

foreword

THE INAUGURAL ANNUAL JACK BEALE LECTURE on the Global Environment was held on 11 February 1999 at The University of New South Wales. We are grateful to the Honorable Dr Jack Beale AO, an alumnus of UNSW, for providing the inspiration and financial support to establish this lecture series. The aim of the series is to provide the opportunity to examine Australia's environmental responsibilities, opportunities and performance within the global context, as well as to set environmental science and technology work within the broad international socio-political and economic spheres.

We were privileged to have this first lecture delivered by the Honourable Maurice F Strong PC OC LLD from Canada on the topic "Towards a Sustainable Civilization?". As well as playing a leading role in industry and technology, Maurice Strong has been a leader in the international move towards better environmental management and sustainability since 1970. This is best demonstrated by his roles as Secretary General of both the 1972 United Nations Conference on the Human Environment and the 1992 United Nations Conference on Environment and Development (the Earth Summit) in Rio de Janeiro - the two largest and most significant environment events to date.

His currently Chairman of the Earth Council and other recent roles include Under Secretary General and Special Adviser to the Secretary General of the United Nations, Foundation Director of the World Economic Forum and Chairman of the Technology Development Corporation.

Past positions include: founding Executive Director of the United Nations Environment Programme, Member of the World Commission on Environment and Development, Chairman of the World Resources Institute, Chairman and Chief Executive Officer of Ontario Hydro, Senior Adviser to the President of the World Bank, and Executive Coordinator for United Nations Reform. Mr Strong has received many awards for his environment work including honorary doctorates from 41 Universities.

In the introduction to his lecture Maurice Strong pays tribute to Jack Beale's significant contributions to environmental management both within Australia and internationally. He recalls that his first meeting with Jack was in the lead-up to the 1972 UN Conference on the Human Environment in Stockholm, which Jack attended as the first Minister for the Environment in Australia (in the NSW Government). It is most fitting that 28 years later Maurice Strong should deliver the inaugural Jack Beale Lecture on the Global Environment.

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Director

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towards a sustainable civilization

IT IS INDEED A PRIVILEGE to be here today to deliver the inaugural Jack Beale Lecture on the Global Environment. I am proud to pay tribute to Jack Beale for the significant contribution he has made, and continues to make, to the environmental movement, both within Australia and internationally.

I first encountered Jack in 1971 during the build-up to the 1972 UN Conference on the Human Environment - the Stockholm Conference. He was Australia's first Environment Minister - at the state level at that, and had only been sworn in a month before my first visit with him. Considering the novelty of the situation in which he found himself, he was one of the most enthusiastic and proactive supporters of the 1972 conference.

Jack exhibited remarkable knowledge of resource and environmental problems and solutions. Indeed, before becoming the first Environment Minister of New South Wales, he had served as NSW Minister for Conservation, and had worked internationally as a consulting engineer for 20 years. As Minister for Conservation, he initiated advanced legislation in air and noise pollution, waste disposal, water conservation, and national parks and wildlife. Most impressive was his new State Pollution Control Commission, which was later renamed the Environment Protection Authority.

I left Australia buoyed by the enthusiasm, knowledge, experience and convictions of Jack Beale. He assured me he had the full support of the NSW Government in ensuring a strong Australian delegation to the Stockholm Conference. He also was the driving force in the Commonwealth decision to play a leading role in Stockholm, and encouraged 12 other countries to support and attend the conference. Thanks to Jack's tenacity, Australia made substantial contributions in both ideas and material support to the Stockholm Conference.

After the 1972 UN Conference on the Human Environment, Jack continued to be a leader in Australia's environmental movement, helping to establish comprehensive environmental control systems for the whole of the Australian continent by the end of 1973. During this period, He also contributed to the development of the United Nations Environment Programme of which I was the first Executive Director. Jack continued to work as a Senior Adviser to UNEP, and worked with countries like Thailand, the Philippines, Venezuela, and Sri Lanka to establish environmental policies and legislation that would set the pattern for other developing countries to follow.

In 1980, Jack published his pioneering textbook "The Manager and the Environment". It was the first authoritative work on the general theory and practice of environmental management, and it is still an important reference for environmental managers and practitioners 18 years later.

Jack Beale has achieved outstanding success as an engineer, scientist, businessman, politician and generous benefactor. His achievements were

recognized by the International Biological Centre in Cambridge which listed him among the 2000 Outstanding People of the 20th Century for his contributions to humankind living in harmony with the environment and also among the 2000 Outstanding Scientists of the 20th Century, for his contributions to water resources and environmental sciences.

