Chapter 23: The Natural Environment

Introduction

Introductory box ***Undersea politics*** **PHOTO**

In 2009 the government of the Maldive Islands held a cabinet meeting below the sea at which ministers donned sub aqua swimming gear and discused policy around a submerged cabinet table. This was, of course, a publicity stunt to highlight concerns at rising sea levels rather than an act of political necessity since the low lying islands had yet to be reduced to the status of sand banks in the Indian Ocean. However, this remains a likely future scenario. The country's highest point is just 2.4 meters above current sea level and 80% of the archipelago lies below 1 metre. Forecasts of the United Nations' International Panel on Climate change suggest a sea level rise of between 25 and 58 centimetres by the end of the present century. It is widely accepted that this is an eventuality which could be averted by global political action to limit global warming (which is melting the world's glaciers and ice sheets and so raising global sea levels) but the prospects of this happening seem- by 2010- to be remote. In other parts of the world the impacts of global warming appear less stark and the incentives to enact costly measures to limit this, such as curbing carbon dioxide emissions from vehicles and industry, less obvious leading to the intransigence which prompted the Maldive government's stunt. The government, indeed, seem to recognize that getting the world to act to save their country- and other low lying territories- is likely to be in vain and have simultaneously been pursuing a political 'Plan B'; buying a new homeland in India or Sri Lanka for their entire 300,000 population to relocate to as environmental refugees.

This incident highlights why environmental issues tend to polarize opinion in International Relations. To some, issues like global warming, overpopulation and ozone depletion are the most pressing of all items on the international political agenda, since they imperil all human and other life forms on earth. To others such issues are minor concerns relative to the threats posed by war and terrorism and, possibly, do not represent any sort of threat at all.

This chapter will explore how and why environmental issues have become more prominent in International Relations but still tend not to be afforded the same level of political significance at the global level as military or economic matters.

In this chapter will learn about the following:

- The emergence of environmental politics and political ecology.
- How and why environmental politics has globalized.
- Why achieving global consensus for political action on environmental issues has proved difficult.
- How, in spite of such difficulties, a consensus on global political action on the environment has emerged, persisted and survived US-led resistance.

The Emergence of Political Ecology

Issues relating to the natural environment are comparatively ‘new’ to politics and have only been on the agenda of international relations since the late 1960s. That is not to say, however, that problems of environmental change are in any way new. The

extinction of certain animal species due to human recklessness and the decline of woodland areas through over-exploitation are centuries old phenomena. The Dodo, Moa, and Passenger Pigeon, for example, were hunted to extinction before the 20th Century. Other notable changes to the natural environment have occurred entirely independent of human action. The 'Cretaceous / Tertiary Impact', caused by either a comet or an asteroid, created the 250km wide Chicxulub crater in the Gulf of Mexico, widely held as responsible for the extinction of the dinosaurs and other life forms long before the dawn of humanity. In addition, the temperature of the earth has periodically naturally warmed and cooled throughout human and pre-human history with various effects on the natural environment.

Box 23.1 *timeline of environmental politics*

Emergence of the science of ecology

1864	US scientist George Perkins Marsh's *Man and Nature* released- arguably the first book to prove human activities can harm the environment.
1866	German biologist Ernst Haeckel coins the term *ecology*.

Emergence of conservation policies

1872	Yellowstone National Park, US becomes world's first major nature conservation scheme.
1889	Royal Society for the Protection of Birds in Great Britain becomes world's first conservation pressure group.
1889	First ever international policy on non-human life form agreed- combating the spread of the disease *phylloxera* in wine grapes.
1892	Sierra Club conservation pressure group founded in the US.
1902	Convention on the Protection of Birds Useful to Agriculture becomes the first international policy on animal conservation.
1946	International Whaling Commission established.
1948	International Union for the Preservation of Nature founded by Pressure Groups and the UN (later became International Union for the Conservation of Nature).

Emergence of Political Ecology

1962	US marine biologist Rachel Carson's book *Silent Spring* quickly prompts political action in the US and much of the West to restrict the use of industrial chemicals because of their effects on wildlife.
1967	*Torey Canyon* oil tanker disaster.

Development of International Environmental Policy

1968	UN Biosphere Conference
1969	UN Population Fund established.
1972	UN Conference on the Human Environment in Stockholm.
1973	UN Conference on the Law of the Sea initiates process leading to ratification of the UN Convention in 1994.
1973	First International Convention for the Protection of Pollution from Ships (MARPOL).
1973	Convention on the Trade in Endangered Species (CITES)
1974	Fist UN Population Conference in Bucharest.
1979	Long Range Transboundary Air Pollution (LRTAP) agreement.
1985	Vienna Convention on Protection of the Ozone Layer.
1987	Montreal Protocol to the Vienna Convention.
1987	World Commission on Environment & Development set up by UN.
1992	UN Conference on the Environment & Development (Rio Earth Summit)
1992	International Framework Convention on Climate Change (IFCCC)
1993	UN Convention on Biological Diversity
1994	Convention to Combat Desertification
1997	Kyoto Protocol to the IFCCC
2001	Stockholm Conference on Persistent Organic Pollutants
2002	UN's World Summit on Sustainable Development in Johannesburg.

Conservation policies, driven by the aesthetics of loving the countryside or nationalism of preserving rural lifestyles, permeated the domestic politics of some developed countries in the early twentieth century (including, even, the Nazis[i]). However, the emergence of truly environmental rather than human-focussed politics- that is ***ecocentric*** rather than ***anthropocentric*** policies- did not occur until around a century after the birth of the science of ecology in the 1960s. The phylloxera and bird protection policies of 1889 and 1902 in box 23.1 dealt with a non-human species but for purely human (economic) interests A major factor in this development was the publication of Rachel Carson's hugely influential pollution polemic *Silent Spring* in 1962. Silent Spring most notably highlighted the polluting effects of the insecticide dichlorodiphenyltrichloroethane (DDT) on wild animals, vegetation and rivers. The book quickly influenced US policy with the government enacting legislation restricting DDT use in 1969 and then outlawed its use altogether in 1972.

