

# BIOS IN THE NEXT MILLENNIUM

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Bios means life. Life on this planet is in danger. The biosphere is an intricately linked system and violence done to the environment, to animal and plant life has its repercussions on human life as well. We do not and cannot live in isolation from our surrounding.

Mankind is involved in a unique race. No-one can know what will be the state of the world as we move into the next millennium. On the optimistic side we have the words of Arnold Toynbee, spoken more than a generation ago, "Our generation is the first since the dawn of history in which mankind dared to believe it practical to make the benefits of civilization available to the whole human race."

Thanks to advances in technology and society, the physical potential too alleviate the worst aspects of abject poverty has emerged from beyond the horizon for the first time in history and though perhaps obscured at times by troublesome - and even formidable - obstacles, it is within view as a practical, attainable objective.

In all previous generations, a massive indifference to the effects of poverty was perhaps excused in people's hearts by a lack of clear awareness of the extent and conditions of the needy in remote places, or by the reality that there was so little which could be done. Limited resources and knowledge made poverty and poor health the lot of the majority of humankind.

Today, no such justifications exist. We need not seek far to find images of what life is like for one billion of our fellow humans living in gross poverty - conditions which, for example, permit 38,000 young children to die each day and a comparable number to be crippled for life, the vast majority from causes for which we have long since discovered low-cost cures or preventions. And we cannot escape the fact that improving these conditions is now well within human reach.

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But it is quite possible that the human race may, at any time now, blow itself up with the 60,000 nuclear weapons which it has made. There is much less public awareness that it also faces the breakdown of its ecosphere. Just as our bodies are complex and balanced organisms in which all the parts relate to the harmonious functioning of the whole, so is the planetary ecosphere. And just as the body has its organic disturbances, causing disease, followed often by recovery, so the planetary organism has had its period of disease, for example, the end of the dinosaur age, followed by recovery.

During the past century the ecosphere has experienced a completely new kind of disturbance, which could prove terminal during the next century. This disturbance has been caused by humans and so humans must act now if the planet is to be saved from ecological collapse. "Nations have two choices: to carry on as they are doing and face by the turn of the century an environmental catastrophe ... or begin now in earnest a co-operative effort to use the world's resources fairly and equitably," declared Dr. Mostafa Tolba, the Director of the United Nations' Environmental Programme (UNEP) in 1982.

The planetary super problem is the combined threat of nuclear blow up and ecological breakdown. The two threats are inter-related. The Thorsson Report to the United Nations of 1981 on Disarmament and Development concluded that: "The world is at a cross-roads. It can either pursue the arms race or it can move towards a more sustainable international economic and political order. It cannot do both."

The world's population, which was about 1,700 million in 1900, reached 5,000 million in 1987. According to United Nations projections, it will reach 6,500 million by the year 2000 and stabilize at around 10 billion by about the middle of the 21st century. ("Stabilisation" is regarded as a general life expectancy of about 80 years and a fertility rate of replacement level – two children a couple). The global birth-rate began to decline in the 1970s.

At present a quarter of the world's population live in the developing countries, where in general "basic needs," as defined by the International Labour Organization (ILO), are not met and, in particular, 1.5 billion people are "marginalised," living in abject poverty, one billion with worms in their bodies. By the year 2050 90% of the world's population, 8.5 billion people, will be living in the developing countries.

The industrialised countries today consume 80% of the world's resources, possess 80% of its income, eat 50% of its food, produce 90% of its manufactures and do 95% of its research. Two billion people in the developing countries have no access to electricity and use wood for heating and cooking. Nearly 2 billion lack clean water and over 2 billion have no adequate sanitation -the two biggest causes of disease, apart from malnutrition. There is also a communications gap -and communicating is vital to development.

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The United Nations' Universal Declaration of Human Rights of 1948 proclaims the right of everyone to a standard of life adequate for the full development of the human personality (Articles 25 and 26). At present some 3.5 billion people, including significant minorities in the industrialised countries, lack this standard. And within two generations the figure will be much higher unless current policies change.

