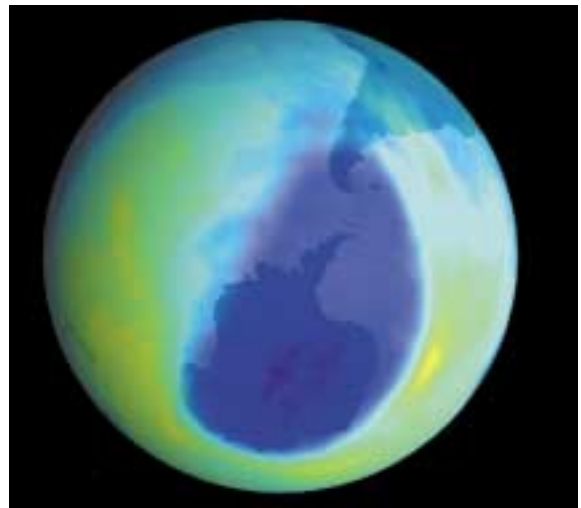
Because not all chemicals affect the ozone layer in the same way, scientists have established a common benchmark (Ozone Depleting Potential) against which each ozone-depleting substance can be measured. The benchmark used is CFC-11 and CFC-12, both of which have a reference level of 1. Other substances are assigned values in relation to how much more or less a comparable weight would deplete the ozone layer. For example, methyl chloroform has an ODP of only 0.1: that means 10 tonnes of it would have the same impact on the ozone layer as 1 tonne of CFC-11 or CFC-12. The use of ODP as a standard measure makes it possible to compare how different projects focused on different chemicals will affect the ozone layer.



The Challenge

In the late 1970s, the United Nations Environment Programme (UNEP) launched a World Plan of Action on the Ozone Layer. The Vienna Convention for the Protection of the Ozone Layer, adopted in 1985, urged greater international cooperation on ozone-related research and monitoring. These efforts were given added urgency when, in the same year, an ozone hole was first detected over the Antarctic.

The scientific evidence is unequivocal: the atmosphere's ozone layer is essential to life on this planet and it is damaged by the release of certain chemicals commonly used in industry. It protects both plants and animals from the worst effects of the sun's ultraviolet radiation. Without it there would be a dramatic rise in cancers and mutations that would eventually threaten all life on Earth. The discovery of a large and recurring ozone hole over the Antarctic demonstrated the need for urgent and effective international action.



The maximum thinning of the ozone layer in 2004 stood at 24.2 million square kilometres. This was down significantly from the largest recorded maximum of 29.2 million square kilometres in 2000. Image courtesy NASA Earth Observatory.

The Response

The international community has moved quickly to ward off the threat. In 1987, it adopted the Montreal Protocol, which has been internationally binding since 1989. It is clear, however, that not all nations of the world bear equal responsibility for ODS production and consumption. Most ODS originated from industrial processes in developed countries. Developing countries historically produced and consumed relatively small amounts of ODS. Thus the world faces a twofold challenge. On the one hand, it needs to reduce ODS production and consumption in developed countries; on the other, it needs to control any rise in ODS production and consumption in developing countries as they strive to catch up with the developed economies.

At the Second Meeting of the Parties to the Montreal Protocol (London, 1990) it was agreed to differentiate between developed countries and developing countries. The developed countries (Article 2 countries) had agreed to schedules for the gradual phasing out of ODS in their

own economies. Now they agreed to contribute to a fund that would pay for the costs of transferring new, ozone-friendly technologies to Article 5 (developing) countries. These were defined as countries where ODS consumption was less than 0.3 kg of ODS per capita per year and there are currently 145 countries falling into his category. In addition to money, developed countries also agreed to contribute technical assistance as well as share best practices and implementation expertise to ensure that funding assistance was applied as effectively as possible.

The MLF was formally established on January 1, 1992 with its Secretariat located in Montreal Canada. Its objective was to provide financial assistance to projects that would help Article 5 countries comply with their obligations under the Protocol to phase out ODS use. The Fund focuses only on costs essential to the elimination of the use and production of ODS and it funds only the additional or 'incremental' costs incurred in converting to non-ODS technologies.

The Montreal Protocol: A First

Several aspects of the Montreal Protocol represent precedent-setting international "firsts." It was the first legally binding international environment agreement to adopt the precautionary principle of setting out a strategy for immediate action even before all of the scientific ramifications are understood. It was the first international environmental agreement to impose trade sanctions to achieve its goals. It was the first international environmental agreement to differentiate between developed and developing countries in recognizing the origins of the problem and thus in distributing responsibility for solving it.

The Montreal Protocol and the MLF embody a simple but highly effective administrative structure. The Parties to the Protocol meet annually to receive scientific reports, set policy, adjust ODS phase-out targets, elect officers and committee members, and monitor the activities of the Fund. An Executive Committee consisting of seven representatives from developed (Article 2) countries and seven from developing (Article 5) countries oversees the operations of the MLF, sets policies, produces plans and budgets, allocates resources among Implementing Agencies and approves projects. A Fund Secretariat provides technical and administrative assistance as well as monitoring and evaluation.



The Implementing Agencies

At the time the MLF was established, the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP) and the World Bank (WB) were designated as its Implementing Agencies. The United Nations Industrial Development Organization (UNIDO) joined them in the following year.

The work that the MLF finances in recipient countries is managed by the four Implementing Agencies. Generally speaking, investment-oriented projects have been led by UNDP, UNIDO or WB. Non-investment projects, especially those focused on training, networking and information sharing have tended to be led by UNEP. UNEP Headquarters in Nairobi, Kenya houses the Ozone Secretariat and serves as the Fund Treasurer. In addition, there are numerous bilateral agreements between developed and developing countries that provide financial and technical support for projects involving ODS reduction.