Biodiversity

Biodiversity first emerged as a term as recently as 1986, during a 'National Forum on Biodiversity in the US', but the idea of seeking to maintain the variety of life forms on Earth pre-dates the age of international policy on environment and even the emergence of political ecology that followed in the wake of *Silent Spring*. The RSPB were prompted into action in the 19th Century through fears that the *grebe* was in danger of becoming extinct due to the fashion of using its feathers for hats. Grebes and other animals are, of course, not confined by state frontiers and so, after the Second World War, the RSPB, Sierra Club and other groups came to orientate their campaigns through the United Nations. Several groups, principally from the UK and US, worked with the

newly established United Nations Educational Scientific and Cultural Organization (UNESCO) to found the body that became The International Union for the Conservation of Nature (IUCN) and this became a focus of international information exchange on endangered species, based on the compilation of 'Red Lists' of flora and fauna close to extinction throughout the world (Adams 2004: 43-62). The IUCN then took the lead in drafting the first international policy on biodiversity when their research revealed that the cross-border trading in certain species' was a key factor in them becoming endangered. The 1973 Convention on the International Trade in Endangered Species (CITES) restricts the trading of goods derived from flora or fauna identified as being at risk of extinction, such as ivory and certain furs. 80 states became party to this Convention when it came into force in 1975 and by 2010 it had 175 parties- including all major industrialized states- and featured laws criminalizing the trade in around 30,000 species.

A regime specific to the conservation of whales can also be dated back to the 1940s but, similarly, did not become legally significant until several decades later. The International Whaling Commission (IWC) was set up in 1946, through concerns at the likely extinction of certain species due to hunting, but was very much anthropocentric as it was guided by the desire of whaling states to continue their practises in a sustainable manner. From the 1970s, however, the nature of the IWC was swept by the ecocentric tide as many states abandoned whaling in the face of concerted pressure group campaigning. Hence in 1986 the IWC framed a Moratorium which outlawed the hunting of all whale species apart from for scientific purposes. However, Norway and Iceland have not signed up to the moratorium and have continued commercial whaling activities, whilst Japan's claims that they are continuing the practise for purely scientific purposes are widely challenged by environmental pressure groups.

Transboundary Pollution

Soon after the upsurge of political interest in environmentalism prompted by Silent Spring it became apparent that, like biodiversity, pollution had international ramifications and could not be dealt with by domestic policy alone. Most notably, the phenomenon of *acid rain* came to be understood and older issues such as oil pollution by tankards came to command far greater prominence.

Acid rain became a contentious issue in the 1960s, not only through the emergence of evidence that rainwater could become contaminated and the effects of this on ground water and wildlife, but also because it was a problem in some states that could not be resolved by that state's government. Sulphur dioxide and other emissions from the burning of fossil fuels (coal, oil and natural gas) which accumulate in the Earth's atmosphere can return to the surface as precipitation, hundreds of miles from where they departed as waste fumes. Hence countries particularly suffering from this phenomenon, such as Sweden, Norway and Canada found that they could not resolve the problem since the root cause of it lay in other sovereign states. This form of transboundary pollution most graphically demonstrated the need for international cooperation to resolve certain environmental issues, which was already obvious in the case of states sharing rivers and other forms of water.

Box 23.3 *Acid rain*

In 1979 the Long Range Transboundary Air Pollution (LRTAP) agreement was signed up to by the US, Canada and most western European states, establishing cuts across the board in sulphur dioxide and other industrial emissions. That it was not until over a decade since the problem had become apparent that this modest agreement between friendly states emerged is testimony to the challenges presented by environmental problems to those traditional determinants of government policy: sovereignty, self-sufficiency, the national interest and economic growth. The 1970s also saw the rise of international cooperation on curbing pollution between states sharing common stretches of water. A series of 'Regional Sea Programmes' emerged, such as the Mediterranean Action Plan and North Sea Convention.

The 1967 Torey Canyon disaster, when an oil tanker was wrecked and spilled its load off the coast of the UK's Scilly Isles, was also influential in stimulating awareness of and an international political response to oil pollution. This was far from the first of such disasters but it was the biggest to date and received huge media attention with telegenic images of blackened birds and beaches fuelling the mood of public protest that was transforming domestic politics in Europe and North America. International political action soon followed and in 1973 the first International Convention for the Prevention of Pollution from Ships (MARPOL) was drafted, which for the first time set standards aiming to prevent accidents and criminalize the deliberate discharge of oil and other pollutants from ships on the high seas which had been a recognized problem for several years. It took a spate of further tanker accidents in the late 1970s, however, for MARPOL to eventually receive enough ratifications to enter into force in 1983.

Case study box **The Polluter's Dilemma: a hypothetical case study**

Four states share a common sea and for many decades have deposited waste materials in the sea without political restriction. However, pollution levels in the sea have now reached levels that are affecting fish stocks and tourism on the coast so the four governments convene a conference to discuss the possibility of a coordinated response.

The costs of pollution to each state's income and the costs of enacting restrictions on pollution are represented below.

STATE	COST OF POLLUTION	COST OF CURBING POLLUTION
A	$2 million per year	$1 million

B	$2 million per year	$3 million
C	$4 million per year	$12 million
D	$5 million per year	$10 million

What policy is in the best interest of each state?

For State A the decision is clear. Curbing pollution makes economic sense with a net benefit arising within a year of action. For State B, also, a net benefit is likely soon enough for this to make political sense. Such gains are, however, contingent on **all** states enacting the reforms so States A and B must also rely on States C and D following suit. For these two states, and particularly State C, the costs of curbing pollution outweigh the costs incurred for several years and possibly beyond the lifespan of their governments term's in office. Although there is a gain to be made in the long term the decision is more difficult because, as well as imposing short-term and unpopular costs, there is the nagging fear that acting on this might not even work since another state may not also implement the cuts. States A and B also share this dilemma- the polluters dilemma- since, although their cost-benefit analyses are more straightforward, their fear of State's C or D not acting is higher. Any one of the states may conclude that it is worth carrying on polluting and enjoy the benefits of an overall reduction in pollution through relying on the others to enact cuts- the ***free-rider problem***.

