FROM ONE EARTH TO ONE WORLD

An Overview by the World Commission on Environment and Development

In the middle of the 20th century, we saw our planet from space for the first time. Historians may eventually find that this vision had a greater impact on thought than did the Copernican revolution of the 16th century, which upset the human self-image by revealing that the Earth is not the centre of the universe. From space, we see a small and fragile ball dominated not by human activity and edifice but by a pattern of clouds, oceans, greenery, and soils. Humanity's inability to fit its doings into that pattern is changing planetary systems, fundamentally. Many such changes are accompanied by life-threatening hazards. This new reality, from which there is no escape, must be recognized—and managed.

Fortunately, this new reality coincides with more positive developments new to this century. We can move information and goods faster around the globe than ever before; we can produce more food and more goods with less investment of resources; our technology and science gives us at least the potential to look deeper into and better understand natural systems. From space, we can see and study the Earth as an organism whose health depends on the health of all its parts. We have the power to reconcile human affairs with natural laws and to thrive in the process. In this our cultural and spiritual heritages can reinforce our economic interests and survival imperatives.

This Commission believes that people can build a future that is more prosperous, more just, and more secure. Our report, Our Common Future, is not a prediction of ever increasing environmental decay, poverty, and hardship in an ever more polluted world among ever decreasing resources. We see instead the possibility for a new era of economic growth, one that must be based on policies that sustain and expand the environmental resource base. And we believe such growth to be absolutely essential to relieve the great poverty that is deepening in much of the developing world.

But the Commission's hope for the future is conditional on decisive political action now to begin managing environmental resources to ensure both sustainable human progress and human survival. We are
I. THE GLOBAL CHALLENGE

Successes and Failures

Those looking for success and signs of hope can find many: Infant mortality is falling; human life expectancy is increasing; the proportion of the world's adults who can read and write is climbing; the proportion of children starting school is rising; and global food production increases faster than the population grows.

But the same processes that have produced these gains have given rise to trends that the planet and its people cannot long bear. These have traditionally been divided into failures of 'development' and failures in the management of our human environment. On the development side, in terms of absolute numbers there are more hungry people in the world than ever before, and their numbers are increasing. So are the numbers who cannot read or write, the numbers without safe water or safe and sound homes, and the numbers short of woodfuel with which to cook and warm themselves. The gap between rich and poor nations is widening—not shrinking—and there is little prospect, given present trends and institutional arrangements, that this process will be reversed.

There are also environmental trends that threaten to radically alter the planet, that threaten the lives of many species upon it, including the human species. Each year another 6 million hectares of productive dryland turns into worthless desert. Over three decades, this would amount to an area roughly as large as Saudi Arabia. More than 11 million hectares of forests are destroyed yearly, and this, over three decades, would equal an area about the size of India. Much of this forest is converted to low-grade farmland unable to support the farmers who settle it. In Europe, acid precipitation kills forests and lakes and damages the artistic and architectural heritage of nations; it may have acidified vast tracts of soil beyond reasonable hope of repair. The burning of fossil fuels puts into the atmosphere carbon dioxide, which is causing gradual global warming. This 'greenhouse effect' may by early next century have increased average global temperatures enough to shift agricultural production areas, raise sea

levels to flood coastal cities, and disrupt national economies. Other industrial gases threaten to deplete the planet's protective ozone shield to such an extent that the number of human and animal cancers would rise sharply and the oceans' food chain would be disrupted. Industry and agriculture put toxic substances into the human food chain and into underground water tables beyond reach of cleansing.

There has been a growing realization in national governments and multilateral institutions that it is impossible to separate economic development issues from environment issues; many forms of development erode the environmental resources upon which they must be based, and environmental degradation can undermine economic development. Poverty is a major cause and effect of global environmental problems. It is therefore futile to attempt to deal with environmental problems without a broader perspective that encompasses the factors underlying world poverty and international inequality.

These concerns were behind the establishment in 1983 of the World Commission on Environment and Development by the UN General Assembly. The Commission is an independent body, linked to but outside the control of governments and the UN system. The Commission's mandate gave it three objectives: to re-examine the critical environment and development issues and to formulate realistic proposals for dealing with them; to propose new forms of international co-operation on these issues that will influence policies and events in the direction of needed changes; and to raise the levels of un-
derstanding and commitment to action of individuals, voluntary organizations, businesses, institutes, and governments.

Through our deliberations and the testimony of people at the public hearings we held on five continents, all the commissioners came to focus on one central theme: many present development trends leave increasing numbers of people poor and vulnerable, while at the same time degrading the environment. How can such development serve next century’s world of twice as many people relying on the same environment? This realization broadened our view of development. We came to see it not in its restricted context of economic growth in developing countries. We came to see that a new development path was required, one that sustained human progress not just in a few places for a few years, but for the entire planet into the distant future. Thus ‘sustainable development’ becomes a goal not just for the ‘developing’ nations, but for industrial ones as well.