United Nations Development Programme (UNDP)

UNDP provides capacity development, policy advice, technical assistance, training and technology transfer services to help countries meet Montreal Protocol obligations. Over 1,500 activities, funded by the MLF and the Global Environmental Facility (GEF) have been approved for UNDP

implementation in more than 100 countries. Close to 1,000 individual enterprises, many of them Small and Medium-sized Enterprises (SMEs), received UNDP assistance to address their phase-out objectives. Refrigeration and air-conditioning servicing sector plans and methyl bromide elimination projects managed by UNDP will benefit over 300,000 refrigeration technicians and crop growers globally. UNDP works together with 20 National Ozone Units to strengthen their institutional capacity for development and implementation of sustainable Montreal Protocol compliance policies. UNDP's emphasis on greater country ownership of the

Encouraging Sustainable Development Through Cross-Sectoral Partnerships

Working in partnership with national stakeholders - public, private and civil society - UNDP has adopted innovative approaches to help countries meet their Montreal Protocol phase out commitments while building on the project's outreach potential in rural areas to fight HIV/AIDS. UNDP's innovative approach promotes sustainable development through cross-sectoral collaboration. In Malawi, the project to phase out methyl bromide in agricultural production provides extensive training that will ultimately reach 400,000 growers. It will also encourage the local production of materials that support alternatives to methyl bromide, thus developing potential local and regional markets for small businesses. Building upon the project's outreach potential in rural areas, there is an effort to coordinate with UNDP's fight against HIV/AIDS, an extremely pressing social and economic issue in Malawi. The methyl bromide project's outreach activities offer an avenue - at the rural community level - for the dissemination of HIV/AIDS related messages developed by national stakeholders and funded by the UNDP HIV/AIDS programme. With the assistance of UNDP-Malawi, national project members are now working in concert with a group of farmers involved with the Malawi National AIDS Commission. Such efforts aim to develop awareness and response capacity and ultimately, to protect the workforce in the agricultural sector.



Partnership in Action: Teaming Up on Refrigerant Management Plan Implementation

Under the Multilateral Fund, each Implementing Agency is assigned a unique mandate and role that reflects its own mission, scope and institutional capacity. While there is some degree of healthy competition among them, they have also learned to complement one another when it brings advantages to the developing country being assisted. They also collaborate closely with bilateral agencies, where these are present. Refrigerant Management Plans (RMPs) offer a good example of how these capabilities can complement one another. In many low-volume CFC-consuming countries, refrigeration and air-conditioning account for 70-90% of ODS consumption. Thus, in preparing more than 100 Country Programmes, especially in the Least Developed Countries, UNEP uses RMPs as the key to complying with the obligations of the Montreal Protocol. Through Institutional Strengthening projects in the same countries, UNEP also helps to create mechanisms for monitoring and enforcing such obligations. UNDP, UNIDO and the World Bank implement the investment components of these plans, which include the purchase of recovery and recycling equipment and provision of technical assistance and training for refrigeration technicians. UNEP also plays a key role in information dissemination and awareness raising through its global clearinghouse of information on technologies and policies and through its regional networks of National Ozone Units. Such teaming between and among agencies has become a common practice in the implementation of RMPs. After a country has formalized its RMP and requested assistance from the lead Implementing Agency present, consultations are held with the Ozone Officer to identify any specific local issues and select suitable implementation partners, which the lead agency then engages through an informal inter-agency consultative process.

development process is further reinforced by its National Execution Modality, which promotes the sustainability of programme outcomes and assigns responsibility for programme implementation proactively to governments, thus expanding their sense of ownership and accountability. The same principle underlies the MLF's national and sectoral ODS phase-out plans, which UNDP implements in countries such as Argentina, Bangladesh, Brazil, Colombia, China, Cuba, Lebanon, India, Indonesia, Nigeria and Mexico. UNDP partners with UNEP in the implementation of refrigerant management plans in 38 low-volume consuming countries all over the world. Other important partners are bilateral donor countries including Canada, Italy, Japan and Sweden. Partnerships developed with Industry Associations worldwide have also been key to UNDP's work. UNDP is present on the ground in 166 countries. The UNDP Resident Representatives also normally serve as Resident Coordinator of development activities for the United Nations System as a whole. Through its country offices, UNDP facilitates activities such as procurement or customs clearance and provides coordination services to other agencies.

United Nations Environment Programme (UNEP)

The objective of the UNEP DTIE OzonAction Programme is to provide services that help developing countries and Countries with Economies in Transition (CEITs) comply with the Montreal Protocol.



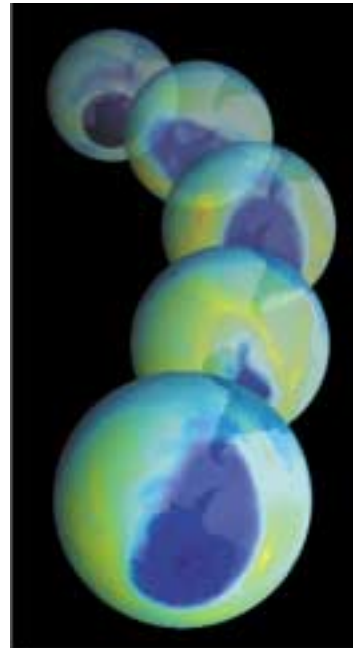
With UNEP's assistance, countries are able to make informed decisions about alternative technologies and ozone-friendly policies. Capacity-building services that empower the National Ozone Units (NOUs) include:

- An information clearing house that has produced more than 100 ozone-related publications, videos, databases, newsletters, and websites as well as sector-specific technical papers on alternatives to ozone-depleting technologies and guidelines for governments on implementation of ozone-related policies and regulations;



- Training that builds the capacity of policy-makers, officials and local industry to implement national ODS phase-out targets;
- Regional Networking of Ozone Officers that promotes the exchange of information, experience and know-how required to meet Montreal Protocol commitments, report data, set and enforce policies, adopt technologies and effectively manage NOUs;
- Regional and country-specific support activities that help low-volume consuming countries (LVCs), which lack major investment projects. This includes the preparation of more than 90 Country Programmes and 76 Institutional Strengthening projects to support the development and implementation of national ODS phase-out strategies, and development of refrigerant management plans (RMPs) that provide more than 60 countries with integrated, cost-effective strategies for ODS phase-out in this crucial sector.

In response to the changing needs and priorities of Article 5 countries during the compliance period, UNEP reoriented its programme strategy and delivery mechanisms by transforming its overall work strategy into the Compliance Assistance Programme (CAP). UNEP has moved from a project management approach to direct implementation, using a team of professionals with appropriate skills and expertise who help countries to support and sustain compliance. UNEP has regionalised delivery of projects and services by placing its regional offices at the forefront of project implementation and interaction with countries. The majority of the CAP team is based in UNEP's regional offices where they can work more closely with countries on an ongoing basis.



United Nations Industrial Development Organization (UNIDO)



In helping countries to implement Montreal Protocol targets, UNIDO provides services in the following areas:

- Policy, strategy and programme design;
- Development of supporting institutions;
- Support for enterprises during the compliance period; and
- Generation of databases on the impact of Montreal Protocol activities.