Ultimately, coordinated action is in the interests of all but short-termism and a lack of trust in other states makes it difficult to guarantee that states' will choose this option- ***the collective goods problem***.

Stop and think reflection

Many criticized the US Bush adminstration's position on environmental policies such as global warming but it is also worth reflecting on the fact that reducing CO_2 emissions (the key international policy in this area) would, in many ways, be an unpopular move domestically. What sort of pressures not to act do you imagine any US President would face?

Resource Depletion

A global version of the collective goods problem emerged in the late 1960s with the crystallization of the notion that sovereign control over the common 'goods' of water, air and natural resources was unsustainable. In 1968 the ecologist Garret Hardin used as a parable a warning first aired in the nineteenth century by the economist William Foster-Lloyd on the finite quality of shared resources, known as the 'Tragedy of the Commons'. Foster-Lloyd described how the traditional English village green, conventionally open to all villagers, had become endangered because of an abuse of privilege by the villagers in overgrazing their cattle. As the practise had gone on for centuries it had been assumed that it always could but it had emerged that an increase in the number of cattle above an optimum level was eroding the land and ruining the common resource for all. Hardin argued that the village green was analogous to ***global commons*** such as clean air, freshwater and high seas fish stocks, endangered by states continuing to exploit or pollute them oblivious to the fact that the cumulative effect of this would eventually be their depletion. 'Ruin is the destination toward which all men rush, each pursuing his

own best interest in a society that believes in the freedom of the commons' (Hardin 1968: 1244). Hardin's solution to the problem was population control. 'The only way we can preserve and nurture other and more precious freedoms is by relinquishing the freedom to breed' (*ibid*: 1248).

Global population control became a major international political concern in the late 1960s and early '70s, more through anthropocentric fear in the North than compassion for the South or ecocentricism. Another analogy which later came to be popularised by Hardin, likened global overpopulation to a situation where there are insufficient lifeboats in the sea after a shipping disaster. Hardin's thesis argued for the application of 'lifeboat ethics' to combat this, which essentially posited that international action to tackle famine was folly as wealthy countries would risk sinking their own 'lifeboats' in doing so. Better to let the overcrowded 'lifeboats' of the Third World sink than ensuring everyone drowns (Hardin 1996).

Such apocalyptic views of the global implications of overpopulation were nothing new and can actually be traced back as far as the eighteenth century and the works of British economist Thomas Malthus, who warned that the Earth's food resources were likely to soon be insufficient to support its population. Malthus' doomsday scenario never came to pass since the industrial revolution increased humanity's capacity to utilize resources and feed itself. The fears of *neo-Malthusians*- like Hardin- were also somewhat averted by the Green Revolution which greatly increased food production in the Global South through the utilization of intensive agricultural technology and techniques (such as the use of organochlorine pesticides). The demand for food has continued to rise in the less developed world and natural disasters continue to blight

many of the same countries, creating food shortages, but most contemporary analysts of famine emphasize distributive factors in their explanations of particular cases. Modern governments can insure against future crop shortages by stockpiling reserves of food and protecting the price of agricultural products (Sen 1981).

The UN established a programme specifically to encourage population control in 1969, the Fund for Population Activities (UNFPA) and a first in a series of UN intergovernmental conference on population took place in Bucharest in 1974. International political action on population control lessened in prominence from the 1980s, however, when it had become apparent to some Northern governments that growth in the South did not greatly affect their countries and through concerns in civil society and some governments that promoting birth control in Global south countries could have human rights implications by encouraging abortions, sterilizations and compromising women's reproductive freedom. To some the neo-Malthusians, and environmentalists in general, came to be seen as overly pessimistic doomsayers who failed to appreciate humanity's ingenuity in surmounting problems. The *Cornucopians*, led by US economist Julian Simon, reasoned that technical innovation had already improved the food supply, allowing it to meet a rising demand, but also that such a supply and demand rationale was outdated. Rather than a drain on resources, people in a modern service and consumer based economy were actually a resource themselves (Simon 1981).

A separate strand of neo-Malthusian thinking associated with the Tragedy of the Commons that emerged in the 1970s was the popularization of the 'limits to growth' thesis which argued that increases in industrial production and economic growth in

developed countries would have to be checked. A major report commissioned in 1972 by the Club of Rome, a thinktank of scientists, businessmen and politicians, warned that "..the limits to growth on this planet will be reached sometime within the next one hundred years" (Meadows, Meadows, Randers & Behrens 1972: 23). This warning gathered credence with the recognition that oil supplies were finite and greatly influenced political developments over the following decade. Whilst anxieties over population growth generally receded in international politics concerns over the depletion of certain key resources have persisted ever since.

The emergence of International Environmental Policy

The arrival of environmental politics on the international stage was confirmed by the convening of the 'Biosphere Conference', focussing on resource conservation, by UNESCO in 1968. Representatives of 60 states were present at the conference in Paris, including delegates of Cold War adversaries the US and Soviet Union. Although a barely remembered footnote in diplomatic history, the Biosphere Conference initiated two phenomena central to the progress of international environmental politics since then. Firstly; the event was organized through collaboration between several groups from within the UN system and civil society. Representatives of the UN's World Health Organization (WHO) and Food and Agricultural Organization (FAO) attended alongside UNESCO staff and the event was chaired and hosted by the International Union for the Conservation of Nature and attended by several pressure groups and prominent individual activists. This UN-civil society collaboration has been a central feature of the International Relations of the environment ever since. A second and related legacy of the Biosphere Conference was the idea of improving understanding of complex environmental problems by

building a transnational network of experts, an **epistemic community,** who can share information and seek to reach a consensus. Given the lack of scientific certainty on many environmental issues trying to get some sort of consensus is necessary to prevent governments using maverick scientific opinions to support non action and take the easy option in the polluters dilemma.

