

**Chapter-4-International Agreement / Protocol /
Principles**

4.1-MONTREAL PROTOCOL 1987

Concerns that the Earth's stratospheric ozone layer could be at risk from CFCs and other anthropogenic substances were first raised in the early 1970s. At that time, scientists warned that the release of these substances into the atmosphere could deplete the ozone layer, hindering its ability to prevent harmful ultraviolet rays from reaching the Earth¹. In response to this growing concern, the United Nations Environment Programme (UNEP) convened a conference in March 1977 that adopted a World Plan of Action on the Ozone Layer and established a Coordinating Committee to guide future international action on ozone². The Vienna Convention called for cooperation on monitoring, research and data exchange, but did not impose obligations to reduce the use of ODS³.

MONTREAL PROTOCOL⁴:

In September 1987, efforts to negotiate binding obligations on OD led to the adoption of the Montreal Protocol on Substances that Deplete the Ozone Layer. Developing countries (Article 5 parties) were granted a grace period allowing them to increase their use of these ODS before taking on commitments. To date, the Protocol has 189 parties⁵.

LONDON AMENDMENT AND ADJUSTMENTS:

Delegates to MOP-2, which took place in London, UK, in 1990, tightened control schedules and agreed to add ten more CFCs to the list of ODS, as well as carbon tetrachloride (CTC) and methyl chloroform⁶. The Multilateral Fund meets the incremental costs incurred by Article 5 parties in implementing the Protocol's control measures and finances clearinghouse

¹ This would adversely affect ocean ecosystems, agricultural productivity and animal populations, and harm humans through higher rates of skin cancers, cataracts and weakened immune systems.

² <http://www.iisd.ca/vol19/enb1942e.html>

³ The Convention now has 190 parties.

⁴ See supra 2. MOP

⁵ Since 1987, several amendments and adjustments to the Protocol have been adopted, adding new obligations and additional ODS, and adjusting existing control schedules. Amendments require ratification by a defined number of parties before their entry into force, while adjustments enter into force automatically.

⁶ To date, 179 parties have ratified the London Amendment. In addition, MOP-2 established the Multilateral Fund for the Implementation of the Montreal Protocol (Multilateral Fund).

functions, including technical assistance, information, training, and the costs of the Fund Secretariat⁷.

COPENHAGEN AMENDMENT AND ADJUSTMENTS:

The Implementation Committee examines cases of possible non-compliance by parties, and makes recommendations to the MOP⁸ aimed at securing full compliance.

MONTREAL AMENDMENT AND ADJUSTMENTS⁹:

At MOP-9, held in Montreal, Canada, in 1997, delegates agreed to a new licensing system for the import and export of ODS, in addition to tightening existing control schedules.

BEIJING AMENDMENT AND ADJUSTMENTS:

At MOP-11, held in Beijing, China, in 1999, delegates agreed to controls on bromochloromethane and additional controls on HCFCs, and to reporting on methyl bromide for quarantine and pre-shipment applications¹⁰. MOPs 12-14: MOP-12, held in Ouagadougou, Burkina Faso, in 2000, adopted the Ouagadougou Declaration, which encouraged parties to take steps to prevent illegal production, consumption and trade in ODS, and harmonize customs codes¹¹.

MOP-15: Like its predecessors, MOP-15, in Nairobi, Kenya, in November 2003, resulted in decisions on a range of issues, including the implications of the entry into force of the Beijing Amendment. However, parties could not reach agreement on four items relating to methyl bromide, an ozone-depleting pesticide scheduled for a 2005 phase-out by non-Article 5 parties¹².

⁷ The Fund is replenished every three years, and has disbursed over US\$1.4 billion since its establishment.

⁸ Meeting of the Parties to the Protocol

⁹ <http://www.iisd.ca/vol19/enb1942e.html>

¹⁰ MOP-11 also agreed to replenish the Multilateral Fund with US\$477.7 million for the triennium 2000-2002. To date, 101 parties have ratified the Beijing Amendment.

¹¹ The following year in Colombo, Sri Lanka, delegates to MOP-13 adopted the Colombo Declaration, which encouraged parties to apply due care in using substances that may have ozone depletion potential (ODP), and to determine and use available, accessible and affordable alternatives and technologies that minimize environmental harm while protecting the ozone layer. At MOP-14, held in Rome, Italy, in 2002, delegates adopted 46 decisions, covering such matters as the Multilateral Fund's fixed-exchange-rate mechanism, compliance issues, and interaction with the World Trade Organization. MOP-14 also agreed to replenish the Multilateral Fund with US\$573 million for 2003-2005.