Jack at 81 years young, remains very active in the environmental movement today, both as a benefactor and businessman. For 45 years, he has served as Executive Chairman of the Water Research Foundation of Australia, and has recently designed and built a network of small-scale hydroelectric generating stations, thereby contributing to a reduction in damaging greenhouse gases.

On 9 February 1999, the Premier of New South Wales the Honorable Bob Carr, a graduate of this great University, officially opened the hydroelectricity station, owned by Power Facilities Pty Limited, which is located at Burrendong Dam.

The huge multipurpose water storage, built on the Macquarie River, provides water for towns and cities, stock, irrigation and industry in the dry inland. Also there are special environmental releases for the downstream internationally significant Macquarie Marshes. The Premier noted that this great work was completed 30 years ago under the direction of the then Minister for Conservation. Who? No surprise, Jack Beale, a graduate of this university.

In my opinion, few have contributed as much to the global environmental movement as Jack Beale. His pioneering efforts have improved the lives of hundreds of millions around the world. It is a great honour to be asked here to examine Australia's environmental responsibilities, opportunities and performance within the global context by delivering the inaugural lecture honouring Jack's contribution "Towards A Sustainable Civilization".

Australia is unique on our globe. It is an island. It is the only island constituting an entire continent. As an island that has been isolated from the other continents for tens of millions of years, it is home to a huge assemblage of plants and animals found nowhere else on earth. What is perhaps most remarkable is that Australia is diverse in its uniqueness. From coral reefs to tropical forest to desert, Australia contains a diversity of ecosystems and is rich in mineral and biological resources. This endowment makes it an environmental super-power, and it also bestows on Australia an important responsibility as the dominant actor in the environmentally sensitive South Pacific.

Australia's importance to the global environment does not only stem from its unique ecological endowment. It also has a unique social and cultural



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heritage deriving from both its European and Aboriginal heritage. Both cultures attach high importance to the land and its resources, but for very different reasons. David Malouf, in his recent Boyer Lecture Series, notes that for Australia's Aborigines, land is the foundation of the spiritual being. For the Europeans who arrived at Botany Bay in the late 1700s, land was

the foundation of wealth. Historically, these two philosophies have been regarded as mutually incompatible... but they don't have to be. Sustainable development is about making these seemingly incompatible philosophies one and the same. Sustainable development is recognition that we depend on the land for our livelihood, but over-exploitation of the land will lead to our own demise. This is true not only within nations, but also across international boundaries, and it is within this context that I would like to discuss the importance of the international institutions we have created over the last half century, and their importance to achieving a sustainable civilization in the next millennium.

IT IS NOW 27 YEARS since representatives of 113 nations assembled in Stockholm in June 1972 for the inauguration of the United Nations Conference on the Human Environment. Stockholm was the beginning of "a new journey of hope". Despite some political divisions at the Conference, it succeeded in broadening the concept of environment to include developing country concerns for the environmental impacts of poverty and underdevelopment and the intrinsic linkages between environment and development. Following intensive negotiations throughout the night and preceding the final day of the Conference, agreement was reached on an historic statement of principles, the Stockholm Declaration, and a plan of action to give effect to them.

Before Stockholm only a few countries, primarily in the industrial world, had environmental ministries or agencies. Following, and as a direct result of the Stockholm conference, most governments established environmental ministries or agencies and developed policies and legislation to deal with environmental matters. In December 1972, in approving the report of the conference, the United Nations General Assembly established the United Nations Environment Programme as the international organization with principal responsibility for following up and implementing the agreements reached at Stockholm.

Despite progress in many areas following the Stockholm Conference, it became evident by the mid-1980s that, overall, the environment was still deteriorating and the population and economic growth largely responsible for this was continuing. In response, the United Nations General Assembly established a World Commission for Environment and Development under the chairmanship of Norway's Gro Harlem Brundtland. Its report "Our Common Future" made the case for sustainable development as the only viable pathway to a secure and hopeful future for the human community. Its recommendations provided an important input to the decision by the UN General Assembly in December 1989 to hold the UN Conference on Environment and Development. To underscore the importance of this Conference, it was decided that it should be held at the summit level and it is now known universally as the "Earth Summit".