The Stockholm Conference

The Biosphere Conference's most important legacy of was to pave the way for a bigger UN summit four years later; the 1972 Conference on the Human Environment (UNCHE) at Stockholm. The Conference was boycotted by the USSR and its Eastern Bloc allies, over a row about the failure of Western states to recognize East Germany, but was attended by representatives of 113 states from across the world. The Stockholm Conference did not produce a new body of international law at a stroke but served to build consensus by getting agreement on several key principles of environmental governance which challenged conventional notions of state sovereignty. Amongst the Stockholm Conference's most significant legacies were the following outcomes:

- 'Principle 21' confirmed that states retained full sovereign authority over resources located in their own territory but charged them with the responsibility to exploit them with due regard to the environmental effect of this on other states.
- The concept of a ***'common heritage of mankind'*** was agreed whereby resources located outside of territorial borders (such as minerals on the bed of the High Seas) should be considered as belonging to the international community collectively.

- The United Nations Environmental Programme (UNEP) was created, to nurture and institutionalise epistemic communities.
- Establishing environmental questions firmly on the political agenda by prompting many governments to create new ministers and departments of the Environment and greatly deepening and widening a global network of environmental pressure groups.

UNEP became an important focus for epistemic communities on a range of environmental issues and assumed responsibility for the stewardship of regimes for common seas, such as the Mediterranean and the North Sea. The common heritage of mankind principle became more established, at least in the Western world, but did not fully displace the notion of sovereign control over resources. In political practise both sides of Principle 21 have been enacted and two very different solutions to the Tragedy of the Commons parable have been attempted. Firstly, you can have a Liberal solution: informed collective management to regulate use of the 'village green' for the benefit of all. Secondly, in a more Realist solution, you can abandon the idea of common land and divide the 'green' up into individual holdings in the expectation that each plot holder would graze sustainably. Both types of solutions are evident in the development in the 1970 and 80s of international law for a 'commons' already subject to many centuries of contention, the high seas (seas outside of any state's jurisdiction). The Third United Nations Conference on the Law of the Sea (UNCLOS III), which concluded in 1982, included an agreement that minerals on the bed of the High Sea would be the property of a new International Seabed Authority. This form of collective management to sustain collective goods can, however, be contrasted with the encroachment on the tradition of the 'freedom of the seas' by the huge growth of waters

claimed by states in the legitimization at UNCLOS III of 200 mile 'Exclusive Economic Zones (EEZs)'. An EEZ does not denote the full sovereign control of *territorial waters* (12 miles from the coast) but gives the state concerned primary rights over fishing and mineral exploitation in the zone. The rationale offered for the creation of EEZs was that fish stocks and other resources would be utilized more sustainably if under sovereign jurisdiction rather than subject to a 'free for all'. A tension between the 'freedom of the seas' and sovereign management persist and looks set to become more acute in forthcoming years as a number of states look to extend the EEZ principle to continental shelves beyond 200 miles of their coastlines. The recent spate of claims over the Arctic Ocean, where oil and mineral prospecting has become more practical due to the declining ice sheet, by Russia, Canada, Norway and Denmark, is a case in point.

The Globalization of Political Ecology

Throughout the 1970s and early '80s international environmental policy deepened but did not significantly widen. States, principally from the developed capitalist world, became party to numerous new **international regimes** as well as developing existing legal instruments in the areas of conservation, pollution and resource management. Changes in both the physical and political climate, however, came to bring the First, Second and Third World's closer together and globalize environmental politics from the 1980s.

Although transboundary pollution and the management of the global commons were, by the 1980s, firmly on the international political agenda, the majority of the harmful

effects of environmental change were viewed as localized problems and as such were of little concern to the wider international community. Domestic legislation in the developed world had banned the use of notoriously polluting chemicals like DDT and curbed the excesses of industrial emissions and waste disposal, leading to visible improvements in atmospheric quality and animal conservation. However, the emergence of evidence that seemingly remote problems, experienced primarily in the Global South, had wider repercussions served to reframe some environmental issues and bring others to global political prominence.

Deforestation- the progressive decline in tree numbers- seen for a number of years as a problem for forest-dwellers, human and otherwise, came to be cast in new light by the discovery in the 1980s of the 'carbon-sink effect', the fact that trees absorb atmospheric carbon dioxide. Carbon dioxide in the atmosphere contributes to global warming and above a certain level is poisonous to man. It has been estimated that the loss of trees in the world contributes more to global warming than the more frequently cited impact of transport (Stern 2006). The realization that the net loss of tropical rainforest could, ultimately, harm North American and European urban residents as well as Amazonian Amerindians helped bring this issue to the global political agenda. Additionally, the increased economic globalization of the world can bring external environmental problems into the domestic arena. Harmful organochlorine insecticides may have been virtually eliminated from use in developed countries by the 1980s but their continued use, promoted by Multi-National Corporations from the global North, deprived of a domestic market, was seeing them return to their places of origin in imported foodstuffs in a 'Circle of Poison' effect (Weir & Schapiro 1981).

As well as seeing some environmental issues from a wider perspective, in the 1980s it began to become apparent that globalization in general was transforming all environmental issues. The vast majority of environmental problems are related in some way to the processes of economic development and growth, which have dominated how governments frame their policies both domestically and in the global marketplace. Industrialization and urbanization, the classic ingredients of development, put extra strain on a country's resources, whilst changing its pattern of land use and altering the balance between the human and natural environment. Increased industrial and agricultural production invariably brings more pollution as well as more raw materials, food and wealth. At the Stockholm Conference Indian premier Indira Ghandi signalled that the global South would not compromise economic development for the sake of the environment since 'poverty is the worst pollution'. The fundamental paradox of how to reconcile economic growth with environmental concerns was apparent at Stockholm but, by the 1980s, could no longer be ignored. By then it had become clear that global environmental policy was being stymied because, although the developed world was coming to terms (albeit partially) with the need to put some limits on industrial 'progress', the Global South would not compromise economic development since the stakes were so much higher.