UNIDO has focused much of its work on six specific areas of expertise: refrigeration, plastic foams, halons, solvents, fumigants and aerosols. In each area, UNIDO has sought cost-effective ways of reducing the use of ozone-depleting substances. For example, more than 20 developing countries have benefited from UNIDO's expertise in the development and implementation of methyl bromide demonstration and phase-out projects. UNIDO has assisted approximately 1,250 industrial firms through its technical cooperation activities carried out in the context of the Montreal Protocol. In addition, generating and sustaining employment also occurs in non-manufacturing sectors. In implementing its refrigerant management plans, UNIDO trains workers to service and maintain refrigeration and air-conditioning equipment. In projects aimed at phasing out methyl bromide it has so far trained more than 150,000 farmers in the use of non-chemical and chemical alternatives and given them an opportunity to become more competitive in the international marketplace through the adoption of these new technologies. This development has been particularly visible in the tobacco, cut flower and horticulture sectors, where hundreds of thousands of farmers have acquired modern techniques and been able to meet the higher quality standards required by the international market.

The World Bank (WB)



THE WORLD BANK

After becoming an Implementing Agency for the Montreal Protocol, the World Bank streamlined its loan procedures and tailored them to support small grant projects. This allowed for the meshing of internal process requirements with those of the MLF's Executive Committee. It established an Ozone Operations Resource Group to provide ongoing technical guidance to client countries and Bank staff from internationally recognized experts in sector-specific working groups. Realizing the limitations of a project-by-project approach, the World Bank pioneered the development of performance-based national ODS phase-out strategies to achieve sustainable results. Client countries drive implementation and are encouraged to integrate various activities supported by the MLF into comprehensive ODS phase-out programs. The World Bank currently has approvals for national phase-out plans under way or in development in eight countries: Antigua and Barbuda, Bahamas, Ecuador, India, Malaysia, Philippines, Thailand, and Turkey. In addition to national phase-out strategies, the World Bank has adopted innovative financing approaches including grant auctions, revolving funds, and the use of vouchers for allocating equipment financed by the MLF. Over the past 14 years, the World Bank's Montreal Protocol program has partnered with 21 countries for investment projects and has facilitated the phase-out of more than 161,340 ODP tonnes. This amounts to about 75% of the total ODP phased out under the MLF using about 52% of the MLF resources available for investment projects.



Partnering: The Critical Success Factor

In addressing the challenge of ozone depletion – a problem that once seemed extraordinarily complex and nearly insurmountable - the international community has faced a number of formidable barriers. There were established and pervasive industrial processes that depended on a wide variety of ODS. Transforming these processes not only involved expense and dislocation, in many cases it also ran counter to developmental goals. The public was generally unaware of the dangers posed by ozone depletion. While governments quickly came to accept the need for concerted action, many lacked the internal mechanisms or capacity to implement effective remedial measures. And at the international level, there were weak or untested linkages among the various institutions that would have to be involved in any corrective action. In seeking to overcome these barriers, the Montreal Protocol was guided by a number of fundamental principles that were critical to its success.

Coordinating National Phase-Out Strategies

The variety of ODS-reducing activities and the large number of stakeholders involved could result in considerable confusion. Instead, the Implementing Agencies of the MLF have learned to collaborate closely with each other and to organize their clients and stakeholders into a coordinated effort. Indonesia offers an example of effective partnership among the agencies. At the end of 2004, the UNDP collaborated with the World Bank and UNIDO in putting forward a national phase-out strategy on behalf of the government of Indonesia. This plan was developed in conjunction with sector phase-out plans that the World Bank had developed for aerosol and UNIDO for solvents. The draft agreement incorporates all previously approved sector plans, including those for the foam and mobile air conditioning (MAC) sectors. UNDP and the WB have a Memorandum of Understanding that details cost-sharing arrangements for project staff at the country level. Joint missions were undertaken and staff from the WB and UNDP participated in each other's workshops and other meetings. In particular, the two agencies have worked together to assist the country on the import-export issue.

A Global Partnership

Beyond the MLF and its Implementing Agencies, there are many other institutions involved in the implementation of the Montreal Protocol. The Global Environment Facility (GEF) works in collaboration with the MLF to ensure that countries with economies in transition comply with the Protocol despite serious social and economic challenges. The UN's World Meteorological Organization (WMO) provides ongoing assessments of the state of the ozone layer. The World Customs Organization harmonized the commodity numbering system to improve the monitoring of trade in ODS. The World Health Organization (WHO) is a source of information on the adverse effects of methyl bromide while the Food and Agricultural Organization (FAO) provides information on alternatives to methyl bromide. The initiative has also involved numerous other non-governmental organizations, economic and social organizations, regional groupings, and development banks. National governments have worked to set up suitable policy and regulatory frameworks. Industry associations have educated their members and promoted the introduction of alternatives. And scientific and technical organizations have contributed monitoring, new standards, and alternative technologies. The Montreal Protocol has succeeded because it has created strong partnerships with institutions and organizations from around the globe.

Critical to overcoming these barriers successfully has been the extremely high level of partnership and collaboration that is being achieved among stakeholders. This cooperation started with the four Implementing Agencies: regardless of their original mandates or areas of specialization, each of the Agencies found itself taking on new tasks to advance ODS phase-out projects in developing countries. There is also a high level of collaboration between developed and developing countries in areas such as the transfer of technology and know-how. Such collaboration is evident in the numerous bilateral projects between developed and developing countries. Finally, there is a high level of collaboration among key stakeholders within countries. Typically, national governments assemble working groups that included industry, NGOs, and technical experts. Such approaches usually lead to realistic and effective measures for meeting ODS phase-out targets that allow for rapid progress.



Capacity Building Allows Governments to Implement:

- Permits for production, import or export of ODS;
- Bans or controls on use of ODS;
- Certification of technicians qualified to use or recycle ODS;
- Economic incentives, taxes and fees to encourage reductions in ODS;
- Procurement preferences for products free of ODS, especially by government agencies and the military;
- Mobilization of industry through workshops, networking, working groups, sectoral associations and company pledges;
- Campaigns to raise public awareness through advertising and other promotional campaigns;
- Labelling requirements empowering consumers to make appropriate choices;
- Support for R&D into and approval of alternatives to ODS;
- Promotion of new standards to limit use of ODS;
- Revisions to health and safety regulations; and,
- Creation of “banks” of controlled substances from which industry could draw its quotas.

Awareness Raising: Mobilizing political support for adopting the ambitious goals of the Montreal Protocol depended on raising the general awareness of the problem both within government and with the general public. Though all four Implementing Agencies participate in awareness initiatives, UNEP is specifically mandated to gather and disseminate information to a variety of stakeholders as well as to the public, which it does within the strategic framework of a *Global Communication Strategy for Compliance with the Montreal Protocol*. When implementation of the Protocol began, the agencies collaborated in holding five major workshops around the world to identify initiatives that would yield the largest and fastest emission reductions. They tried to encourage easy initial steps as a way of starting the process and building momentum. After the obvious large projects were completed, they turned their attention to the many diverse small companies that were still involved in ODS production or consumption. By that time general awareness and accumulated expertise made addressing the smaller players much easier.