If everyone is to have an adequate diet (defined as 2,500 calories for men, 2,000 for women and 1,500 for old people and children in any climate), then the world's present population's food consumption must increase by 30%. This means that by the end of the century, world food production must increase by 70% and by the year 2050, by 330% . Expert opinion is uncertain if this can be done. Land available for food production can probably only be increased by about 15%. The world's food supply, therefore, depends essentially on increasing yields by about 250%. Drawing on the resources of modern science, this involves:

1. Increasing the use of nitrogen fertilizers by 460% which, in turn, involves using 500 million tons of oil equivalent energy - 10% of the total current world consumption of energy. But chemical fertilizers in excessive amounts can cause infertility for which there is no remedial treatment; and will the energy supplies be available?
2. Destroying pests, but many of the pesticides currently used poison the soil and contaminate the food chain; .
3. Providing irrigation; but currently built large dams, in Egypt, Brazil, China and elsewhere, are producing critical ecological hazards;
4. Producing improved crop strains; but genetic breeding is presently reducing the genetic basis of major food crops to a dangerously narrow level.

The permanent effects of the Green Revolution, which now affects a third of the world's cropland, are uncertain.

The race to the turn of the century requires us all, in words of the song, to "accentuate the positive" and "eliminate the negative." It is the theme tune for "Global Co-operation for a Better World" and the terms of reference for the World Commission for Environment and Development which, under the Chairmanship of Norway's Prime Minister, Mrs. Brundtland, reported to the United Nations in 1987.

The report - which forms the basis of this lecture - is not a technical side-issue of concern only to ecologists and development specialists. Some of the Commission's most powerful testimony concerns growing threats to security and living standards: threats imposed by environmental degradation spilling over beyond borders and by unregulated competition for environmental resources that should be part of the common heritage of mankind. At a time when multilateralism has come under attack from a number of short-sighted governments, the Brundtland Report provided timely and irresistible evidence of the reckless folly of any weakening of international law and of global institutions.

In spreading its message of global environmental and economic interdependence, the Commission had no more eloquent witness than the events which unfolded as it worked. It began its work in 1985 against the background of the enveloping crisis of famine and drought across Africa, arid concluded it in the after math of the Chernobyl disaster. And on the very day, last October, that Gro Brundtland, Rajiv Gandhi, Robert Mugabe and others were presenting the Report to the UN General Assembly, with a powerful plea to governments to recognize the essential oneness of humanity, there was the Wall Street crash, a few hundred yards away, sending shock waves around the world's financial markets.

The past decade has seen three commission reports - the Brandt Commission, the Palme Commission and the Brundtland Commission. It is no coincidence that the three Commissions' Reports are entitled respectively: Common Crisis, Common Security and Our Common Future. They deal with ostensibly different subjects - economics, security and environment but all three address the fundamental truth that economic, security and environmental problems cannot be handled solely within the confines of the national state but, effectively, only through multilateral action - common action.

Where the Brundtland Commission makes an original and positive contribution is: by bringing into public consciousness the notion of "sustainable development;" by providing a clear thesis about the link between poverty and environmental stress; by offering a positive vision of environmentally sustainable growth; and by establishing a powerful rationale for multilateral co-operation based on growing environmental interdependence.

"Sustainable development" is defined as development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs. At present, major and irreversible changes are being made to our environment: the loss of large numbers of living species mainly as a result of the clearance of tropical forests; the accumulation of nuclear waste with a radioactive life of hundreds of thousands of years; man-made climatic change and rises in the sea level are some of them. Subsequent generations will have to live with these legacies of detrimental change. They have no choice in the matter; we are making the choices now. Yet our economic decision making processes do not adequately accommodate the interests of future generations. Businessmen in capitalist economies and bureaucrats in centrally planned economies make decisions within an essentially short or medium term time frame. Even development agencies like the World Bank discount the long term future so heavily that what happens in 30 or 50 years, let alone beyond, has little bearing on their cost-benefit calculations. Nor does law meet the failures of economics. Legal systems, national and international, do not look to the protection of the rights of future generations.

As one of the Commission members, Sir Shridath Ramphal, told a UNA conference recently, "the hope for sustainable development rests on societies having a sense of responsibility beyond self and beyond today. Such a philosophy of sustainable development is not a novelty in human development. It was clearly reflected in the sophisticated terracing and irrigation systems of civilizations thousands of years ago and in the way forest dwellers and desert nomads learnt to co-exist with their natural

environment. In our contemporary societies there is, of course, a sense of heritage, or inherited culture; and when a much loved well known species of animal is threatened with extinction - pandas, whales, elephants - there is, even in the most materialistic of societies, a deep sense of concern.”

The consequences of this free-wheeling economic culture are potentially disastrous; some are already becoming apparent. Take a simple and topical example: Panama and its canal. One of the greatest engineering achievements of mankind is in grave danger of being undermined because of short-sighted felling of forests in the upper headwaters of the rivers which feed into the canal. Less rain water is flowing into the rivers and their capacity to flush out the canal is being reduced. It is slowly but surely silting up. Nor is there a permanent gain from forest felling. After a dozen years or so, the cleared areas are of no further use for agriculture or ranching and are reverting to scrub. Yet that story is not today’s news about Panama. Similar examples abound.