The Interlocking Crises

Until recently, the planet was a large world in which human activities and their effects were neatly compartmentalized within nations, within sectors (energy, agriculture, trade), and within broad areas of concern (environmental, economic, social). These compartments have begun to dissolve. This applies in particular to the various global ‘crises’ that have seized public concern, particularly over the past decade. These are not separate crises: an environmental crisis, a development crisis, an energy crisis. They are all one.

The planet is passing through a period of dramatic growth and fundamental change. Our human world of 5 billion must make room in a finite environment for another human world. The population could stabilize at between 8 billion and 14 billion sometime next century, according to UN projections. More than 90 per cent of the increase will occur in the poorest countries, and 90 per cent of that growth in already bursting cities.

Economic activity has multiplied to create a $13 trillion world economy, and this could grow five- or tenfold in the coming half-century. Industrial production has grown more than fiftyfold over the past century, four-fifths of this growth since 1950. Such figures reflect and presage profound impacts upon the biosphere, as the world invests in houses, transport, farms, and industries. Much of the economic growth pulls raw material from forests, soils, seas, and waterways.

A mainspring of economic growth is new technology, and while this technology offers the potential for slowing the dangerously rapid consumption of finite resources, it also entails high risks, including new forms of pollution and the introduction to the planet of new variations of life forms that could change evolutionary pathways. Meanwhile, the industries most heavily reliant on environmental resources and most heavily polluting are growing most rapidly in the developing world, where there is both more urgency for growth and less capacity to minimize damaging side effects.

These related changes have locked the global economy and global ecology together in new ways. We have in the past been concerned about the impacts of economic growth upon the environment. We are now forced to concern ourselves with the impacts of ecological stress—degradation of soils, water regimes, atmosphere, and forests—upon our economic prospects. We have in the more recent past been forced to face up to a sharp increase in economic interdependence among nations. We are now forced to accustom ourselves to an accelerating ecological interdependence among nations. Ecology and economy are becoming ever more interwoven—locally, regionally, nationally, and globally—into a seamless net of causes and effects.

Impoverishing the local resource base can impoverish wider areas: Deforestation by highland farmers causes flooding on lowland farms; factory pollution robs local fishermen of their catch. Such grim local cycles now operate nationally and regionally. Dryland degradation sends environmental refugees in their millions across national borders. Deforestation in Latin America and Asia is causing more floods, and more destructive floods, in downhill, downstream nations. Acid precipitation and nuclear fallout have spread across the borders of Europe. Similar phenomena are emerging on a global scale, such as global warming and loss of ozone. Internationally traded hazardous chemicals entering foods are themselves internationally traded. In the next century, the environmental pressure causing population movements may increase sharply, while barriers to that movement may be even firmer than they are now.

Over the past few decades, life-threatening environmental concerns have surfaced in the developing world. Countrysides are coming under pressure from increasing numbers of farmers and the landless. Cities are filling with people, cars, and factories. Yet at the same time these developing countries must operate in a world in which the resources gap between most developing and industrial nations is widening, in which the industrial world dominates in the rule-making of some key international bodies, and in which the industrial world has already used much of the planet’s ecological capital. This
inequality is the planet's main 'environmental' problem; it is also its main 'development' problem.

International economic relationships pose a particular problem for environmental management in many developing countries. Agriculture, forestry, energy production, and mining generate at least half the gross national product of many developing countries and account for even larger shares of livelihoods and employment. Exports of natural resources remain a large factor in their economies, especially for the least developed. Most of these countries face enormous economic pressures, both international and domestic, to overexploit their environmental resource base.

The recent crisis in Africa best and most tragically illustrates the ways in which economics and ecology can interact destructively and trip into disaster. Triggered by drought, its real causes lie deeper. They are to be found in part in national policies that pay too little attention, too late, to the needs of smallholder agriculture and to the threats posed by rapidly rising populations. Their roots extend also to a global economic system that takes more out of a poor continent than it puts in. Debts that they cannot pay force African nations relying on commodity sales to overuse their fragile soils, thus turning good land to desert. Trade barriers in the wealthy nations—and in many developing ones—make it hard for Africans to sell their goods for reasonable returns, putting yet more pressure on ecological systems. Aid from donor nations has not only been inadequate in scale, but too often has reflected the priorities of the nations giving the aid, rather than the needs of the recipients. The production base of other developing world areas suffers similarly both from local failures and from the workings of international economic systems. As a consequence of the 'debt crisis' of Latin America, that region's natural resources are now being used not for development but to meet financial obligations to creditors abroad. This approach to the debt problem is short-sighted from several standpoints: economic, political, and environmental. It requires relatively poor countries simultaneously to accept growing poverty while exporting growing amounts of scarce resources.