As an event itself, Rio was clearly remarkable, indeed historic. Never before had so many of the world's political leaders come together in one place, and the fact that they came to consider the urgent question of our planet's future put these issues under an enormous international spotlight. This was helped by the presence at Rio, both in the conference itself and the accompanying "Global Forum", of an unprecedented number of people and organizations

representing every sector of civil society, and more than double the number of media representatives than had ever covered a world conference.

This "people-pressure" helped to move governments to agree on a set of principles, the Declaration of Rio, and a comprehensive programme of action to give effect to these principles, Agenda 21.

The Earth Summit produced agreement on two historic framework conventions, one on Climate Change and the other on Biodiversity which have since come into effect. It also launched the negotiating process which has led to agreement on a Convention on Desertification, an issue of special importance to many developing countries, particularly in the arid regions of Sub-Saharan Africa.

Despite shortcomings, the agreements reached at Rio represent the most comprehensive programme ever agreed by government for the shaping of the human future. And the fact that they were agreed by virtually all of the governments of the world, most of them represented by their head of government, gives them a high degree of political authority. But, as we have seen, it does not ensure their implementation. This will depend on what governments and others do to follow up and give concrete effect to the decisions taken at Rio.

So far, the record is mixed. There have been many positive achievements which demonstrate that the transition to sustainable development called for at Rio is possible. In his recent book, "A Moment on the Earth" environmental journalist Gregg Easterbrook strikes a responsive cord in many when he makes the case for environmental optimism. Certainly he is correct in citing the advances made in the United States and other industrialized countries in reducing air and water pollution levels, in effecting significant improvements in waste disposal and pollution control technologies and the growing movement towards recycling and greater efficiency in the use of energy and materials. But these positive examples still fall short of what is required to effect the fundamental change of course required to ensure a sustainable future for the human community.

To some degree this is understandable. Fundamental change does not come quickly or easily and the seven years that have elapsed since the Earth Summit, and even the twenty-seven years that have passed since the Stockholm conference, are too short to have expected such change to have occurred. Nevertheless, we cannot afford to be complacent in light of evidence that we continue along a pathway that is not sustainable while the driving forces of population growth in developing countries and unsustainable patterns of production and consumption in industrialized countries persist.

Today, I would like to take a fresh look at the changes that have occurred since Stockholm and Rio and how they impact on the policies and actions through which we seek to achieve a sustainable mode of life on our planet as we move into the twenty-first century. The forces that are shaping our future are complex and diverse and do not lend themselves to simplistic analysis or solutions. But there are three major factors which I believe need to be highlighted. They are:

1. The resurgence of growth in the global economy and movement of the primary locus of growth to the rapidly developing countries of Asia and Latin

America. As this growth is based largely on the pattern set by the more mature industrialized countries, it is producing acute environmental problems and undermining the sustainability of national development in these countries while contributing increasingly to global environmental risks.

2. The severalfold increase in private investment in developing countries which is now some six times greater than Official Development Assistance. This has given rise to a growing dichotomy between the more rapidly developing countries for which ODA is becoming relatively less important and the least developed countries, particularly those of Sub-Saharan Africa, which continue to be heavily dependent on ODA.

3. Increasing evidence that traditional government and management models based largely on individual sectors and disciplines are inadequate for the management of a complex and systemic cause and effect system on which a successful transition to sustainable development depends.

Today's "world order" is much different from that which prevailed at the time of the Stockholm Conference in 1972. There is a fundamental shift in North - South relations occurring that could have an even greater effect on the geo-political landscape and the prospects for international cooperation than the end of the Cold War. The line between the traditional have- and have-not nations is blurring as a result of the economic progress being made by some developing countries. There has also been a movement towards democratization of the political process in some key countries of Latin America and Asia and the emergence of a multi-racial democracy in South

Africa. The more rapidly developing countries of Asia and Latin America were, until the recent crisis, leading the revitalization of the global economy, challenging its domination by the traditional industrialized countries and re-shaping the geo-political landscape. The World Bank forecasts that by the year 2020 nine of the fifteen largest economies in the world will be developing countries. In terms of the aggregate size of their economies they will be displacing some of the more mature industrialized countries while still

lagging well behind them in per capita terms. They will account for more than half of the world's GNP and of course, they already constitute a majority of the world's population - some 75 per cent and still growing.

As their development accelerates, developing countries are contributing more and more to the larger global risks such as those of climate change, ozone depletion, degradation of biological resources, and loss or deterioration of arable lands. China has already become the second largest source of CO₂ emissions and will almost certainly succeed the United States to the dubious honour of becoming number one. The prospect of a massive increase in Third World energy consumption over the next 30 years boldly underlines a point I have been making since before the Earth Summit: it is the industrialized world that must reduce its environmental impact in order to "leave space" for developing countries to meet their own needs and aspirations. There is now overwhelming evidence that the industrialized world cannot continue in its historical patterns of production and consumption.