Capacity Building: At an early stage in the implementation of the Montreal Protocol it was realized that capacity building and institutional strengthening are necessary if both partner governments and private enterprises are to be effective in ODS elimination. The MLF supports the provision of funding specifically to strengthen partner institutions as part of the process of implementing the Protocol. Typically, after three years of such activity, the recipient government reports on how it has used the funding and what impacts it has had. At that point, additional funding is provided to support the institutions thus created in phasing out ODS. Each of the Implementing Agencies uses this model in working with those countries where they have strong linkages. In addition, capacity building extends to the enterprise level through technical assistance aimed at introducing new processes, improving the quality of manufactured products or implementing best practices.



A Holistic Approach: Many UN programs focus on some specific activity such as training or technology transfer. From the outset, however, the Montreal Protocol has taken a holistic approach, recognizing that effective solutions to ODS require simultaneous and integrated progress across a number of areas including: institutional capacity building, an appropriate regulatory framework, technology transfer, and training, as well as traditional investment projects. Activities such as capacity building or development of a suitable regulatory framework create the enabling conditions in which the phasing out of controlled substances can be undertaken and monitored. Technology transfer cannot be effective without information sharing as well as training and certification of technical personnel. An integrated, holistic approach makes things happen quickly and cost-effectively.

Flexibility: The Montreal Protocol does not attempt to dictate what combination of initiatives and policies each country should follow. Instead, it sets ODS targets and timelines. Overall limits are set, but countries can choose what combination of measures will suit their specific circumstances. They can also choose what combination of ODS they produce or consume as long as they stay within those overall limits recognizing that the limits shrink progressively over time. Quantities that are recovered and recycled are not added to the total limit for a country, thus encouraging recovery and recycling instead of new production.

Partnerships to Control Illegal Trade

A key feature of the Montreal Protocol is its differentiation of phase-out schedules in developed and developing countries. This staggered schedule, however, opens up the possibility of illegal ODS trade. Article 4 of the Protocol provides for the control of trade in ODS and in products made using ODS, but enforcing it requires improvements in the ability of customs officials to recognize and deal with this trade. In the beginning countries such as Canada and the United States undertook initiatives to help customs officials around the world develop the skills and capabilities of their customs officials, training them to recognize and deal with both ODS and other environmentally damaging substances under what came to be known as "green customs." For its part, the MLF supports training of customs officers as part of Refrigeration Management Plans. To date, more than 90 national workshops have been conducted by the four Implementing Agencies. To be effective, however, training must be accompanied by vigilance, cooperation between different national and international agencies and sub-regional cooperation between neighbouring countries. Recognising the threat to investment projects posed by such illegal trade, UNEP's Compliance Assistance Programme is working with the other Implementing Agencies on a variety of solutions. For example, in 2004 UNEP and the World Bank cooperated on a "Workshop on Preventing Illegal Trade: Public Private Partnership," in Hua Hin, Thailand. For the first time, industry and government representatives from China, India, the European Union and Russia, and the NGOs Environmental Investigation Agency and Stockholm Environment Institute met to address illegal ODS trade. The participants - representing 85 percent of total global CFC production - committed themselves to greater cooperation and transparency in sharing information and intelligence to combat this problem. Building on the experience gained in implementing the Montreal Protocol, UNEP is now working with other organizations including the World Customs Organisation, Interpol and the Secretariats of various multilateral environmental agreements with trade provisions (CITES, Basel, Stockholm and Rotterdam Conventions) to implement the Green Customs Initiative (www.greencustoms.org). Through specific joint training material and workshops organised at the sub-regional and regional levels, this partnership increases the awareness of customs officers about various multilateral agreements and common issues of implementation and enforcement.

Partnering With Small Countries

Many global aid programs focus on larger countries. By contrast, the MLF also took care to make support available to smaller countries. After 1995, special measures were implemented for low-volume ODS-consuming countries to provide funding for awareness, training, institutional strengthening, and retrofitting. Such countries got separate allocations in which cost-effectiveness thresholds could be as high as 150% of those that were applied to larger countries. In addition, special projects were initiated that suited their specific needs. For example, a key concern of small countries was how to maintain their refrigeration equipment once CFCs were no longer available. The Fund supported the development of refrigerant management plans that included an analysis of current use and supply, suggestions for optimization of recovery and recycling, as well as options for conversion, retrofitting and replacement, all set within a suggested policy and regulatory framework. Most of the phase-out needs of the

majority of smaller countries relate to non-investment activities such as adequate training and assistance to develop regulations or legislative measures that can be monitored and enforced. UNDP and UNEP work with the largest number of small countries, with UNEP implementing the majority of awareness, training, and policy assistance activities-typically referred to as non-investment activities. The World Bank, which traditionally focused on projects in countries with high ODS consumption, has turned its attention and expertise to smaller countries such as the Bahamas, adapting its mechanisms to develop comprehensive national ODS phase-out strategies. The four Implementing Agencies as well as bilateral agencies all manage some non-investment activities in small countries but the bulk of the activities for UNDP, UNIDO and the World Bank in those small countries tend to focus on investment projects.



Figure 1. Regional Networks of National Ozone Units



A Firm Grounding in Science: The Montreal Protocol is more than just the Fund. The initiative also includes scientific and technical panels that provide monitoring, keeping up with evolving scientific knowledge. Parties to the Protocol receive reports from its Science, Environmental Effects, and Technology and Economics Assessment Panels. These bodies have been established to consider the latest state of ozone sciences and technology so that the Parties' decisions can be properly informed. This is in keeping with the original mandate of the Protocol, which was always to keep abreast of scientific knowledge as well as economic issues pertaining to ODS. At its core, the Montreal Protocol remains a science-based initiative in which monitoring and assessments are used to frame policy. However, the science is complex and reports are typically bulky and hard to follow. In response, an important role for the Implementing Agencies is to transform complex science into user-friendly action-oriented language that can inform policy.