Within rich industrialised societies, the concept of sustainable development is generally being assimilated into popular thinking and even into government policy. In Britain, the resistance to dumping nuclear waste and nuclear power expansion, to urban motorway expansion and encroachment on green belts reflects, obviously the self-interest of those threatened but it reflects, also, a deeper feeling for environmental values. The problem, however, is much more difficult in the poorest countries where it is poverty itself that seems to compel a short-term time horizon and the neglect of sustainability considerations. Poor people very often destroy their own future not because they are ignorant or thoughtless but to survive. In economists’ jargon, they have a high rate of “time discount.” Just as poor and hungry people eat next year’s seed corn to stay alive, so they over-exploit thin soils, over-graze fragile grasslands and cut down disappearing forest stocks for firewood. Seen in the context of the short-term needs of an individual, each decision is rational; seen in a long-term and wider context, the effects are disastrous.

Deforestation, desertification and soil erosion, the growing number of the hungry and destitute are a measure of just how disastrous are the consequences. Each year another 6 million hectares of productive dry land turns into worthless desert. Over three decades, this would amount to an area as large as Saudi Arabia. More than 11 million hectares of forest are destroyed yearly; over three decades, this would equal an area about the size of India. And, beyond all that, soil erosion destroys 20 million hectares of agricultural land every year. Some of the loss is due to commercial development; but most is due to short-term pressures exerted by growing numbers of poor people.

While poverty is, therefore, a major source of environmental stress, poverty itself cannot be separated from questions of inequality within and between countries. Environmental problems originate in the patterns of consumption of the rich no less - and often more - than in the struggle for survival of the poor. In industrial countries - of East and West - there are many major unresolved environmental problems: acid rain and other industrial pollution; the growing use of chemicals in agriculture; maritime and river dumping of waste; the risk and costs of fossil fuel and nuclear energy expansion. These countries have had more time and resources to clean up the environment than in the developing world. But they have, also, in order to satisfy their needs, already drawn down much of the world’s ecological capital. They account for only a quarter of the world’s population but consume 80% of the world’s commercial energy and metals, 85% of its paper and over half the fat intake of foods. Inequalities in consumption and in the use of resources; poverty; environmental destruction: these are the main ingredients of the amalgam the Commission calls unsustainable development.

It would be easy for the Commission to lapse into despair, given the mounting catalogue of environmental disasters and given the projections showing the world’s population doubling, or more, in the next half-century and the world economy growing at an exponential rate. I felt this on two occasions earlier this year - in Ethiopia and in Tibet. The world is not short of prophets of doom. But I am not one of them. I believe that rapid economic growth is not merely feasible but absolutely necessary if hundreds of millions are to escape the poverty trap. How else; when on present needs will be super imposed those of a vast additional population, perhaps an eventual doubling of the current world population if not more - with 90% of the growth occurring in developing countries and 90% of the total increase occurring in urban settlements? Developing countries, taken as a whole, have no option but to seek to grow by at least 5% a year - far faster than in the 1980s so far - if they are to

escape the poverty trap: Growth of this nature would of course mean a rapidly expanding world economy. And technological change, combined with better and more equitable forms of social organization, does provide the means dramatically to improve living standards and also to ease environmental pressures.

The Brundtland Commission does not have an over-idealised, uncritical view of technology, which can so obviously be a force for evil as well as for good. We had the Bhopal and other industrial disasters as evidence of technology going badly astray. But we had memory too of India's green revolution. Within the last few months have come encouraging reports from Sudan and Ghana of successful field trials on new strains of sorghum and millet which could revolutionize African, rain-fed agriculture. Other ideas are more simple - water filtration devices or energy-saving domestic cooking equipment - which can transform the productivity and reduce the drudgery of the life of rural women.

Of course there are limits; and these necessitate careful management of resources - management designed to ensure fair distribution, as well as effective conservations. An example is water. Global water use doubled between 1940 and 1980 and may double again by 2000. Yet 80 countries with 40% of the world's population already suffer serious water shortages. For many millions - especially poor rural women - life is a daily struggle to obtain adequate supplies. Yet the means exist to locate large untapped resources of water - through remote sensing - and also to reduce run off and improve storage. It is usually the poverty of individuals, or countries, which stands in the way of meeting those needs; or the reluctance of those that have an abundance to share. The limits are more social and political than physical or technological.