A majority of developing countries now have lower per capita incomes than when the decade began. Rising poverty and unemployment have increased pressure on environmental resources as more people have been forced to rely more directly upon them. Many governments have cut back efforts to protect the environment and to bring ecological considerations into development planning.

The deepening and widening environmental crisis presents a threat to national security—and even survival—that may be greater than well-armed, ill-disposed neighbours and unfriendly alliances. Already in parts of Latin America, Asia, the Middle East, and Africa, environmental decline is becoming a source of political unrest and international tension. The recent destruction of much of Africa's drylands, agricultural production was more severe than if an invading army had pursued a scorched-earth policy. Yet most of the affected governments still spend far more to protect their people from invading armies than from the invading desert.

Globally, military expenditures total about $1 trillion a year and continue to grow. In many countries, military spending consumes such a high proportion of gross national product that it itself does great damage to these societies' development efforts. Governments tend to base their approaches to 'security' on traditional definitions. This is most obvious in the attempts to achieve security through the development of potentially planet-destroying nuclear weapons systems. Studies suggest that the cold and dark nuclear winter following even a limited nuclear war could destroy plant and animal ecosystems and leave any human survivors occupying a devastated planet very different from the one they inherited.

The arms race—in all parts of the world—pre-empts resources that might be used more productively to diminish the security threats created by environmental conflict and the resentments that are fueled by widespread poverty.
Many present efforts to guard and maintain human progress, to meet human needs, and to realize human ambitions are simply unsustainable—in both the rich and poor nations. They draw too heavily, too quickly, on already overdrawn environmental resource accounts to be affordable far into the future without bankrupting those accounts. They may show profits on the balance sheets of our generation, but our children will inherit the losses. We borrow environmental capital from future generations with no intention or prospect of repaying. They may damn us for our spendthrift ways, but they can never collect on our debt to them. We act as we do because we can get away with it: future generations do not vote; they have no political or financial power; they cannot challenge our decisions.

But the results of the present profligacy are rapidly closing the options for future generations. Most of today’s decision makers will be dead before the planet feels the heavier effects of acid precipitation, global warming, ozone depletion, or widespread desertification and species loss. Most of the young voters of today will still be alive. In the Commission’s hearings it was the young, those who have the most to lose, who were the harshest critics of the planet’s present management.

**Sustainable Development**

Humanity has the ability to make development sustainable—to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs. The concept of sustainable development does imply limits—not absolute limits but limitations imposed by the present state of technology and social organization on environmental resources and by the ability of the biosphere to absorb the effects of human activities. But technology and social organization can be both managed and improved to make way for a new era of economic growth. The Commission believes that widespread poverty is no longer inevitable. Poverty is not only an evil in itself, but sustainable development requires meeting the basic needs of all and extending to all the opportunity to fulfill their aspirations for a better life. A world in which poverty is endemic will always be prone to ecological and other catastrophes.

Meeting essential needs requires not only a new era of economic growth for nations in which the majority are poor, but an assurance that those poor get their fair share of the resources required to sustain that growth. Such equity would be aided by political systems that secure effective citizen participation in decision making and by greater democracy in international decision making.

Sustainable global development requires that those who are more affluent adopt life-styles within the planet’s ecological means—in their use of energy, for example. Further, rapidly growing populations can increase the pressure on resources and slow any rise in living standards; thus sustainable development can only be pursued if population size and growth are in harmony with the changing productive potential of the ecosystem.

Yet in the end, sustainable development is not a fixed state of harmony, but rather a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are made consistent with future as well as present needs. We do not pretend that the process is easy or straightforward. Painful choices have to be made. Thus, in the final analysis, sustainable development must rest on political will.

**The Institutional Gaps**

The objective of sustainable development and the integrated nature of the global environment/development challenges pose problems for institutions, national and international, that were established on the basis of narrow preoccupations and compartmentalized concerns. Governments’ general response to the speed and scale of global changes has been a reluctance to recognize sufficiently the need to change themselves. The challenges are both interdependent and integrated, requiring comprehensive approaches and popular participation.

Yet most of the institutions facing those challenges tend to be independent, fragmented, working to relatively narrow mandates with closed decision processes. Those responsible for managing natural resources and protecting the environment are institutionally separated from those responsible for managing the economy. The real world of interlocked economic and ecological systems will not change; the policies and institutions concerned must.

There is a growing need for effective international co-operation to manage ecological and economic interdependence. Yet at the same time, confidence in international organizations is diminishing and support for them dwindling.