Sustainable Development

In an effort to get around the economic - environmental paradox, the UN General Assembly in 1987 authorized the establishment of a World Commission on Environment and Development (WCED). Chaired by Norwegian Prime Minister Gro Harlem Brundtland, the WCED produced the report 'Our Common Future',

identifying *sustainable development* as the solution. Sustainable development reconciled environmental and economic interests by framing them as interdependent. The Global North would have to take the lead in implementing costly anti-pollution measures and recognize that the South would need more time to follow suit. To the South this was only fair since the North was responsible for most global pollution and had been able to develop without constraints being put on their industrialization. To the North this was a price worth paying as it was the only way to win support from developing countries like China and India who would eventually come to be major global polluters also.

Sustainable development is less pessimistic than the 'Limits to Growth' thesis, which was prominent in environmental thinking in the 1970s, in that it does not consider economic growth to be anathema to avoiding pollution and the depletion of the Earth's resources. Economic growth, even for wealthy states, can be acceptable so long as it is at a level that can be sustained in the long run and not at the cost of degrading the environment. Hence sustainable development is less obviously contradictory to the national interest instinct as it merely calls upon governments to be more rationally long-termist in their economic policy. The message is that rapid economic growth today may enrich the present generation but risk impoverishing or endangering future generations if resources are not utilized in a sustainable and responsible manner.

The Rio Summit

The *Our Common Future* report prompted the UN General Assembly in 1989 to approve a conference as a twenty year follow up to Stockholm to flesh out the concept

of sustainable development. As the title indicates, the 1992 UN Conference on the Environment and Development (UNCED), held in Rio De Janeiro, recognized the need to couple together the two issue areas and was a much larger and more diverse gathering than in 1972. 170 states were represented, most at some stage by their head of government, and some 1,400 pressure groups were also present at the myriad formal and informal meetings that characterized the Conference. In contrast, at Stockholm only two heads of government and 134 pressure groups had attended. Although decision-making authority was reserved for government delegates the pressure groups at Rio played a pivotal role in organizing the event and in the extensive lobbying of the decision-makers.

Amongst twenty seven general principles agreed to in the 'Rio Declaration' at the summit were two particularly important points of consensus which served to clarify the meaning of sustainable development.

- **Principle 7** identified the 'common but differentiated responsibilities' of developed and less-developed states in environmental protection. The Global South were to be part of the process but the North would have to take the lead and incur most of the initial costs.
- **Principle 15** acknowledged the legitimacy of the 'precautionary principle' in developing environmental policy. This proposes that a lack of absolute scientific certainty over the harmful side-effects of some form of economic activity widely believed to be environmentally damaging, should not be used as an excuse to continue with it. This was an important agreement because issues of environmental change tend to be complex and subject to some level of scientific disagreement. In the face of this, excuses can more readily be

found for ignoring environmental demands and choosing the short-term option in polluter's dilemma scenarios.

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Like Stockholm, the Rio Summit did not instantly create international law but, unlike its predecessor, it did explicitly set the signatory governments on a legislatory path. 'Agenda 21' of UNCED set out a programme of action for implementing sustainable development across a range of environmental issues, including issues debated in recent years but not yet subject to conventions, such as biodiversity, global warming, deforestation and desertification. A Commission for Sustainable Development was established to regularly review progress towards establishing and implementing the conventions that were to follow. In addition, a crucial tenet of sustainable development was realized in the creation of the Global Environmental Facility, a fund subsidized by developed countries, from which Less Developed Countries could draw in order to be able to implement agreements. Four specific regimes were initiated at Rio:

- **The UN Convention on Biological Diversity (CBD)** entered into force in 1993 and went far beyond the previous most significant regime in this area, the Convention on the International Trade in Endangered Species, by committing the parties to biannual conferences at which their progress in conserving biological diversity in their countries is opened to scrutiny.

- **The Forest Principles** agreement emerged when negotiations to establish a deforestation convention failed due to the reluctance of states with prominent logging industries, like Brazil and Malaysia, to sanction significant restraints

on their trade. In its place what emerged instead was a weak, non legally-binding regime which, whilst proclaiming the virtues of sustainable forestry management, in effect gives the green light to states to continue deforesting by asserting that forests are sovereign resources. A short-termist and selfish response to the collective goods problem had occurred. Effectively regulating deforestation was too much of an economic burden for most prolific 'logging' states to countenance and, despite knowledge of the 'carbon sink effect', this was still not seen as sufficiently threatening to the Global North for their governments to push harder for action.

- **The Convention to Combat Desertification** was a response to the most visible manifestation of the 'tragedy of the commons' effect in the world over recent years whereby deserts have grown in size at the expense of fertile lands surrounding them. Once land becomes arid in this way it is effectively lost forever in terms of its productive value and so can have food security implications for the local population and, to a limited extent, humanity at large. The convention, established in 1994, sets out a code of practise for the management of semi-arid lands. The convention was unusual in global environmental politics in that it was prompted by developing rather than the industrialized states. It was principally African states, affected by the spread of the Sahara and Kalahari deserts, who championed the inclusion of this issue in Article 21. The regime has evolved slowly since 1994 and, although it is now virtually global in scope, it lacks any of the legal rigour of its other environmental regimes that have subsequently emerged. The effects of

desertification remain more localized than global and the level of political commitment has followed suit.

- **The Framework Convention on Climate Change (IFCCC)** emerged following a build up of concern at the implications of worldwide rises in temperature. An epistemic community had for a few years been voicing fears that global warming was not natural and a potential danger but without any conclusive scientific certainty. However, In the spirit of the precautionary principle, the IFCC was signed at Rio and entered into force two years later. The Convention at this stage, however, was also a limited, non-binding agreement without any explicit commitments imposed on states.