Regional Networking to Support National Ozone Units

With MLF support, National Ozone Units (NOUs) have been established in 131 countries to coordinate ODS phase-out strategies and serve as the focal point through which international ozone-protection assistance flows into their respective countries. UNEP and the Government of Sweden initiated the creation of Regional Networks of Ozone Officers to help build and reinforce the skills of the officers who manage these units to help them efficiently implement their national compliance strategies. Additionally, Regional Networks foster cooperation and mutual support between different NOUs. They provide a platform for Ozone Officers from Article 5 countries to exchange experiences, develop their skills and tap the expertise of their peers in both developing and developed countries. UNEP currently operates eight such Networks comprising 148 developing and 14 developed countries (see map). As a core institution of the MLF, the Networks embody the principle of partnership: all Implementing Agencies, many bilateral agencies, and the Multilateral Fund Secretariat and Ozone Secretariat regularly participate in Network meetings to facilitate their assistance and provide guidance to Article 5 countries. Especially innovative and effective are the informal compliance assistance discussions held at the margins of the regular meetings. They provide an opportunity for all agencies and the two Secretariats to meet with individual developing countries experiencing compliance difficulties for frank discussions of problems and identification of potential solutions. These Regional Networks have resulted in improved data reporting, policy-making, and refrigerant management plans. They have also led to a form of peer pressure in which ODS Officers are encouraged to accelerate implementation of Montreal Protocol targets.



Implementation

The MLF covers the incremental costs associated with ODS phase-out – only those additional costs that Article 5 countries would have to incur in adopting safer technologies. It also supports clearinghouse functions associated with the exchange and dissemination of information about ozone-related best practices and new technologies. Generally, that means the Fund will finance the preparation of country plans for ODS reduction, provision of technical assistance, institutional strengthening, project preparation, demonstrations, training, as well as other project costs agreed to by the Executive Committee.

The MLF seeks the most efficient replacement options given a country's national strategy. It favours projects offering the fastest phase-out schedules while encouraging technologies that are safe, commercially proven and satisfy emerging standards. Finally, wherever possible, it favours projects where existing infrastructure previously used for ODS is repurposed for other uses, thus avoiding capital abandonment.

Initially, the Fund supported individual projects. It realized, however, that this approach would take too long and shifted its focus toward country-based strategies in which governments assume responsibility for local coordination and implementation. This approach starts with the development of a country programme of ODS reduction approved by the host government. The programme sets out a strategy, specifies the policy and institutional framework needed to support implementation, and provides a detailed action plan that includes timetables, a budget, and a financing plan.

Innovative Financial Mechanisms

Typically, many international investment projects are financed through grants that are disbursed in tranches subject to meeting pre-set milestones. To get money into the field faster, the Fund eventually adopted umbrella grant agreements with recipient countries, allowing them to implement projects within the context of an agreed-upon strategic framework. The Fund also experimented with alternative financial mechanisms. Some countries such as China or Chile have instituted a competitive auction as a way of allocating national ODS allowances among competing enterprises. Alternatively, companies that produce ODS can submit proposals to close or phase-out part of their activities, drawing from monies provided to the country by the Multilateral Fund. The national agency overseeing the auction selects the companies offering the best combination of low cost and high phase-out impact. This approach has proven to be superior to proceeding project-by-project, partly because it shifts the administrative responsibility to the participating country and partly because its competitive elements ensure a more cost-effective use of funds. In arrangements made with the government of Turkey in 1994, the Fund has experimented with a revolving fund mechanism. The Fund provides a blanket grant to the Turkish government. The latter provides support to enterprises in the form of contingent financing. If the project is successful, the company repays the government, which uses the returned funds to finance other projects. Altogether, 11 organizations received grants and 8 received partial loans, leading to a total phase-out of some 1,600 ODP tonnes, according to an independent evaluation of WB programs. Enterprises were willing to participate in mixed financing (loans and grants) but this approach requires an ability to administer revolving funds and has not been duplicated elsewhere.

Sharing Expertise Between Governments

In some cases, national governments have been able to borrow experts from other countries within their region to assist in implementation of their Montreal Protocol commitments. Working through UNEP's Regional Networks, Ozone Officers explicitly recommended that the Implementing Agencies use experts from a region to work on the implementation of other projects in the same region. This recommendation has been jointly adopted by the Agencies and translated into reality. For example, the Ozone Officer of Bahrain was selected as the UNDP/UNEP consultant for

preparing a CFC phase-out plan for the refrigeration sector in Yemen. In another case, Zimbabwe's Ozone Officer was asked to help his counterpart in Zambia to accelerate the latter's institutional strengthening project. In yet another example, the Ozone Officer in Senegal helped Burundi develop its Refrigerant Management Plan. This sharing of experts between Agencies has resulted in strengthened capacity within the respective regions and increased the level of cooperation between neighbouring countries.



A Global Private-Sector Initiative

The effort to phase out ODS was not limited to governments. In fact, it would never have succeeded without the active participation of industry. Many private companies have made voluntary pledges to stop using ODS. After making the switch themselves, they advertised aggressively against ODS to persuade consumers to use alternatives. Equally important, numerous companies contributed to the effort through R&D that led to safe and cost-effective replacements for ODS. To name a few examples:

- France's Atochem introduced solvent recovery and containment services for customers to achieve emission reductions while developing technologies to eliminate certain ODS;
- Lufthansa developed ODS-free aircraft maintenance procedures and shared them with other air carriers;
- Asahi Glass of Japan developed and commercialized technically perfect substitutes for solvents based on CFC-113;
- Sainsbury's of the UK implemented more effective leak reduction and monitoring in refrigeration and cooling systems and accelerated the replacement of CFS with HCFCs;
- Venezuela's largest aerosol user, Spray Quimica, not only halted its own CFC use, but it also persuaded European cosmetic companies to stop the sale of aerosol-based products to developing countries;

The effort was not limited to individual companies: business and industry associations also played their part. For example:

- India's Refrigerant Gas Manufacturers Association allocated ODS quotas among its members to avoid time-consuming controversies and promoted the commercialization of alternatives;
- Through their national association, Mexico's aerosol product manufacturers invented more cost-effective open-air factories that allowed for the safe use of hydrocarbon propellants: the group gained its members' agreement to halt CFC use and joined the government's ODS-related advertising campaign.

Country-oriented approaches make it possible to reduce unnecessary duplication. For example, the costs of transferring technology are now paid only once per country with the Implementing Agencies coordinating efforts around this process to ensure that transfer costs apply to groups of projects not just to individual initiatives. This approach has been especially important in extending the work of the Protocol to smaller businesses.

Much of the work of the Montreal Protocol has been carried out in developing countries under the auspices of the Multilateral Fund. It should be stressed, however, that a large part of the success of the entire initiative has been due to the efforts of developed countries that assumed their share of the responsibility for phasing out ODS. Not only did these countries adhere to their own phase-out schedules, they also contributed financially to the Multilateral Fund as well as to numerous bilateral initiatives in developing countries. Their example has been critical in persuading developing countries to follow suit.