Many of these social and political limits have to be tackled at a national level. It is the national governments of developing countries which face the most awesome responsibilities. Environmental policies there will fail and become discredited unless they are integrated into an overall strategy for combating mass poverty. Such strategies will be all the more difficult when there are rapidly rising populations and material expectations; and when the world economy is undermining domestic efforts through depressed commodity prices, unmanageable debt burdens, dwindling financial flows and protectionist trade policies.

There are no short-cuts; population policies, for example, must respect individual choice, contribute to raising the status of women and operate in parallel with measures to raise child lifespan, literacy and living standards.

Nor can national frontiers offer any protection. One country's cheap electricity is paid for elsewhere in polluted air and acid rain; unchecked desertification in one place manifests itself in a tide of refugees somewhere else; one community's ample diet of fish is at the expense of another's protein deficiency if stocks are being fished out; what is seen from a creditor's standpoint as an admirably sound policy of exporting natural resources to pay foreign debts is seen by the debtor nation as a reckless squandering of real capital.

It is these considerations which led the Brundtland Commission to call for a global order transcending competing national and sectional interests and where there has to be a balance of growth, equity and conservation objectives. It arises especially in respect of the so-called "commons;" the oceans, including the seabed, Antarctica and space. These are all the world's resources which no individual or nation owns. They should properly be regarded as the common heritage of mankind and present trends are in that direction. But management has evolved on an ad hoc basis and has tended to be dominated by countries whose wealth or advanced technology has given them a head start.

There are, for example, a substantial number of fisheries agreements and conventions on deep-sea waste disposal which, somewhat precariously, endeavour to maintain ecological balance in the oceans in the face of growing demands on them. The UNEP Regional Seas Programme is a crucial element in bringing order to the world's seas and the UN's Law of the Sea Convention has created a legal basis by which maritime states can defend offshore resources; but small and weak states still remain vulnerable to predatory fishing and waste dumping. And a major unresolved problem relates to the ocean sea-bed, where the failure of the present American including British Administrations to sign the Convention and

of a number of industrialised countries to ratify it has left a large hole in the evolving system of management of the global commons.

The Antarctica Treaty is a somewhat happier story - at least in terms of conservationist objectives; but there is growing restiveness among developing countries - reflected in debates in the General Assembly - that a self-elected group of strong countries should presume to have the right to manage a continent on behalf of the rest of mankind. While we would not normally regard the empty wastes of space as a global resource, there is a growing awareness of the potential for beneficial use. But these are huge problems which only the UN system with its universal membership can satisfactorily resolve.

We have been reminded of some of them in recent years: acid rain; drifting clouds of nuclear fallout; river and sea spillages of poisonous chemicals or radioactive waste. We are becoming aware of others, even more profound in their impact: possible climatic change and sea-level rise resulting from carbon dioxide and other "greenhouse gas" build up in the atmosphere; the probable damage to the ozone layer inflicted by chemicals; the long-term regional and possibly global effects of deforestation: Forest clearance is eliminating - for ever - a substantial part of our biological inheritance and stocks of species which could be a great value to humanity. We know of indigenous forest dwellers whose whole existence is threatened.

Perhaps the most serious of the global limits to sustainable development concerns the atmosphere. In relation to acid rain and the ozone layer there has been welcome, if belated, international co-operation. In particular, we must all welcome the successful conclusion of the talks in Montreal under UNEP auspices on the protection of the ozone layer, including agreement to cut production of the offending chemicals. Already some leading chemical companies are ceasing production of chlorofluorocarbons in response to this agreement: others must be pressed to do so.

The fact that progress is being made in this area should not blind us to the lack of progress on another problem on which scientific evidence is mounting but is currently circumstantial: the contribution of carbon dioxide emissions from fossil fuel burning to climatic change and, specifically, to global warming. Even the most modest predictions of rising sea levels could bring death and destruction to millions living on low lying land - as in the Ganges estuary where people have been driven by need to live too close to the margin of safety. Some states - such as the Maldives Islands - could disappear from the world's maps if sea levels were to rise even a little. The whole pattern of world agriculture and settlement could be changed by manmade climatic change; perhaps in Africa we see the first spasm of that change. This issue must be taken beyond the realms of scientific seminars into the centre of policy-making.