¹² Disagreements surfaced over exemptions allowing the use of methyl bromide beyond 2004 for "critical" uses where no technically or economically feasible alternatives are available. As a result of these disagreements, delegates took the unprecedented step of calling for an "extraordinary" MOP.

The introduction of a “double-cap” concept distinguishing between old and new production of methyl bromide was central to this compromise¹³. Under the amendments and adjustments to the Montreal Protocol, non-Article 5 parties were required to phase out production and consumption of: halons by 1994; CFCs, CTC, methyl chloroform and HBFCs by 1996; bromochloromethane by 2002; methyl bromide by 2005; and consumption of HCFCs by 2030 (with interim targets prior to those dates)¹⁴.

INTERSESSIONAL HIGHLIGHTS¹⁵ OPEN-ENDED WORKING GROUP:

The twenty-fifth meeting of the Montreal Protocol’s Open-ended Working Group (OEWG) took place in Montreal, Canada, from 27-30 June 2005. Delegates agreed on 11 draft decisions to be forwarded to MOP-17¹⁶. Parties agreed to supplementary levels of CUEs for 2006 that had been left unresolved at MOP-16¹⁷. The MBTOC’s final recommendations on 2006 and 2007 CUNs are included in the TEAP/MBTOC Final Report on CUNs released in October 2005 for consideration at MOP-17¹⁸. The Implementation Committee discussed most of the outstanding cases of non-compliance, making 47 recommendations both on general issues of non-compliance and with regard to specific cases¹⁹. The Protocol called for the Parties to phase down the use of CFCs, halons and other man-made halocarbons²⁰.

¹³ Parties agreed to a cap for new production of 30% of parties’ 1991 baseline levels, meaning that where the capped amount was insufficient for approved critical uses in 2005, parties were required to use existing stockpiles. Parties also achieved compromises on conditions for approving and reporting on CUEs, and the working procedures of the Methyl Bromide Technical Options Committee (MBTOC).

¹⁴ However, there are exemptions to these phase-outs to allow for certain uses lacking feasible alternatives or in particular circumstances. Production of HCFCs was to be stabilized by 2004.

¹⁵ <http://www.iisd.ca/vol19/enb1942e.html>

¹⁶ The draft decisions address: monitoring and prevention of illegal trade in ODS; proposed adjustments and amendments to the Montreal Protocol; obligations of parties to the Beijing Amendment under Article 4 of the Montreal Protocol with respect to HCFCs; certainty and notification of dates for OEWG and MOP meetings; and disclosure of interest guidelines for members of the Technology and Economic Assessment Panel (TEAP) and its technical options committees (TOCs).

¹⁷ Under the decision, parties also agreed that: CUEs allocated domestically that exceed levels permitted by the MOP must be drawn from existing stocks; methyl bromide stocks must be reported; and parties must “endeavor” to allocate CUEs to the particular categories specified in the decision.

¹⁸ This report also includes the details of MBTOC’s work plan for 2006 and proposed changes to its standard presumptions for consideration of future CUNs.

¹⁹ The Committee then convened for its thirty-fifth meeting from 7-9 December 2005, in Dakar, Senegal, to consider, among other matters, whether instances of ODS stockpiles resulting in deviations from the Protocol’s control measures should be treated as cases of potential non-compliance.

²⁰ http://www.ace.mmu.ac.uk/Resources/Fact_Sheets/Key_Stage_4/Ozone_Depletion/17.html

The Montreal Protocol represented a landmark in the international environmentalist movement. For the first time whole countries were legally bound to reducing and eventually phasing out altogether the use of CFCs and other ozone depleting chemicals²¹. The agreement was supplemented by agreements made in London in 1990 and in Copenhagen in 1992, by which the same countries promised to stop using CFCs and most of the other chemical compounds destructive to ozone by the end of 1995²². China and India, for example, are strongly increasing the use of air conditioning and cooling devices²³. Using CFC compounds in these devices would be cheaper than using replacement compounds harmless to ozone²⁴.