Global Environmental Policy and Human Security

Sustainable development and the end of the Cold War brought the world more together intellectually and politically and served to globalize environmental politics but it was a reactivation of anthropocentric values from the mid 1980s that did most to push some of those environmental issues further up the international political agenda- 'securitizing' them- through the fear that certain aspects of environmental change could be life-threatening. Environmental changes which have human health implications are much more likely to invoke international political action.

Ozone Depletion

Hard epistemic community evidence was able to prompt perhaps the most successful international policy on the environment some five years before the Rio Summit. In 1985 the British Antarctic Survey were able to prove conclusively what had been suspected by scientists for at least a decade, that the Earth's ozone layer had a hole in it. The ozone layer is a protective gaseous shell in the upper atmosphere which absorbs ultraviolet rays from the sun before they reach the Earth's surface, which is vital since such radiation can kill in the form of skin cancer and other ailments.

The clear danger posed by the loss of this defensive shield prompted an unusually rapid international response. Within a few months of the British Antarctic Survey discovery the Vienna Convention on Protection of the Ozone Layer established a framework treaty, fleshed out two years later in the 1987 Montreal Protocol on Substances That Deplete the Ozone Layer. The 1987 Montreal Protocol saw twenty four industrialized states bind themselves to an agreement for major cuts in the future use and emission of chlor-fluro-carbons (CFCs) and some other chemicals known to be agents of ozone depletion. In the years since 1987 the regime has been strengthened in a series of amendments deepening the cuts to be made by states and widening its application to most of the world. This was achieved by the application of key sustainable development principles agreed on at Rio with developing countries allowed to take a slower track towards phasing out CFCs than the developed states and a multilateral fund created to overcome the costs of implementing the agreements. The success of the regime can be proven by evidence that, within twenty years, the ozone layer had begun to repair itself (WMO/UNEP 2006).

Climate Change

The clearest case of how environmental change can become an issue of human security is in the threat posed by global warming. The Earth's average temperature has risen consistently over the last century and it is now almost universally accepted that this is more than a natural development and likely to accelerate if not dealt with. The central cause of global warming is an exacerbation of the natural phenomenon of the 'greenhouse effect', caused by increased industrial emissions. Increased releases of carbon dioxide and methane over the years, principally through the burning of fossil fuels, have served to exaggerate the natural tendency of the atmosphere to trap a certain amount of infrared sunlight after it is reflected from the Earth's surface. There are numerous implications arising from this phenomenon summarized in box 23.3.

box 23.3 *human security threats from climate change*

The implications of climate change are various but include increased desertification and a raising of sea levels due to the polar ice caps melting, both carrying significant threats to human life in the following forms:

- More frequent and lengthy heat waves
- More frequent droughts
- Coastal flooding due to sea level rises
- Reduced crop yields due to reduced rainfall
- Spread of tropical diseases north and south
- Increased rate of water-borne diseases in flooded areas
- Ocean acidification due to carbon dioxide effecting fish stocks
- More frequent and stronger riverine flooding in wet seasons due to glaciers melting / reduced water supply in dry season.
- Increased incidences of wildfires
- More frequent and stronger windstorms

A rise in appreciation of such threats, and recognition that the IFCC was inadequate as a means of countering them, prompted a significant revamp of the convention in the form of the 1997 Kyoto Protocol. The Kyoto Protocol enacted the principle of common but differentiated responsibilities by requiring developed countries to cut emissions of greenhouse gasses by 5.2% from 1990 levels by 2012 without any initial commitment from developing countries. Penalties for non-compliance are also included in the regime along with an imaginative means of meeting overall targets through ‘carbon trading’. This idea, initiated in the US in the 1970s, as part of the Long Range Transboundary Air Pollution (LRTAP) regime, provides a market mechanism to get round the collective goods problem. Countries exceeding their emissions target can pay countries below their target to acquire their ‘carbon credits’.

Although scientific uncertainties inevitably still exist over an issue as complex as climate change a definitive epistemic consensus has gradually emerged from the UN's Intergovernmental Panel on Climate Change, since its establishment in 1988. By their fourth report in 2007 this substantial grouping of the world's top climatologists were able to pronounce, in the cautious words of science, that it was between 90 and 95% certain that global warming was caused by human action (IPCC 2007). Climate change presents the quintessential polluter's dilemma with significant costs inherent in political action but with potentially the most profound of consequences of inaction. Costing such an issue must inevitably be somewhat sketchy but the 2006 'Stern Review', compiled by a British economist on behalf of the UK government, calculated the cost of non-action on climate change as amounting to at the very least 5 % of global GDP for evermore. Set against this, the costs of effective action to curb climate change would cost around 1% of global GDP per year (Stern 2006).

Global warming is a global problem, in both cause and effect, but the scale of human security threat is not equal across the globe. As illustrated in the opening box, for low-lying island states the prospect of a rise in the level of the Oceans is a threat of the utmost gravity. For other states the threat is seen as far more remote, both geographically and chronologically, and the urgency to act, which is generally needed for governments to ratify costly environmental agreements, is not there. Indeed, it should be noted that the Stern Review was very much a cost-benefit analysis and, whilst noting that globally the balance is undoubtedly weighted in favour of the former, it makes clear that some parts of the world could experience net gains from fewer cold related deaths, the increased revenue from tourism and improved agricultural fertility. It is also apparent that some of the threats associated with global

warming could be averted by human adaptation to a changing landscape (for example by migration), a point Cornucopians like Julian Simon have made in the face of another prophecy of environmental catastrophe like overpopulation in the 1960s and 70s (Simon 1999).