The other great institutional flaw in coping with environment/development challenges is governments’ failure to make the bodies whose policy actions degrade the environment responsible for ensuring that their policies prevent that degradation. Environmental concern arose from damage caused by the rapid economic growth following
the Second World War. Governments, pressured by their citizens, saw a need to clean up the mess, and they established environmental ministries and agencies to do this. Many had great success—within the limits of their mandates—in improving air and water quality and enhancing other resources. But much of their work has of necessity been after-the-fact repair of damage: reforestation, reclaiming desert lands, rebuilding urban environments, restoring natural habitats, and rehabilitating wild lands.

The existence of such agencies gave many governments and their citizens the false impression that these bodies were by themselves able to protect and enhance the environmental resource base. Yet many industrialized and most developing countries carry huge economic burdens from inherited problems such as air and water pollution, depletion of ground-water, and the proliferation of toxic chemicals and hazardous wastes. These have been joined by more recent problems—erosion, desertification, acidification, new chemicals, and new forms of waste—that are directly related to agricultural, industrial, energy, forestry, and transportation policies and practices.

The mandates of the central economic and sectoral ministries are also often too narrow, too concerned with quantities of production or growth. The mandates of ministries of industry include production targets, while the accompanying pollution is left to ministries of environment. Electricity boards produce power, while the acid pollution they also produce is left to other bodies to clean up. The present challenge is to give the central economic and sectoral ministries the responsibility for the quality of those parts of the human environment affected by their decisions, and to give the environmental agencies more power to cope with the effects of unsustainable development.

The same need for change holds for international agencies concerned with development lending, trade regulation, agricultural development, and so on. These have been slow to take the environmental effects of their work into account, although some are trying to do so.

The ability to anticipate and prevent environmental damage requires that the ecological dimensions of policy be considered at the same time as the economic, trade, energy, agricultural, and other dimensions. They should be considered on the same agendas and in the same national and international institutions.

This reorientation is one of the chief institutional challenges of the 1990s and beyond. Meeting it will require major institutional development and reform. Many countries that are too poor or small or that have limited managerial capacity will find it difficult to do this unaided. They will need financial and technical assistance and training. But the changes required involve all countries, large and small, rich and poor.

II. THE POLICY DIRECTIONS

The Commission has focused its attention in the areas of population, food security, the loss of species and genetic resources, energy, industry, and human settlements—realizing that all of these are connected and cannot be treated in isolation one from another. This section contains only a few of the Commission’s many recommendations.

Population and Human Resources

In many parts of the world, the population is growing at rates that cannot be sustained by available environmental resources, at rates that are outstripping any reasonable expectations of improvements in housing, health care, food security, or energy supplies.

The issue is not just numbers of people, but how those numbers relate to available resources. Thus the ‘population problem’ must be dealt with in part by efforts to eliminate mass poverty, in order to assure more equitable access to resources, and by education to improve human potential to manage those resources.

Urgent steps are needed to limit extreme rates of population growth. Choices made now will influence the level at which the population stabilizes next century within a range of 6 billion people. But this is not just a demographic issue; providing people with facilities and education that allow them to choose the size of their families is a way of assuring—especially for women—the basic human right of self-determination.

Governments that need to do so should develop long-term, multifaceted population policies and a campaign to pursue broad demographic goals: to strengthen social, cultural, and economic motivations for family planning, and to provide to all who want them the education, contraceptives, and services required.

Human resource development is a crucial requirement not only to build up technical knowledge and capabilities, but also to create new values to help individuals and nations cope with rapidly changing social, environmental, and development realities. Knowledge shared globally would assure greater mutual understanding and create greater willingness to share global resources equitably.
Tribal and indigenous peoples will need special attention as the forces of economic development disrupt their traditional life-styles—life-styles that can offer modern societies many lessons in the management of resources in complex forest, mountain, and dryland ecosystems. Some are threatened with virtual extinction by insensitive development over which they have no control. Their traditional rights should be recognized and they should be given a decisive voice in formulating policies about resource development in their areas. (See Chapter 4 for a wider discussion of these issues and recommendations.)

Food Security: Sustaining the Potential

Growth in world cereal production has steadily outstripped world population growth. Yet each year there are more people in the world who do not get enough food. Global agriculture has the potential to grow enough food for all, but food is often not available where it is needed.

Production in industrialized countries has usually been highly subsidized and protected from international competition. These subsidies have encouraged the overuse of soil and chemicals, the pollution of both water resources and foods with these chemicals, and the degradation of the countryside. Much of this effort has produced surpluses and their associated financial burdens. And some of this surplus has been sent at concessional rates to the developing world, where it has undermined the farming policies of recipient nations. There is, however, growing awareness in some countries of the environmental and economic consequences of such paths, and the emphasis of agricultural policies is to encourage conservation.

Many developing countries, on the other hand, have suffered the opposite problem: farmers are not sufficiently supported. In some, improved technology allied to price incentives and government services has produced a major breakthrough in food production. But elsewhere, the food-growing small farmers have been neglected. Coping with often inadequate technology and few economic incentives, many are pushed onto marginal land: too dry, too steep, lacking in nutrients. Forests are cleared and productive drylands rendered barren.