Phasing Out CFCs²⁵

In 1985, the Vienna Convention was adopted to formalise international co-operation on this issue. Additional efforts resulted in the signing of the Montreal Protocol in 1987²⁶. Because of measures taken under the Protocol, emissions of ozone-depleting substances are already falling²⁷. With evidence that international agreements to phase out the use of ozone depleting chemicals appear to be normal by the middle of the next century²⁸. In addition, since these gases are also responsible for the observed reduction in middle and high latitude

²¹ Failure to comply was accompanied by stiff penalties. The original Protocol aimed to decrease the use of chemical compounds destructive to ozone in the upper atmosphere by 50% by the year 1999.

²² The Protocol has been subsequently amended twice more, at Montreal in 1997 and at Beijing in 1999.

²³ http://www.ace.mmu.ac.uk/Resources/Fact_Sheets/Key_Stage_4/Ozone_Depletion/17.html

²⁴ An international fund has therefore been set up to help these countries to introduce new and environmentally friendlier technologies and chemicals. The depletion of the ozone layer is a world-wide problem, which does not respect the frontiers between different countries. It can only be affected through determined international co-operation.

²⁵ http://www.ace.mmu.ac.uk/Resources/Fact_Sheets/Key_Stage_4/Ozone_Depletion/18.html

²⁶ After the original Protocol was signed, new measurements showed worse damage to the ozone layer than was originally expected. In 1992, reacting to the latest scientific assessment of the ozone layer, the Parties decided to completely end production of halons by the beginning of 1994 and of CFCs by the beginning of 1996 in developed countries.

²⁷ Under current agreements, the stratospheric concentrations of chlorine and bromine are expected to reach their maximum within a few years and then slowly decline, although concentrations of chlorine are already falling in the troposphere.

²⁸ The recovery of the ozone layer will be gradual because of the long times required for CFCs to be removed from the atmosphere; some take as long as several hundred years. Nevertheless, the likelihood remains that deep ozone holes will continue to form annually in the Polar Regions, well into the next century. This situation will persist until stratospheric chlorine levels decrease.

stratospheric ozone, the depletion at these latitudes is predicted to continue unabated for at least 5 to 10 years²⁹.

Waste Regulation and Recycling³⁰

However, whilst replacements have been developed these cannot be used in existing systems, which can only be maintained with recycled halons using surplus material from redundant installations³¹. The Refrigeration Industry Board to ensure that best industrial practice is maintained during the disposal or re-use of CFCs³². The original Protocol aimed to decrease the use of chemical compounds destructive to ozone in the stratosphere by 50% by the year 1999³³. In order to deal with the special so long as their use of CFCs did not grow significantly. It can only be affected through determined international co-operation. Ozone depleting potentials are based on existing scientific knowledge and are to be reviewed and revised periodically³⁴. It also offers major incentives for non-signatory nations to sign the agreement³⁵.

So it is very apparent regarding the conservation that global warming due to the ozone hole is a threat to sustainability of living resources. It is utmost important that respective nations should take appropriate steps to tackle the situation. In 1991 The Antarctic Treaty came to conserve living resources.

²⁹ See supra 25.

³⁰ http://www.ace.mmu.ac.uk/Resources/Fact_Sheets/Key_Stage_4/Ozone_Depletion/19.html

³¹ In the UK the Halon Users' National Consortium (HUNC) is managing the installed banks of halons, acting as a clearinghouse putting those who need to continue to use halons in contact with those who do not.

³² Domestic users of old refrigerators can contact their local authority to find out if it operates a CFC recovery and recycling scheme.

³³ The Protocol was supplemented by agreements made in London in 1990 and in Copenhagen in 1992, where the same countries promised to stop using CFCs and most of the other chemical compounds destructive to ozone by the end of 1995. Fortunately, it has been fairly easy to develop and introduce compounds and methods to replace CFC compounds.

³⁴ <http://www.factmonster.com/ce6/sci/A0833884.html>

³⁵ After a series of rigorous meetings and negotiations, the Montreal Protocol on Substances that Deplete the Ozone Layer was finally agreed upon on 16 September 1987 at the Headquarters of the International Civil Aviation Organization in Montreal. The Montreal Protocol stipulates that the production and consumption of compounds that deplete ozone in the stratosphere--chlorofluorocarbons (CFCs), halons, carbon tetrachloride, and methyl chloroform--are to be phased out by 2000 (2005 for methyl chloroform). Scientific theory and evidence suggest that, once emitted to the atmosphere, these compounds could significantly deplete the stratospheric ozone layer that shields the planet from damaging UV-B radiation.