Partnerships With Small Business

Initially, initiatives around the Montreal Protocol focused on large economies and large industries where significant ODS reductions could be achieved relatively quickly. More than 215,385 ODP tonnes has been phased out in developing countries, but a comparable amount of ODS remains in use, primarily small and medium-sized firms operating in sectors such as refrigeration (CFCs) and agriculture (methyl bromide). These smaller enterprises also need to be made aware of the issue and brought into the process. In 1998, the Executive Committee of the Fund allocated US\$ 10 million to facilitate pilot conversions of small firms in the aerosol and foam sector in Article 5 countries that were still significant ODS consumers. Given the small scale of these projects, the cost-effectiveness thresholds applied to larger projects were relaxed. Yet that was only a first step. Many of these enterprises are widely dispersed across sectors and geographical regions. They represent an ongoing challenge that will demand commitment to effective action by individual countries for the foreseeable future.



Partnerships in Action

Reduction of Methyl Bromide in Lebanon

Complementarity and synergy in the activities of UNDP and UNIDO is reflected in their work on phasing out methyl bromide in Lebanon. UNDP projects in the tomato and horticulture sectors and the UNIDO project in the strawberry sector are focused on the same alternatives, namely solarization alone, solarization combined with a reduced dosage of soil fumigants and Integrated Pest Management (IPM). Cooperation is based on exchanges of information with the following aims:

- to harmonize the approach with farmers, in terms of methyl bromide alternatives accessibility and financial support by the project (provision of equipments and goods);
- to optimize alternative applications by means of exchanging each other's experience and data;
- to secure a better price for equipment and goods procurement: since the two agencies are buying similar equipment, they can readily cooperate to cross check prices.

The Chiller Sector

Owners and manufacturers drive the phase-out of CFCs in the chiller sector. This “bottom-up” approach was initiated in early 1994 when UNEP conducted regional workshops on the topic with the participation of the other Implementing Agencies. The World Bank assumed responsibility for preparing country studies while other players joined the process by focusing on the development of bilateral projects. As a result of this multi-pronged approach, a global policy evolved around how to address ODS in the chiller sector. Ultimately, collaboration among the Implementing Agencies and other stakeholders built on specific initiatives to develop a general policy for the entire sector.

Inter-agency MOU in India

In India, the WB and UNEP adopted a MOU to have UNEP provide technical support in several areas to the Project Management Unit of the Indian Ministry of Environment and Forests. The Unit is implementing the



A ceremony closing the halon production facility in India, attended by the Indian Minister Mr. Raja, the Chairman of the enterprise, and representatives of the Implementing Agencies.

national CFC production phase-out plan under the overall project plan approved by the Executive Committee of the Montreal Protocol with the WB as lead implementing agency.

Joint Missions to Deliver Coordinated Compliance Advice

Many countries need quick, targeted guidance in order to meet their compliance obligations under the Montreal Protocol. The Implementing Agencies regularly deliver coordinated advice to high-level officials via joint missions by senior representatives from two or more agencies. Governments are more responsive when two or more agencies deliver the same message during the same mission. This approach has proven effective in raising specific compliance issues and helped to mobilize high-level support for implementation. Countries also appreciate coordination between agencies to save time and simplify interactions. For example, in June 2003, the UNEP OzoneAction team in Bangkok facilitated a visit of all four Implementing Agencies to Pakistan to confer with high-level national stakeholders on strengthening the country's compliance with Montreal Protocol targets. After wide-ranging discussions, a joint letter recommending a variety of actions was presented by the four agencies to the Minister of the Environment. This action plan has helped Pakistan enact effective regulations and meet its compliance commitments.



South-South Cooperation to Support Compliance

When developing countries are in non-compliance with the control measures of the Montreal Protocol, the experience of neighbouring countries is particularly relevant since the socio-economic and environmental conditions are often quite similar. The Implementing Agencies understand the tremendous potential of the “learn from your neighbour” concept, and apply it through the MLF’s “South-South Assistance” facility administered by UNEP’s Compliance Assistance Programme. UNEP is given resources to help with unforeseen and urgent compliance problems that may arise. After consultations with the country in difficulty, the concerned agencies jointly identify a national expert (e.g. an Ozone Officer) in a nearby developing country who has the necessary expertise to assist with the specific issue. UNEP then provides the travel and arrangements for that expert to visit the country in difficulty. This kind of “south-south assistance” has proven to be effective in tackling tough compliance challenges. For example, at the 15th Meeting of the Parties, Albania was deemed not to be complying with limits on CFC consumption. UNEP, UNIDO and Macedonia’s Ozone Officer participated in a joint mission to Tirana in March 2004 to provide advice on how Albania could return to compliance as soon as possible. UNEP and UNIDO ensured that Albania’s Ozone Officer would receive ongoing support, guidance and mentoring from his peer in Macedonia, who had valuable experience in successfully phasing out about 90% of Macedonia’s ODS consumption over the previous five years. Through missions to each other’s country and ongoing formal and informal communication, Macedonia’s Ozone Officer has shared his own country’s experiences and helped his Albanian counterpart to implement a national phase-out plan. This “South-South Assistance” played a significant role in helping Albania return to compliance with CFC control measures by September 2004.

Government-Industry Cooperation in Malaysia

In carrying out its obligations under the Montreal Protocol, Malaysia’s first step was to establish a National Steering Committee chaired by the Department of the

Environment (DOE), and including other government ministries, industry representatives, and NGOs.

Industrial Working Groups were established to analyze ODS use in specific sectors. On the basis of their recommendations, the DOE required that all ODS importers and dealers provide regularly updated lists of their customers and quantities of ODS purchased. This was used to create a system of import permits as well as regulations and guidelines for several industrial sectors. The Working Groups also helped to launch public awareness activities. As a result of this interactive dialogue between government and industry, Malaysia was successful in identifying efficient approaches to ODS phase-out.

The Sector Approach in China

Initially, the Multilateral Fund provided support to individual projects. It became clear, however, that this approach was time-consuming. In 1999, a decision was made to encourage umbrella projects focused on entire industrial sectors in a country. Responsibility for implementation shifted to domestic institutions with the international Implementing Agencies providing consulting, monitoring and auditing. The largest such sectoral approach occurred in China, which received US\$ 62 million from the World Bank to reduce its consumption and production of halons between 1998 and 2007. China received additional funding of US\$ 11 million from UNIDO to phase out CFC-11 in the tobacco sector, and US\$ 52 million from the UNDP to phase-out consumption of the cleaning solvents CFC-113, carbon tetrachloride, and methyl chloroform. In addition, UNEP assisted China’s State Environmental Protection Agency with the implementation of the training program proposed by the Agency, since that initiative required UNEP’s specialized communication skills.