Most developing nations need more effective incentive systems to encourage production, especially of food crops. In short, the ‘terms of trade’ need to be turned in favour of the small farmer. Most industrialized nations, on the other hand, must alter present systems in order to cut surpluses, to reduce unfair competition with nations that may have real comparative advantages, and to promote ecologically sound farming practices.

Food security requires attention to questions of distribution, since hunger often arises from lack of purchasing power rather than lack of available food. It can be furthered by land reforms, and by policies to protect vulnerable subsistence farmers, pastoralists, and the landless—groups who by the year 2000 will include 220 million households. Their greater prosperity will depend on integrated rural development that increases work opportunities both inside and outside agriculture. (See Chapter 5 for a wider discussion of these issues and recommendations.)

Species and Ecosystems: Resources for Development

The planet’s species are under stress. There is a growing scientific consensus that species are disappearing at rates never before witnessed on the planet, although there is also controversy over those rates and the risks they entail. Yet there is still time to halt this process.

The diversity of species is necessary for the normal functioning of ecosystems and the biosphere as a whole. The genetic material in wild species contributes billions of dollars yearly to the world economy in the form of improved crop species, new drugs and medicines, and raw materials for industry. But utility aside, there are also moral, ethical, cultural, aesthetic, and purely scientific reasons for conserving wild beings.

A first priority is to establish the problem of disappearing species and threatened ecosystems on political agendas as a major economic and resource issue.

Governments can stem the destruction of tropical forests and other reservoirs of biological diversity while developing them economically. Reforming forest revenue systems and concession terms could raise billions of dollars of additional revenues, promote more efficient, long-term forest resource use, and curtail deforestation.

The network of protected areas that the world will need in the future must include much larger areas brought under some degree of protection. Therefore, the cost of conservation will rise—directly and in terms of opportunities for development foregone. But over the long term the opportunities for development will be enhanced. International development agencies should therefore give comprehensive and systematic attention to the problems and opportunities of species conservation.

Governments should investigate the prospect of agreeing to a
‘Species Convention’, similar in spirit and scope to other international conventions reflecting principles of ‘universal resources’. They should also consider international financial arrangements to support the implementation of such a convention. (See Chapter 6 for a wider discussion of these issues and recommendations.)

Energy: Choices for Environment and Development

A safe and sustainable energy pathway is crucial to sustainable development; we have not yet found it. Rates of increase in energy use have been declining. However, the industrialization, agricultural development, and rapidly growing populations of developing nations will need much more energy. Today, the average person in an industrial market economy uses more than 80 times as much energy as someone in sub-Saharan Africa. Thus any realistic global energy scenario must provide for substantially increased primary energy use by developing countries.

To bring developing countries’ energy use up to industrialized country levels by the year 2025 would require increasing present global energy use by a factor of five. The planetary ecosystem could not stand this, especially if the increases were based on non-renewable fossil fuels. Threats of global warming and acidification of the environment most probably rule out even a doubling of energy use based on present mixes of primary sources.

Any new era of economic growth must therefore be less energy-intensive than growth in the past. Energy efficiency policies must be the cutting edge of national energy strategies for sustainable development, and there is much scope for improvement in this direction. Modern appliances can be redesigned to deliver the same amounts of energy-services with only two-thirds or even one-half of the primary energy inputs needed to run traditional equipment. And energy efficiency solutions are often cost-effective.

After almost four decades of immense technological effort, nuclear energy has become widely used. During this period, however, the nature of its costs, risks, and benefits have become more evident and the subject of sharp controversy. Different countries world-wide take up different positions on the use of nuclear energy. The discussion in the Commission also reflected these different views and positions. Yet all agreed that the generation of nuclear power is only justifiable if there are solid solutions to the unsolved problems to which it gives rise. The highest priority should be accorded to research and development on environmentally sound and ecologically viable alternatives, as well as on means of increasing the safety of nuclear energy.

Energy efficiency can only buy time for the world to develop ‘low-energy paths’ based on renewable sources, which should form the foundation of the global energy structure during the 21st century. Most of these sources are currently problematic, but given innovative development, they could supply the same amount of primary energy the planet now consumes. However, achieving these use levels will require a programme of coordinated research, development, and demonstration projects commanding funding necessary to ensure the rapid development of renewable energy. Developing countries will require assistance to change their energy use patterns in this direction.