The threat posed by global warming, however, is increasingly thought not just to be a theoretical future scenario. The human cost is already significant and is not just confined to the developing world, where other factors can more easily be employed to explain mortality figures. The World Health Organization has estimated an annual death toll of 150,000 due to global warming since the 1970s (McMichael *et al* 2004). Most of these casualties are from the Global South but the North has been rocked by events such as the 2003 heatwave in Western Europe which killed up to 35,000 people and Hurricane Katrina, the following year, which claimed around 1,200 lives and caused an estimated $200 billion worth of damage in the US. Whilst proving categorically whether such single events are attributable to global warming is impossible, the changes associated with climate change are already occurring and a dwindling few believe that this overall trend can be put down to chance.

box 23.4 **Bjorn Lomborg-** ***The Sceptical Environmentalist***

Lomborg's 2001 work 'The Sceptical Environmentalist' attracted great interest (and great derision from Ecologists) for questioning whether implementing international policy on global warming made any rational sense. The Danish academic claims that he was converted to a sceptical view of the Kyoto Protocol and other international environmental policies he had previously supported by an exercize in one of his classes at the University of Aarhus in which he asked his students to consider the most efficient way to allocate money to solve the most pressing global problems. The students' results and Lomborg's subsequent research suggested that,

Persistent Organic Pollutants (POPs)

The 1992 Rio Summit was also the catalyst for significant global political action in the area of human health-threatening atmospheric pollution. UNEP's Governing Council in 1997 endorsed the opinion of the Intergovernmental Forum on Chemical Safety, which had been established at the Rio Summit, that a binding treaty be set up to phase out the production and use of thirteen POPs (initially a 'dirty dozen') including DDT and several other organochlorine pesticides across the world. The Treaty was signed by 127 governments at a Diplomatic Conference in Stockholm in 2001, initiating a regime that will continue to consider adding new chemicals to the original thirteen through a Review Committee. The production and use of the thirteen outlawed chemicals had long ceased in most developed countries but their properties ensured that they remained a domestic hazard to those populations. The listed chemicals are all highly persistent, have a propensity to travel globally in the atmosphere through a continual process of evaporation and deposition and frequently end up in human foodstuffs through the

process of bioaccumulation. Hence, sterility, neural disorders and cancer in peoples of the developed world can be attributed to the use of POPs in other parts of the planet. The political significance of this is such that even President George W Bush, already known in some quarters as the 'Toxic Texan' for his administrations lack of enthusiasm for environmental concerns, declared the USA to be a firm supporter of international political action on POPs.

box 23.5 **Chemicals subject to the Stockholm Convention**

Intentionally produced		
Aldrin	Pesticide	*use and production banned apart from for laboratory-scale research*
Chlordane	Pesticide	
Dieldrin	Pesticide	
Endrin	Pesticide	
Heptachlor	Pesticide	
Hexachlorobenzene (HCB)	Pesticide	
Mirex	Pesticide	
Toxaphene	Pesticide	
Polychlorinated Biphenyls (PCBs)	Industrial Chemical	
dichlorodiphenyltrichloroethane (DDT)	Pesticide	*use restricted to disease vector control*
unintentionally produced		
Polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD 'dioxins' / PCDF 'furans')		*use and production minimized with aim of elimination*
Hexachlorobenzene (HCB)	Pesticide	
Polychlorinated Biphenyls (PCBs)	Industrial chemical	

Aside from the POPs 'dirty dozen', pollution in general still represents a major threat to human life. It has been estimated that between a quarter and a third of all deaths in the world by disease have environmental causes, such as air and water pollution (Smith, Corvalan & Kiellstrom 1999: 573). Developed countries have long been aware of the human cost of pollution, as can be evidenced by the UK Clean Air Act of 1956 that followed in the wake of the Great Smog four years previously that had claimed the lives of around 4,000 Londoners. Over time, however, recognition has grown than national actions alone are not enough.

Natural Disasters

Natural disasters are often caused by human-induced environmental change. Deforestation exacerbates global warming and can be seen as a causal factor behind natural disasters such as mudslides down once naturally secure hillsides (Humphreys 2006: 1). Human vulnerability to natural hazards has increased in recent years due principally to population growth and movement in the global South. Natural disasters also often occur for rational, natural reasons related to environmental change. Tropical cyclones, for example, can be understood as 'safety valves' which dissipate the build up of excessive heat in the ocean or atmosphere. This has led some climatologists to suggest that the increased prominence of the *El Nino* effect in the 1990s, associated with more frequent cyclones and other extreme weather phenomena, could be linked to global warming (Mazza 1998, Trenberth 1998). The 2003 European heatwave, unprecedented in history, provided even clearer evidence of a correlation between global warming and natural disasters.

Biodiversity

Other issues of environmental change have come to be framed in more human security terms. In 2008 the Economics of Ecosystems and Biodiversity (TEEB), a thinktank funded by the EU and German government, replicated the Stern Report on a classically ecocentric issue somewhat put in the shade by the politics of climate change. The TEEB review posited that global GDP would be likely to decline by 7% by 2050 if greater commitment to preserving fish stocks, forests and other species needed by humanity was not given (Sukhdev 2008). Released against a backdrop of unprecedented rises in global food and energy prices this seemed a particularly pertinent warning.

Threats to the Global Consensus on Environmental Policy

The widening and deepening of international environmental policy in the 1980s and 1990s hit something of a crossroads in the new millennium with some erosion of the global consensus that had been carefully forged. The First and Third World had been reconciled by the concept of sustainable development and the First and Second Worlds merged together by changing political circumstances but it was a division within the ranks of the First World that came to threaten global solidarity. The United States under George W. Bush charted a new course in relation to global environmental policy, marked by a return to a more individualistic foreign policy with a non-collective strategy towards polluter's dilemma situations.

The US from 2001 backtracked on several commitments to principles and policies accepted by the Clinton administration at Rio. Most notably the Bush government broke ranks and failed to ratify the Kyoto protocol despite the US having signed the framework treaty under Clinton. The US government sidestepped the precautionary principle and common but differentiated responsibilities concept by citing the lack of scientific certainty over human induced global warming and concerns over the lesser constraints imposed on developing countries. In addition they also admitted that the treaty was simply not in their 'national interest' because of the economic cost. Similarly, the US delegation at the negotiations of the Stockholm POPS Convention fought hard to ensure that the term 'precautionary principle' did not appear in the final text and it was eventually replaced with the more ambiguous compromise phrase 'precautionary approach', which the industrialists hoped would open the door to less expansive 'scientific' toxicity assessments for future chemicals to be subject to the regime (Olsen 2003: 99-100). The significance of such semantics is clear from considering the Bush administration's pronouncements on the principle accepted by the US government at UNCED; "the US government supports precautionary approaches to risk management but we do not recognize any precautionary principle" (Graham 2002). By 2010 the US had still not ratified Stockholm with the Bush administration's initial enthusiasm curbed by the inclusion of chemicals on the 'POPs list' still used extensively by the US chlorine industry.