Neither can developing countries be denied the right to grow. Nor can they



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be expected to respond to exhortations to reduce their population growth and adopt stringent environmental controls from those whose patterns of production and consumption have largely given rise to global risks like climate change. This means recognizing the special responsibilities of the traditional industrialized countries to ensure developing countries the access to the capital and technologies they require for their transition to sustainable development and to cooperate fully in measures to protect the planet's future.

Developing countries serve as custodians of most of the biological resources on which the sustainability and well-being of the world community depends. They provide products and services that are necessary to the continued integrity and sustainability of the Earth's resource and life-support systems. This is particularly true of the great tropical forests of South and Central America, Africa and Asia which contain most of the world's biodiversity. But the indispensable services they provide have always been taken for granted and treated as free goods. We must now begin to place an economic value on them if we are to expect developing countries to maintain them largely for the benefit of the rest of the world.

With the continuing trend of reductions in Official Development Assistance we must be much more innovative in motivating private capital - now the principal source of financial flows to developing countries - to contribute more to sustainable development. This is particularly true as more and more developing countries move to privatization in such key sectors as water, waste disposal, electric power and transport. And the very scale and intensity of the sustainable development challenge requires a heavy reliance on technological solutions for which the private sector is the primary vehicle. At the same time, the systemic nature of sustainable development requires a much greater degree of cooperation both amongst key industry actors and financial institutions and between them and governments.

While there has been a significant increase in the awareness of these issues since the Earth Summit, and in large part because of it, this is still evidenced far more at the level of rhetoric than of concrete action. So while more and more leaders in industry and government are talking of change, overall the powerful forces of inertia continue to propel us along a pathway that is unsustainable.

The good news is that technology has played a crucial role in providing more goods to more people and can still help us find ways to use renewable and non-renewable natural resources more efficiently. The evidence produced at the Earth Summit, and confirmed by experience since then, makes it clear that "eco-efficiency"; that is, efficiency in the use of energy and materials as well as in the prevention, recycling and disposal of wastes, is the key to sustainability and long-term environmental protection. Eco-efficiency is a critical tool that will enable us to move along a pathway to a secure and sustainable future in the 21st century.

As sustainability issues are fundamentally rooted in living within the means of nature to sustain our populations and their economies, measures of sustainability are crucial in addressing how much nature we have and how much we need. We are learning about more innovative ways to evolve beyond purely economic measures to assess sustainability. Let me share one with you that brings home the imperative for the recovery of economic value

from waste streams and efficient management of natural resources. It is a tool called the "ecological footprint". The concept of ecological footprint calculations is based on two simple facts: first, we can keep track of most of the resources we consume and many of the wastes we generate; second, most of the resources and waste flows can be converted to a biologically productive area necessary to provide these functions.

Let me give you an example that is close to home: According to current ecological footprint analysis, Australia has a per capita footprint of 9 hectares. That means it takes 9 hectares of biologically productive space to support the average Australian's lifestyle. However, on a global basis, only 2 hectares are available per world citizen. This means that Australia is consuming four and a half times its available global share. This is clearly an untenable situation especially when considered within the context of the evidence produced at the Earth Summit, in Chapter 4 of Agenda 21, which points out, "... the major cause of the continued deterioration of the global environment is the unsustainable pattern of consumption and production, particularly in developed countries".

Progress on this front can only be achieved by changing the way that business operates, and by changing individual behaviour and consumption patterns. On the part of business, this challenge is being met by organizations such as the World Business Council for Sustainable Development, which in its landmark report to Rio "Changing Course", called for a major transformation of our industrial civilization based on eco-efficiency, and more recently, it published "By-Product Synergy: A Strategy for Sustainable Development", which presents many useful case studies. The Swiss industrialist, Stephan Schmidheiny, and his colleagues have produced a follow-up "Financing Change" which I commend to you as another seminal contribution to the process of implementing eco-efficiency through the financial markets.

Essentially, to move towards the goal of a closed industrial eco-system, the industrial economy and society as a whole must become more cyclical. The challenge is in scale, moving from good but isolated examples to an interconnected industrial system that as a whole consumes resources sustainably and produces a minimal amount of waste.