4.2-PROTOCOL ON ENVIRONMENTAL PROTECTION TO THE ANTARCTIC TREATY (1991)

For the purpose of conserving living resources the International agreement was signed 1959 between 13 nations with an interest in Antarctica (including the USA and Britain), and came into force 1961 for a 30-year period. A total of 39 countries are party to it (as of 1996)¹. Its provisions (covering the area south of latitude 60° S) neither accepted nor rejected any nation's territorial claims, but barred any new ones; imposed a ban on military operations and large-scale mineral extraction; and allowed for free exchange of scientific data from bases². Although tourism is increasing on the continent, its only long-term human residents are scientists and support personnel living on seasonal or year-round national bases³. Additionally, these ATS nations have since ratified three complementary treaties. The three are⁴: The Convention for the Conservation of Antarctic Seals (CCAS); The Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR); And the Protocol on Environmental Protection to the Antarctic Treaty (Protocol). Of course there are some problems with this analogy⁵. The Antarctic Treaty originated in an extraordinary moment of Cold War-era cooperation. In the mid-nineteen-fifties, a group of scientists convinced the U.N. to institute an event to promote cooperation in the sciences⁶. The treaty covers everything south of sixty degrees south latitude, now known as the Antarctic Treaty Area (ATA)⁷. Article IV clarifies that the Treaty does not repudiate any existing claim, but it

¹ <http://www.tiscali.co.uk/reference/encyclopaedia/hutchinson/m0024098.html>

² In 1980 the treaty was extended to conserve marine resources within the larger area bordered by the Antarctic Convergence; and in 1991 an agreement was signed extending the Antarctic Treaty and imposing a 50-year ban on mining activity.

³ Whether they are public or private, all of these expeditions come from just a handful of the world's countries.

⁴ <http://www.asoc.org/general/ats.htm>

⁵ For instance, CCAMLR (above) has slightly different national membership than the original Antarctic Treaty, and it governs an enlarged geographic area without increasing the jurisdiction of the original.

⁶ To this end, the U.N. designated July 1, 1957, to December 31, 1958, the "International Geophysical Year (IGY)."

⁷ Among other things, the treaty prohibits nuclear explosions, radioactive waste disposal, and military deployments in the ATA. (However, using military personnel to support scientists is specifically allowed.) The Treaty's other most significant goal is the encouragement of continued international cooperation in scientific research.

prohibits their assertion as well as the establishment of new claims⁸. Currently, forty-four nations have agreed to the Antarctic Treaty, but only twenty-seven control the decision making process⁹. In 1998, the twenty-seven Consultative Parties are: Argentina, Australia, Belgium, Brazil, Bulgaria, Chile, China, Ecuador, Finland, France, Germany, India, Italy, Japan, the Republic of Korea, Netherlands, New Zealand, Norway, Peru, Poland, Russia, South Africa, Spain, Sweden, the United Kingdom, Uruguay, and the United States¹⁰.

The Antarctic Environment¹¹

The polar ice cap holds within it a record of past atmospheres that go back tens or even hundreds of thousands of years, allowing study of the earth's natural climate cycles against which the significance of recent changes can be judged¹². In addition to climate change, the effects of human activities elsewhere on the planet have resulted in an ozone hole over the Antarctic exposing species in the Antarctic to dangerous radiation¹³.

Antarctic Treaty System¹⁴

During the first half of the twentieth century, several countries made territorial claims to various parts of the Antarctic¹⁵. Collectively, the Treaty, the Protocol and Conventions, and the measures adopted under those agreements constitute the Antarctic Treaty System¹⁶.

⁸ To date, none of these seven has renounced its claim, and the U.S. and Russia maintain the "right" to lay claims. Still, none has directly challenged Antarctica's international status.

⁹ <http://www.asoc.org/general/ats.htm>

¹⁰ The seventeen Non-consultative Parties are: Austria, Canada, Colombia, Cuba, the Czech Republic, Denmark, Greece, Guatemala, Hungary, the Democratic Republic of Korea, Papua New Guinea, Romania, the Slovak Republic, Switzerland, Turkey, Ukraine, and Venezuela.