Table 1: Examples of Thematic Partnerships among Implementing Agencies

Partnership Theme	Agencies	Highlights
Awareness raising		
Launching of Montreal Protocol implementation	All	Five regional workshops involving more than 100 countries to launch Montreal Protocol implementation in 1991-1993
International Ozone Layer Protection days to create national awareness at a high level	All	Joint participation in major celebrations in China, the largest producer and consumer of ODS
Joint website on methyl bromide phase-out	UNEP/UNIDO	Indicates case studies on methyl bromide phase-out
OzonAction Newsletter	All	Only UN newsletter which gives authentic and original news of all Implementing Agencies, written by respective agencies
Policy Assistance		
Regional workshops of National Ozone Units	All	Consultations and dialogues with each national ozone unit through joint meetings to provide policy advice
Joint high-level missions to specific countries (e.g. Albania, Indonesia and Pakistan)	All	To provide high level policy advice on specific issues like licensing systems
Technical Assistance		
Regional servicing sector in India, China and in low-volume consuming countries	All	Training and best practices, recovery and recycling
Refrigeration management plans	UNEP/UNDP/UNIDO	Assistance to low-volume CFC-consuming countries through policy and customs training and retrofitting
Production sector in India	UNEP/WB	Technical assistance to track production phase-out and its synchronization with consumption sector
Technology Transfer		
Technology transfer workshops	All	Advice on technology assessment through technology source book followed by project development and investment projects



Measuring Success

The Montreal Protocol can point to a decade and a half of unprecedented success in terms of phase-out achieved globally, financial assistance provided under the Multilateral Fund and projects implemented in developing countries. For example, developed countries met their compliance targets and reduced their average annual consumption of CFCs from

939,000 ODP tonnes in the late 1990s to 2346 tonnes in 2003. Over the same period, consumption of CFCs in developing countries went from 164,000 ODP tonnes to 75,000 tonnes (See Table 2). Reductions in the consumption of other ODS was equally impressive.

Table 2. Reduction in ODS Consumption (in ODP tonnes)

	Baseline ¹	2003 ²
CFCs		
Developed ³	938,625	2,346
Developing ⁴	163,855	75,156
Halons		
Developed	172,720	-13
Developing	46,432	9,235
Carbon Tetrachloride		
Developed	253,037	262
Developing	55,831	35,993
Methyl Chloroform		
Developed	60,573	-29.8
Developing	1,864	1,360
HCFCs		
Developed	36,840	14,782
Developing	n.a.	1,585

¹average of annual consumption in 1997, 1998, 1999

² Because consumption is calculated as production + imports – exports - materials destroyed, some countries that are exporting or destroying more ODS than they are producing or importing will actually register negatives numbers.

³ 32 Article 2 countries

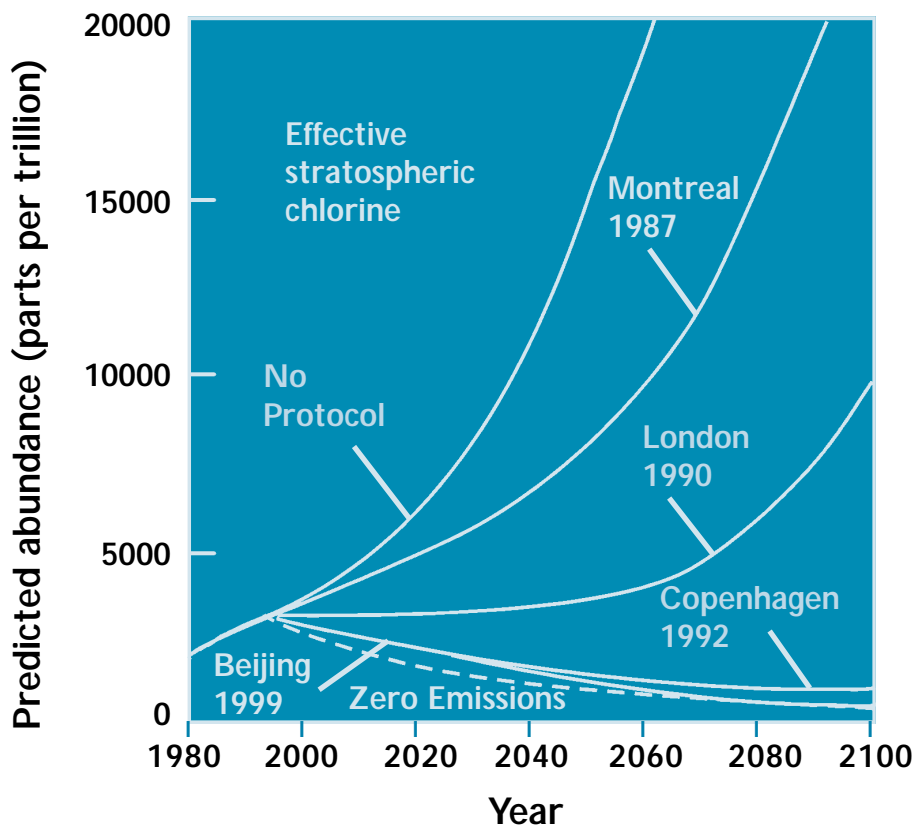
⁴ 145 Article 5 countries



Perhaps the single most important measure of success, however, is the impact of the Montreal Protocol on the health of the ozone layer. The following graph is expressed in terms of parts per billion of ozone depleting substances in the atmosphere. It shows the exponential increase that would have occurred without the Protocol and its Amendments (London, Copenhagen, Beijing), slightly less alarming increases under earlier phase-out strategies targeting only some substances, and the anticipated reductions in atmospheric ODS under the comprehensive targets ultimately agreed to by the international community. Scientific measurements of the stratosphere have confirmed these predictions.

Despite the impressive achievements of the Montreal Protocol to date, the world is still only at the beginning of the process. In fact, total elimination of all ODS still has several decades to go. CFCs, halons and carbon tetrachloride will not be completely phased out in developing countries until 2010. Methyl chloroform and methyl bromide will not disappear from developing countries until 2015. HCFCs will not be phased out of developed countries until 2030 and not from developing countries until 2040. Ultimately, it is expected that it will not be until the year 2050 that all of these phase-out initiatives succeed in reducing the amount of chlorine and bromine in the stratosphere from 5 parts per billion to 2 parts per billion, a level comparable to that in the 1980s when the first ozone hole was detected.

Figure 2. The Impact of the Montreal Protocol



Without the Montreal Protocol, the stratosphere would have quickly become saturated with ozone-depleting substances. This chart shows the predicted impact on the stratosphere of the targets agreed to by successive international agreements on the ozone layer.