Millions of people in the developing world are short of fuelwood, the main domestic energy of half of humanity, and their numbers are growing. The wood-poor nations must organize their agricultural sectors to produce large-amounts of wood and other plant fuels. The substantial changes required in the present global energy mix will not be achieved by market pressures alone, given the dominant role of governments as producers of energy and their importance as consumers. If the recent momentum behind annual gains in energy efficiency is to be maintained and extended, governments need to make it an explicit goal of their policies for energy pricing to consumers. Prices needed to encourage the adoption of energy-saving measures may be achieved through several means. Although the Commission expresses no preference, ‘conservation pricing’ requires that governments take a long-term view in weighing the costs and benefits of the various measures. Given the importance of oil prices on international energy policy, new mechanisms for encouraging dialogue between consumers and producers should be explored.

A safe, environmentally sound, and economically viable energy pathway that will sustain human prog. & into the distant future is clearly imperative. It is also possible. But it will require new dimensions of political will and institutional co-operation to achieve it. (See Chapter 7 for a wider discussion of these issues and recommendations.)

Industry: Producing More with Less

The world manufactures seven times more goods today than it did as recently as 1950. Given population growth rates, a five- to tenfold increase in manufacturing output will be needed just to raise developing-world consumption of manufactured goods to industrialized world levels by the time population growth rates level off next century.
Experience in the industrialized nations has proved that anti-pollution technology has been cost-effective in terms of health, property, and environmental damage avoided, and that it has made many industries more profitable by making them more resource-efficient. While economic growth has continued, the consumption of raw materials has held steady or even declined, and new technologies offer further efficiencies.

Nations have to bear the costs of any inappropriate industrialization, and many developing countries are realizing that they have neither the resources nor—given rapid technological change—the time to damage their environments now and clean up later. But they also need assistance and information from industrialized nations to make the best use of technology. Transnational corporations have a special responsibility to smooth the path of industrialization in the nations in which they operate.

Emerging technologies offer the promise of higher productivity, increased efficiency, and decreased pollution, but many bring risks of new toxic chemicals and wastes and of major accidents of a type and scale beyond present coping mechanisms. There is an urgent need for tighter controls over the export of hazardous industrial and agricultural chemicals. Present controls over the dumping of hazardous wastes should be tightened.

Many essential human needs can be met only through goods and services provided by industry, and the shift to sustainable development must be powered by a continuing flow of wealth from industry. (See Chapter 8 for a wider discussion of these issues and recommendations.)

The Urban Challenge

By the turn of the century, almost half of humanity will live in urban centres; the world of the 21st century will be a largely urban world. Over only 65 years, the developing world's urban population has increased tenfold, from around 100 million in 1920 to 1 billion today. In 1940, one person in 100 lived in a city of 1 million or more inhabitants; by 1980, one in 10 lived in such a city. Between 1985 and the year 2000, Third World cities could grow by another three-quarters of a billion people. This suggests that the developing world must, over the next few years, increase by 65 per cent its capacity to produce and manage its urban infrastructure, services, and shelter merely to maintain today's often extremely inadequate conditions.

Few city governments in the developing world have the power, resources, and trained personnel to provide their rapidly growing populations with the land, services, and facilities needed for an adequate human life: clean water, sanitation, schools, and transport. The result is mushrooming illegal settlements with primitive facilities, increased overcrowding, and rampant disease linked to an unhealthy environment. Many cities in industrial countries also face problems—deteriorating infrastructure, environmental degradation, inner-city decay, and neighbourhood collapse. But with the means and resources to tackle this decline, the issue for most industrial countries is ultimately one of political and social choice. Developing countries are not in the same situation. They have a major urban crisis on their hands.

Governments will need to develop explicit settlements strategies to guide the process of urbanization, taking the pressure off the largest urban centres and building up smaller towns and cities, more closely integrating them with their rural hinterlands. This will mean examining and changing other policies—taxation, food pricing, transportation, health, industrialization—that work against the goals of settlements strategies.

Good city management requires decentralization—of funds, political power, and personnel—to local authorities, which are best placed to appreciate and manage local needs. But the sustainable development of cities will depend on closer work with the majorities of urban poor who are the true city builders, tapping the skills, energies, and resources of neighbourhood groups and those in the 'informal sector'. Much can be achieved by 'site and service' schemes that provide households with basic services and help them to get on with building sounder houses around these. (See Chapter 9 for a wider discussion of these issues and recommendations.)

III. INTERNATIONAL CO-OPERATION AND INSTITUTIONAL REFORM

The Role of the International Economy

Two conditions must be satisfied before international economic exchanges can become beneficial for all involved. The sustainability of ecosystems on which the global economy depends must be guaranteed. And the economic partners must be satisfied that the basis of exchange is equitable. For many developing countries, neither condition is met.

Growth in many developing countries is being stifled by depressed commodity prices, protectionism, intolerable debt burdens, and declining flows of development finance. If living standards are to grow so as to alleviate poverty, these trends must be reversed.
A particular responsibility falls to the World Bank and the International Development Association as the main conduit for multilateral finance to developing countries. In the context of consistently increased financial flows, the World Bank can support environmentally sound projects and policies. In financing structural adjustment, the International Monetary Fund should support wider and longer term development objectives than at present: growth, social goals, and environmental impacts.