¹¹ http://www.ec.gc.ca/international/regorgs/antarctic/1antarctic_e.htm

¹² Antarctica is home to hundreds of unique and vulnerable wildlife species. Its marine environment sustains a wide range of marine mammals, such as seals and whales, at far greater levels than are found in the Arctic region. Short food chains make the Antarctic marine ecosystem very fragile and susceptible to disruption.

¹³ Human activities have also generated traces of chemical pollution in the ice cap and in the cells of Antarctic plants and animals. Humans have had an impact on the Antarctic environment through localised disturbance over the past century, initially through fishing and hunting, and in more recent years through exploration, science and tourism.

¹⁴ See supra 11.

¹⁵ The International Geophysical Year (1957-58) presented an opportunity to discuss ways to avoid possible problems with conflicting claims and establish a means to facilitate continued international scientific

Protocol on Environmental Protection to the Antarctic Treaty: The Antarctic Treaty System was strengthened with the 1991 adoption of the Protocol on Environmental Protection to the Antarctic Treaty, commonly called the Madrid Protocol after the city in which it was signed. The Protocol came into force in 1998 and has been ratified by more than thirty countries¹⁷. It prohibits specific activities, such as damage to historic sites and harmful interference with wildlife¹⁸.

Liability for damage to the Antarctic environment is an issue yet to be resolved: Australia was a driving force behind a protocol to the Treaty (the Madrid Protocol), which has provided the Antarctic with the most comprehensive and rigorous international environmental protection regime anywhere on earth¹⁹. The measures provided for overall protection of native animals and plants and for the designation of specially protected areas²⁰. Australia hosts the CCAMLR secretariat in Hobart (the only international convention with headquarters in Australia), where members meet annually²¹. The declaration concluded that the Madrid Protocol demonstrated the parties' determination "to maintain and strengthen the Treaty and to protect Antarctica's environmental and scientific values"²².

Protection of Antarctica²³

The Antarctic Minerals Convention (CRAMRA) of 1988, as it could not be ratified. Instead, the commercial mining of mineral resources was banned completely by the Protocol of

collaboration. It led to the development of the Antarctic Treaty, which was signed in 1959 and entered into force in 1961.

¹⁶ Canada is a party to all of the agreements of the Antarctic Treaty System, having ratified the Madrid Protocol in 2003 and acceded to the Antarctic Treaty in 1988, the CCAS in 1990 and CCAMLR in 1988.

¹⁷ Parties are required to oversee the activities of expeditions organized in or proceeding from their territory, as well as the activities of their vessels, aircraft and stations in the Antarctic.

¹⁸ The Protocol requires that all activities undertaken in the Antarctic be subject to prior assessment of their environmental impacts and requires the development of contingency plans to respond to environmental emergencies.

¹⁹ <http://www.aad.gov.au/default.asp?casid=2416>

²⁰ In 1972, the Convention for the Conservation of Antarctic Seals provided a means for regulating commercial sealing should it ever resume, fully protecting three of the six antarctic seal species, and establishing catch limit mechanisms for the other three.

²¹ Around the same time, negotiations began for a more comprehensive convention governing commercial fishing in Antarctic waters.

²² <http://www.aad.gov.au/default.asp?casid=2416>

²³ http://www.auswaertiges-amt.de/www/en/aussenpolitik/vn/voelkerrecht/antarktis_html

Environmental Protection of 1991²⁴. Time and again, ships are caught fishing illegally, brought in and their catch confiscated by the states bordering on Antarctica²⁵. The treaty setting out the ban came into effect this week. Besides the ban on mining, the Antarctic Environmental Protocol designates the whole continent and its ecosystems as a "natural reserve devoted to peace and science."²⁶ An international scientific programme in the Antarctic was created under the auspices of the International Geophysical Year²⁷. The Cold War was under way so it is amazing that anything was written at all. The Antarctic is the only continent where scientists have control over the military²⁸. The 1980 Convention on the Conservation of Antarctic Marine Living Resources was negotiated in response to large-scale trawling for fin fish and krill (shrimp-like creatures) during the 1960s and 1970s²⁹. But this coincided with speculation that the continent could be the scene of an oil, natural gas and mineral rush because some transnational corporations had hopes of exploiting the wealth³⁰.