Lessons Learned

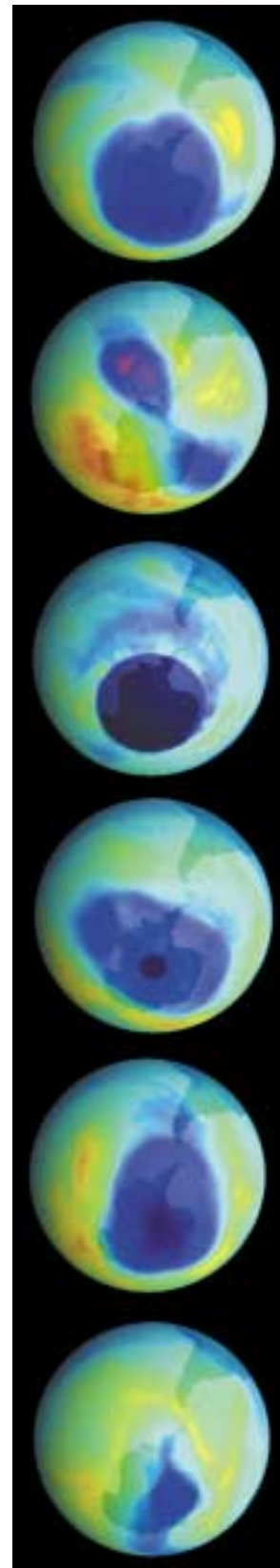
As international challenges grow in their scale and complexity, the international community needs models of success to guide future action. The success of the Montreal Protocol offers important lessons in this regard. In particular, three elements stand out as critical.

Partnerships: Today's challenges require the committed effort of numerous stakeholders willing to set aside their own narrow interests for the common good. That means forging linkages, developing effective channels of communication, getting the right people mobilized, and taking the time to hear all points of view and develop consensus positions. However, it also means focusing that consensus on concrete action.

Capacity building: No ambitious initiative can be successful unless those responsible for carrying it out have the right understanding, preparation and training for what they have to do. Ambitious initiatives also require prior implementation of appropriate policy legal or regulatory frameworks able to encourage and support effective and concrete action. That in turn means that organizations assisting implementation must have a local presence and close linkages with actors in recipient countries to help them develop the capacity for effective action.

Funding: Effective international action also demands secure and predictable funding. The Montreal Protocol has been a success because the Multilateral Fund was created and donors honoured their commitments. It has also succeeded because it was flexible in the way it used funding, moving from individual projects to national strategies, and experimenting with alternative funding mechanisms where appropriate.

The countries of the world can succeed in overcoming grave international problems if their efforts are based on partnerships, capacity building, flexible implementation mechanisms, and adequate funding. The example of the Montreal Protocol shows what can be achieved when nations agree to work together toward practical, clearly defined and achievable goals.



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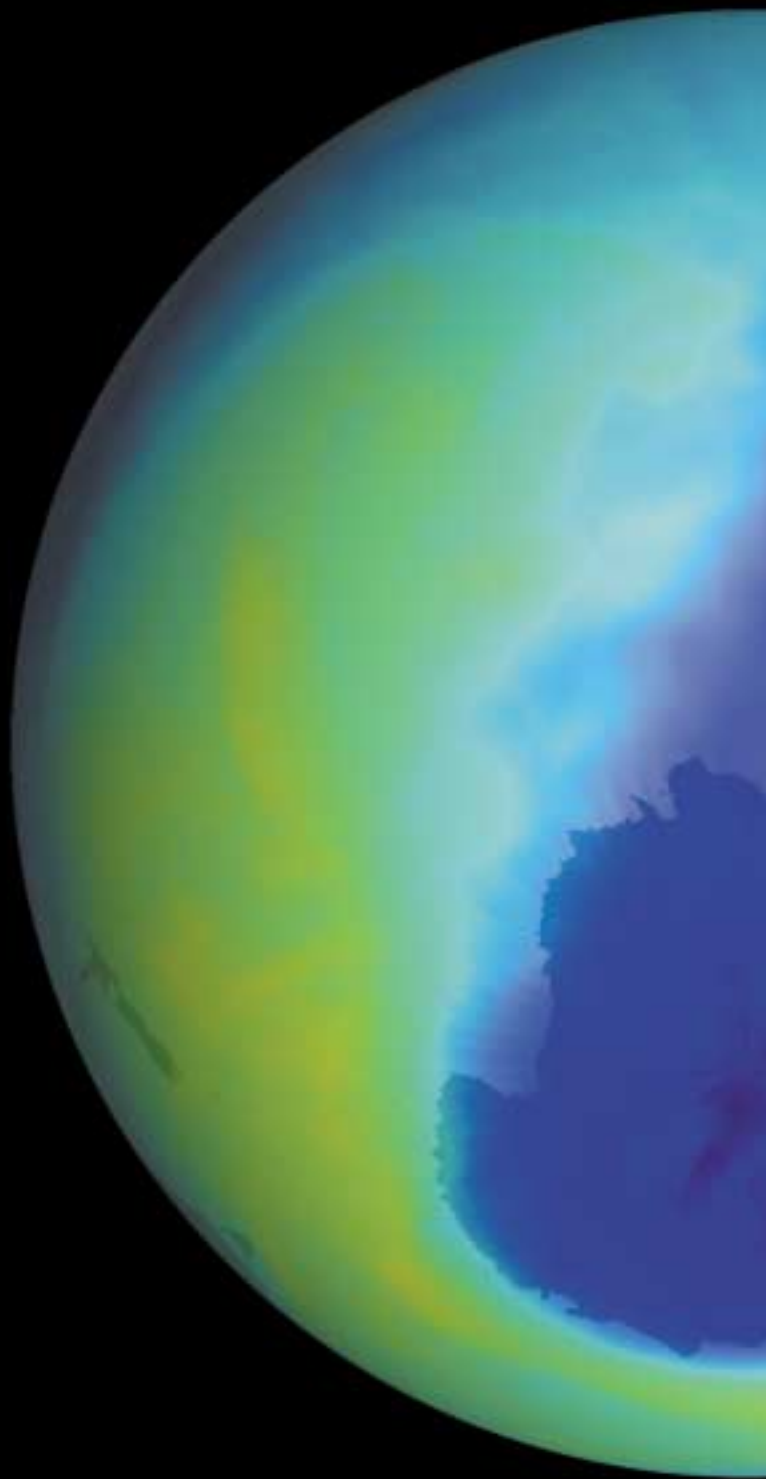


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