Atmospheric pollution is a manifestation of international economic and ecological interdependence. But there is another dimension. Our nations are increasingly woven together by trade and capital movements so that growth, or economic shocks, in one part of the world have profound implications for development and the environment, elsewhere. The debt crisis is an example. Both in the major commercially-indebted countries of Latin America and the "debt-distressed" low-income countries of Africa living standards have been compressed to ensure that import demand is reduced and export surpluses are created to service debt. The resultant poverty has increased environmental stress in urban slums and on marginal land in rural areas. Environmental damage is caused not only by domestic factors but as a by-product of the malfunctioning of our world economic system.

As I saw earlier this year in the Horn of Africa, there is already a downward spiral of environment degradation, growing poverty and military conflict. The ultimate catastrophe, of course, would be nuclear conflict as a result of which the world's environment could be destroyed for all; not just the combatants. As Ramphal recently reminded us, "The co-existence of substantial military spending with unmet human needs has long evoked concern. President Eisenhower, for example, observed at the end of his term in office that every gun that is fired, every warship launched, every rocket fired signifies, in the final sense, a theft from those who hunger and are not fed, those who are cold and are not clothed. The world in arms is not spending money alone. It is spending the sweat of its labourers, the genius of its scientists, the hopes of its children."

Yet, global military spending in 1986 was in excess of a trillion dollars. This was more than the total income of the poorest half of humanity. At the same time, there is a paucity of resources available for monitoring global climatic change, for surveying the ecosystems of disappearing rainforests and spreading deserts and for developing agricultural technologies appropriate to rain-fed, tropical agriculture. However, the influence of this culture of arms is not confined to industrialised nations. It is present, also, in the developing world, fostered both by the conditioned reflex of many governments to seek security through acquisition of arms and in some cases (like those in the front line against apartheid), by the dire need to do so and by a burgeoning world arms trade which positively encourages military spending. We know well enough that the absence of war is not peace.

The United Nations system was called into existence precisely in order to provide multilateral solutions to shared problems: economic, security and environmental. There is, in the environment field, already a substantial body of international agreements and law which can be built upon. The United Nations has exercised leadership in this field since the 1972 Environmental Conference in Stockholm and the establishment of UNEP. There is now, as a priority objective, the need for the UN to adopt sustainable development as a central goal of the United Nations system itself, under the leadership of the Secretary-General; for a strengthening of UNEP; and for the preparation of a universal Declaration on Environmental Protection and Sustainable Development which can provide a new legal framework for environmental and resource management disputes.

There are some glimpses of hope. Even as we meet, the world is changing; and neither super-power is immune to the resonances of change. They know, as well as the rest of us, that our planet is becoming more and more a human neighbourhood: a neighbourhood that holds no sanctuaries: a neighbourhood in which no shelter insulates anyone from disaster, from poverty, from terrorism, from cultural penetration, from environmental collapse. The Russians know they need disarmament, the Americans are discovering that they need a new Bretton Woods. We might be closer to 1945 than we have ever been in the post-war era.

Perhaps nothing in these developments is more important than the sea-change in Soviet policy towards international security and the United Nations. Michael Gorbachev's article in Pravda on "The Reality and Guarantees of a Secure World" – arguing that we should look to a "future where security of all is a token of security for everyone" and that "a comprehensive system of security is the first plan for a possible new organization of life in our common planetary home" is enormously encouraging. That the Soviet Union should have paid its arrears on peace-keeping to the UN suggests that all this is more than the old rhetoric of "peace."

Inexorably, we are moving into the kind of truly interdependent world where "spheres of influence" Brezhnev-style will be wholly unacceptable: not merely because repugnant to sovereignty but because anachronistic in a global milieu in which, increasingly, everywhere is everyone's sphere of interest. Who can doubt that we shall have to redefine sovereignty itself in the twenty-first century in terms more compatible with our maturity as a human society and more conformable to its insistence on the norms of a civilised state.

It will require Global Co-operation for a Better World - the title of a worldwide campaign launched last month under the sponsorship of both Dr. Arvanitis and me.

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The Right Honourable Lord **David Ennals** was educated in the U.K. and the U.S.A. He has held ministerial posts in the Home Office, the Foreign Office, and the Ministries of Defence, Health and Social Security. During the late 1970s he was member of the British Cabinet and became a member of the House of Lords in 1983. He is presently the Chairman of the UN Association of the UK, the Ockelden Venture for refugees, the National Association for Mental Health, the Parliamentary Food and Health Forum, the Children's Medical Charity, and the Asian Committee of the British Refugee Council, and President of the College of Occupational Therapy and the National Society of Non-Smokers.