The present level of debt service of many countries, especially in Africa and Latin America, is not consistent with sustainable development. Debtors are being required to use trade surpluses to service debts, and are drawing heavily on non-renewable resources to do so. Urgent action is necessary to alleviate debt burdens in ways that represent a fairer sharing between both debtors and lenders of the responsibilities and burdens.

Current arrangements for commodities could be significantly improved: More compensatory financing to offset economic shocks would encourage producers to take a long-term view, and not to overproduce commodities; and more assistance could be given from diversification programmes. Commodity-specific arrangements can build on the model of the International Tropical Timber Agreement, one of the few that specifically includes ecological concerns.

Multinational companies can play an important role in sustainable development, especially as developing countries come to rely more on foreign equity capital. But if these companies are to have a positive influence on development, the negotiating capacity of developing countries vis-à-vis transnationals must be strengthened so they can secure terms that respect their environmental concerns.

However, these specific measures must be located in a wider context of effective co-operation to produce an international economic system geared to growth and the elimination of world poverty. (See Chapter 3 for a more detailed discussion of issues and recommendations on the international economy.)

Managing the Commons

Traditional forms of national sovereignty raise particular problems in managing the ‘global commons’ and their shared ecosystems—the oceans, outer space, and Antarctica. Some progress has been made in all three areas; much remains to be done.

The UN Conference on the Law of the Sea was the most ambitious attempt ever to provide an internationally agreed regime for the management of the oceans. All nations should ratify the Law of the Sea Treaty as soon as possible. Fisheries agreements should be strengthened to prevent current overexploitation, as should conventions to control and regulate the dumping of hazardous wastes at sea.

There are growing concerns about the management of orbital space, centring on using satellite technology for monitoring planetary systems, on making the most effective use of the limited capacities of geosynchronous orbit for communications satellites, and on limiting space debris. The orbiting and testing of weapons in space would greatly increase this debris. The international community should seek to design and implement a space regime to ensure that space remains a peaceful environment for the benefit of all.

Antarctica is managed under the 1959 Antarctic Treaty. However, many nations outside of that pact view the Treaty System as too limited, both in participation and in the scope of its conservation measures. The Commission’s recommendations deal with the safeguarding of present achievements, the incorporation of any minerals development into a management regime, and various options for the future. (See Chapter 10 for more discussion on issues and recommendations on the management of the commons.)

Peace, Security, Development, and the Environment

Among the dangers facing the environment, the possibility of nuclear war is undoubtedly the gravest. Certain aspects of the issues of peace and security bear directly upon the concept of sustainable development. The whole notion of security as traditionally understood—in terms of political and military threats to national sovereignty—must be expanded to include the growing impacts of environmental stress—locally, nationally, regionally, and globally. There are no military solutions to ‘environmental insecurity’.

Governments and international agencies should assess the cost-effectiveness, in terms of achieving security, of money spent on armaments compared with money spent on reducing poverty or restoring a ravaged environment.

But the greatest need is to achieve improved relations among those major powers capable of deploying weapons of mass destruction. This is needed to achieve agreement on tighter control over the proliferation and testing of various types of weapons of mass destruction—nuclear and non-nuclear—including those that have environmental implications. (See Chapter 11 for more discussion of issues and recommendations on the links between peace, security, development, and the environment.)
Institutional and Legal Change

The report that follows throughout (and especially in Chapter 12) many specific recommendations for institutional and legal change. These cannot be adequately summarized here. However, the Commission’s main proposals are embodied in six priority areas.

Getting at the Sources

Governments must begin now to make the key national, economic, and sectoral agencies directly responsible and accountable for ensuring that their policies, programmes, and budgets support development that is economically and ecologically sustainable.

By the same token, the various regional organizations need to do more to integrate environment fully in their goals and activities. New regional arrangements will especially be needed among developing countries to deal with transboundary environmental issues.

All major international bodies and agencies should ensure that their programmes encourage and support sustainable development, and they should greatly improve their coordination and co-operation. The Secretary-General of the United Nations Organization should provide a high-level centre of leadership for the UN system to assess, advise, assist, and report on progress made towards this goal.

Dealing with the Effects

Governments should also reinforce the roles and capacities of environmental protection and resource management agencies. This is needed in many industrialized countries, but most urgently in developing countries, which will need assistance in strengthening their institutions. The UN Environment Programme (UNEP) should be strengthened as the principal source on environmental data, assessment, and reporting and as the principal advocate and agent for change and international co-operation on critical environment and natural resource protection issues.

Assessing Global Risks

The capacity to identify, assess, and report on risks of irreversible damage to natural systems and threats to the survival, security, and well-being of the world community must be rapidly reinforced and extended. Governments, individually and collectively, have the principal responsibility to do this. UNEP’s Earthwatch programme should be the centre of leadership in the UN system on risk assessment.