²⁴ This Protocol and its five Annexes encompass material and procedural regulations on environmentally sound conduct on the sixth continent, including an obligation to obtain authorization for any activity of any significance in Antarctica (e.g. research expeditions, tourist trips) and environmental impact assessments. German projects in Antarctica must therefore be authorized by the Federal Environmental Agency (Section 3 of the Act Implementing the Protocol of Environmental Protection).

²⁵ However, it is very difficult in the inhospitable and vast Antarctic waters to implement the provisions of the CCAMLR Convention effectively and to combat illegal fishing. Antarctica is the coldest, driest and stormiest of all continents. It is almost forty times as large as Germany and the only uninhabited continent. Even in summer (from December to February) 99% of Antarctica is covered in ice, up to 5000 metres deep in places. It is regarded as a "natural archive" for Earth's natural history and has a major impact on the global climate, as well as on the marine ecosystems connected with the South Polar Sea. Numerous states use it as an "open-air scientific laboratory" which, among other things, led to the discovery of the hole in the ozone layer.

²⁶ Antarctica is the world's last great wilderness, a continent of remarkable beauty and a vital international scientific laboratory. The environmental protocol, which helps to solidify Antarctica's location as one of the most significant areas for international scientific cooperation. For a continent with competing claimants, Antarctica has brought out the best of human qualities rather than the worst. It is a "good news" story that is often overlooked by the mass media. Various countries have made claims to parts of the Antarctic.

²⁷ The "year" in the Antarctic ran for 18 months from July 1957, during which 12 countries worked together on research. The success of the International Geophysical Year encouraged hopes of making the spirit of scientific co-operation more permanent.

²⁸ The Antarctic Treaty has demilitarised the continent but, ironically, the best-equipped personnel for transport over rough terrain are the military forces of the various countries conducting scientific research. The military do the work under the overall direction of scientists. The treaty has provided a good basis for other treaties.

²⁹ This represented a major breakthrough in marine conservation at the time because, instead of considering each species separately, it provides for an "ecosystem as a whole" approach to conservation and marine resources.

³⁰ Environmental non-governmental organisations, loosely coordinated by the Antarctic and South Oceans Coalition, fought that proposal throughout the 1980s. Eventually public opinion swung round to their point of view and they achieved one of the greatest environmental victories of the decade.

They forced the Antarctic Treaty consultative parties to stop all dreams of mineral prospecting and oil drilling and instead create a treaty to ban all such prospecting and drilling³¹. But it is now better protected under international law than when New Zealand first raised the issue of safeguarding the world's last wilderness³². The original signatories were the 12 countries active in Antarctica during the International Geophysical Year of 1957-58 and willing to accept a US invitation to the conference at which the treaty was negotiated³³. It also defers the question of territorial claims asserted by some nations and not recognized by others³⁴. 15 countries that have demonstrated their interest in Antarctica by carrying out substantial scientific activity there³⁵. This was a treaty started by scientists with the "rules" already worked out in the field (during the IGY) by cooperating scientists and military personnel³⁶. The treaty did not address mining issues³⁷.

The original treaty was designed to be "reviewed" in 30 years³⁸ - but not to end. Prior to 1991 a Convention Regulating the Antarctic Minerals Resource Activities³⁹ was proposed by the member nations (up to 29 in 1991) but there was disagreement and it was not ratified. In 1998 a compromise agreement was reached to add a 50-year ban on mining until the year 2048.

³¹ The environmental protocol was signed in 1991 and enough countries for it to enter into force have ratified it. By establishing high standards for all human activities on the continent, the environmental protocol goes a long way towards safeguarding Antarctica before it suffers from the human impacts felt over most of the rest of the Earth.

³² <http://www.dhushara.com/book/diversit/extra/antarc.htm>

³³ These countries were Argentina, Australia, Belgium, Chile, France, Japan, New Zealand, Norway, South Africa, the U.S.S.R., the United Kingdom and the United States of America (which opened the Amundsen-Scott South Pole Station for the International Geophysical Year).

³⁴ http://www.reference.com/browse/wiki/Antarctic_Treaty_System

³⁵ These additional countries are Brazil, Bulgaria, the People's Republic of China, Ecuador, Finland, Germany, India, Italy, South Korea, Netherlands, Peru, Poland, Spain, Sweden and Uruguay.

³⁶ (Used as the support staff for science)

³⁷ (A sensitive topic and one that most nations were not ready to discuss)

³⁸ <http://www.biosbcc.net/ocean/AAimportance.htm>

³⁹ (CRAMRA).