The exasperation of the international community at the new US strategy became evident at the ten year follow-up to Rio, the World Summit on Sustainable Development (WSSD) in Johannesburg in 2002. The conference is best remembered for the widespread booing and heckling which greeted the addresses of US Secretary

of State Colin Powell, who had been sent to Johannesburg in place of his President, mindful of the hostile reception he would receive. Johannesburg represented the third environmental 'mega-conference' but was more low-key than its predecessor. It was also noticeably more anthropocentric and more focussed on development than the environment. Little progress was made in advancing the agenda on biodiversity established at Rio and, although global warming policy was kept alive, it was not developed in any significant way. New proposals to set a framework for phasing in the use of renewable energy sources and improving Global South access to developed world food markets were side-stepped but some new goals were set in line with the recently-agreed upon Millennium Development Goals (MDGs) (see chapter 18). 2015 was set as a target date for the realization of two new human security aims: halving the number of people who lack access to clean water and achieving sustainability in global fishing.

Despite US obstruction global environmental politics in the 21st Century has continued to evolve and served to demonstrate the limitations of hegemonic power politics in the contemporary world. Fellow recalcitrant states, like Russia and Australia, were gradually converted to the Kyoto Protocol through pressure by the society of states and non-state actors. Epistemic consensus and global civil society have given such momentum to global environmental politics that it can survive being pushed off the international agenda by displays of national interest against the common good. That the US were out of step with the world became clear when their spokesmen were again booed and, most noticeably, yelled at to 'get out of the way' by the delegation of Papua New Guinea at a 2007 UN Climate Change conference at Bali.

By 2009 under a new President the US had been brought partly back into the fold and at a Copenhagen Summit (the 15th Conference of the Parties of the International Framework Convention on Climate Change) signalled acceptance of both the precautionary and common but differentiated responsibilities principles by agreeing to Carbon dioxide cuts and contributing to a global fund for assisting developing states to follow suit.

Conclusions

Global political action on the natural environmental has seen many issues politicized and put on the international agenda but only a few securitized at the top of that agenda. Myriad international regimes have emerged since the high water mark of environmental politics at Rio in 1992 but global policy today stands in stark contrast to domestic environmental laws in Western European and North American states which are marked by precautionary consumer standards and ecocentric measures. Where successful international environmental regimes have emerged it has usually been where a clear and unambiguous human health threat is apparent. It is far rarer for the value of environmental protection to be prioritized at the global level than it is at the domestic level. Internationally, governments are still prone to taking blinkered decisions informed by short-term economic interest in the face of epistemic consensus and longer term utilitarian calculations of 'national interest', as has most clearly been seen in the US's stance on climate change under the Bush government. From the perspective of governments worrying about an apparently imminent terrorist threat, economic

downturn or their next election global environmental issues often do not get placed near the top of their political ‘in trays’.

In the face of this the short-term and easier response is to play the polluter in the polluter’s dilemma. The scale of the threat posed by environmental change is difficult to quantify but it is undoubtedly significant and, to a large extent, avoidable given the political will. Probably the highest profile issues of environmental change, at different times over the past forty years, have been; resource scarcity due to population growth, ozone depletion and global warming. The fact that the first of these ‘crises’ never really materialized and the second one was partially averted by reasonably effective global political action has served to reinforce the notion that contemporary threats posed by environmental change, such as global warming, are potential rather than actual threats and perhaps exaggerated. As a result, despite gradually becoming more of a feature on the global political agenda, environmental issues still struggle to be treated as a political priority. The unprecedented scale of the threats posed by global warming and the increased appreciation of environmental principles amongst ordinary people around the world, however, may yet see this change.

Questions

1. Analyze and account for the increased international political concern that has been given to environmental issues over the last forty years.

2. Why has environmental policy at the global level generally proved harder to attain than it has domestically in most developed states?

3. Why do some people (and states) consider global warming to be an issue of critical importance whilst others do not?

4. Explain what is meant by sustainable development and account for the rise of this concept in international politics.

How green are you?

Are there any environmental issues that concern you? What is it about these issues that concerns you? Do you support action for economic or personal health reasons or are your concerns intrinsically about the natural environment?

Recommended Reading

Kutting, G. (ed) (2010) *The Environment and International Relations* Abingdon: Routledge

A thorough overview of contemporary global environmental politics across all the major issues by bringing together several leading writers in an authoritative but accessible reader.

Bjorn Lomborg (2007) *Cool It- The Skeptical Environmentalist's Guide to Global Warming*, London: Cyan & Marshall Cavendish.

In this follow up to the influential and controversial 'Skeptical Environmentalist' Lomborg develops his controversial thesis- that expenditure allocated to reducing Greenhouse gasses would be better allocated to global health issue instead- with the support of the 'Copenhagen Consensus' of prominent economists.

Stern, N. (2006) *The Economics of Climate Change- the Stern Review,* Cambridge: Cambridge University Press

An Economist's call to arms on global warming which clearly sets out the costs and benefits of climate change, concluding that action to curb further temperature rises would be cost effective as well as in the human interest.

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USEFUL WEB LINKS

United Nations Environment Programme: http://www.unep.org/

World Summit on Sustainable Development (Johannesburg 2002): http://www.johannesburgsummit.org/

Stern Report: http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm

[i] The Nazis linked natural and racial German purity as is encapsulated in their slogan 'blood and soil' and Agriculture minister Richard Darre enacted some policies in line with this, such as the 1935 Reich Law for the Protection of Nature.