However, given the politically sensitive nature of many of the most critical risks, there is also a need for an independent but complementary capacity to assess and report on critical global risks. A new international programme for co-operation among largely non-governmental organizations, scientific bodies, and industry groups should therefore be established for this purpose.

Making Informed Choices

Making the difficult choices involved in achieving sustainable development will depend on the widespread support and involvement of an informed public and of non-governmental organizations, the scientific community, and industry. Their rights, roles, and participation in development planning, decision making, and project implementation should be expanded.

Providing the Legal Means

National and international law is being rapidly outdistanced by the accelerating pace and expanding scale of impacts on the ecological basis of development. Governments now need to fill major gaps in existing national and international law related to the environment, to find ways to recognize and protect the rights of present and future generations to an environment adequate for their health and well-being, to prepare under UN auspices a universal Declaration on environmental protection and sustainable development and a subsequent Convention, and to strengthen procedures for avoiding or resolving disputes on environment and resource management issues.

Investing in Our Future

Over the past decade, the overall cost-effectiveness of investments in halting pollution has been demonstrated. The escalating economic and ecological damage costs of not investing in environmental protection and improvement have also been repeatedly demonstrated—often in grim toils of flood and famine. But there are large financial implications: for renewable energy development, pollution control, and achieving less resource-intensive forms of agriculture.

Multilateral financial institutions have a crucial role to play. The World Bank is presently reorienting its programmes towards greater environmental concerns... This should be accompanied by a fundamental commitment to sustainable development by the Bank. It is also essential that the regional Development Banks and the International Monetary Fund incorporate similar objectives in their policies and programmes. A new priority and focus is also needed in bilateral aid agencies.
Given the limitations on increasing present flows of international aid, proposals for securing additional revenue from the use of international commons and natural resources should now be seriously considered by governments.

IV. A CALL FOR ACTION

Over the course of this century, the relationship between the human world and the planet that sustains it has undergone a profound change.

When the century began, neither human numbers nor technology had the power radically to alter planetary systems. As the century closes, not only do vastly increased human numbers and their activities have that power, but major, unintended changes are occurring in the atmosphere, in soils, in waters, among plants and animals, and in the relationships among all of these. The rate of change is outstripping the ability of scientific disciplines and our current capabilities to assess and advise. It is frustrating the attempts of political and economic institutions, which evolved in a different, more fragmented world, to adapt and cope. It deeply worries many people who are seeking ways to place those concerns on the political agendas.

The onus lies with no one group of nations. Developing countries face the obvious life-threatening challenges of desertification, deforestation, and pollution, and endure most of the poverty associated with environmental degradation. The entire human family of nations would suffer from the disappearance of rain forests in the tropics, the loss of plant and animal species, and changes in rainfall patterns. Industrial nations face the life-threatening challenges of toxic chemicals, toxic wastes, and acidification. All nations may suffer from the releases by industrialized countries of carbon dioxide and of gases that react with the ozone layer, and from any future war fought with the nuclear arsenals controlled by those nations. All nations will have a role to play in changing trends, and in righting an international economic system that increases rather than decreases inequality, that increases rather than decreases numbers of poor and hungry.

The next few decades are crucial. The time has come to break out of past patterns. Attempts to maintain social and ecological stability through old approaches to development and environmental protection will increase instability. Security must be sought through change. The Commission has noted a number of actions that must be taken to reduce risks to survival and to put future development on paths that are sustainable. Yet we are aware that such a reorientation on a continuing basis is simply beyond the reach of present decision-making structures and institutional arrangements, both national and international.

This Commission has been careful to base our recommendations on the realities of present institutions, on what can and must be accomplished today. But to keep options open for future generations, the present generation must begin now, and begin together.

To achieve the needed changes, we believe that an active follow-up of this report is imperative. It is with this in mind that we call for the UN General Assembly, upon due consideration, to transform this report into a UN Programme on Sustainable Development. Special follow-up conferences could be initiated at the regional level. Within an appropriate period after the presentation of this report to the General Assembly, an international conference could be convened to review progress made, and to promote follow-up arrangements that will be needed to set benchmarks and to maintain human progress.

First and foremost, this Commission has been concerned with people—of all countries and all walks of life. And it is to people that we address our report. The changes in human attitudes that we call for depend on a vast campaign of education, debate, and public participation. This campaign must start now if sustainable human progress is to be achieved.

The members of the World Commission on Environment and Development came from 21 very different nations. In our discussions, we disagreed often on details and priorities. But despite our widely differing backgrounds and varying national and international responsibilities, we were able to agree to the lines along which change must be drawn.

We are unanimous in our conviction that the security, well-being, and very survival of the planet depend on such changes, now.