More and more businesses are realizing the opportunities that exist for increasing value while simultaneously reducing the ecological impact of one's activities and the use of resources. Indeed, the experience of industrialized countries has demonstrated that environmental improvement and efficiency in the use of energy and resources is fully compatible with, and indeed contributes to, good economic performance. The Japanese and the Germans, perhaps more than any others, have realized that the next generation of economic and industrial opportunity will be environment driven.

A recent report commissioned by the Earth Council estimated that at least 700 billion dollars is being spent by governments each year to subsidize practices which undermine sustainability in four sectors - water, energy, agriculture, and transport. It is estimated that developing countries alone subsidize their energy sector by an amount approximately double the total foreign aid they receive. This is not to say that all subsidies should be removed, but rather that they need to be reviewed and reoriented to provide

incentives for sustainable behaviour by corporations and people.

Economic instruments can make an important contribution to effecting transfers of new resources to developing countries to enable them to maintain and develop on a sustainable basis the resources and ecosystems which are of value to the world community as a whole. Climate change is a case in point. The cost of reducing carbon dioxide emissions, or of offsetting them through absorption in forested areas, will often be much less in developing countries than in more developed countries. This differential produces an economic benefit that can be shared between the party which meets in this way its obligations for reducing carbon dioxide emissions and the entity which provides the offsets that enables them to do this. While such instruments must be used with care to avoid abuse and inequities, they offer one of the most promising prospects for channeling new funds to developing countries.

The old maxim that "knowledge is power" is now being accompanied by the realization that "knowledge is money" and therefore a primary economic resource. The growing drive to convert knowledge into proprietary intellectual property could tend to reduce the total stock of knowledge and restrict access to the products of research and development for those who do not have the means to purchase it. This could especially disadvantage those, particularly in developing countries, whose needs are greatest. Yet it is in our common interest to ensure that they have access to the best state-of-the-art technologies and techniques so that in the course of their own development they do not add unnecessarily to the pressures on the earth's environment and resources. Here again the private sector is the principal vehicle for technology cooperation and transfer but their role must be facilitated by supportive policies on the part of government and financial assistance to developing countries.

Recent experience in which the collapse of some of the most dynamic economies of Asia rapidly developed into a crisis threatening the entire global economy, dramatically brought home to us that the benefits of globalization are accompanied by a new generation of perils. It is made clear that no individual nation, however powerful, can insulate its people against these perils or manage them alone. As ecologists have long reminded us, the forces through which our actions have their ultimate impacts are systemic in nature and must be managed systemically if we are to develop the secure and sustainable way of life on our planet which must be our principal goal as we move into the new millennium.

No nation can manage this system alone, neither can any of the main issues that affect the quality of life and sustainability of the human community, access to food and water, managing the pressures for migration, protecting the environment, meeting social needs, ensuring employment and livelihoods, and of course, maintaining peace and security - be managed in isolation. The principal message of the Earth Summit was that we must make the transition to a new global partnership in which all share equitably the benefits as well as the risks. As Rio made clear, this requires new dimensions of cooperation amongst the nations and peoples of our planet, and most of all a new basis for relationships between the rich, industrialized countries and the developing world.

Multi-lateral organizations and particularly the United Nations and its specialized agencies, including the World Bank and the International Monetary Fund, provide the basic international framework for development of the cooperative arrangements and mobilization of resources required to support developing countries in their transition to sustainable development. Australia can be proud that one of its most distinguished native sons, Jim Wolfensohn, who was with me at Stockholm, is taking the lead in this process.



But the profound shift in the geopolitical landscape that we are experiencing is not yet reflected in the multi-lateral organizations. Developing countries already have a clear majority in the UN General Assembly and other UN fora. But only one "southern" country, China, is included in the five permanent members of the Security Council - the most powerful and influential organ of the UN. Efforts to bring about changes in this increasingly anachronistic situation have thus far failed, but if it is not reformed to reflect more fully current geopolitical realities, it will risk erosion of its influence and effectiveness. Similarly, changes will need to be made in the weighted voting structures of the World Bank and IMF.

The multilateral organizations are clearly not yet prepared for the new generation of tasks that will be required of them. Collectively, these institutions represent an immense reservoir of experience and expertise, which is an invaluable and irreplaceable asset to the world community. Yet paradoxically, although the need for effective multilateral institutions has never been greater, support for them, both political and financial, is less than it has been in any time since their creation. Individually many of these organizations are weak and in need of reform. They need a fundamental re-structuring of their mandates and relationships with each other so that they can operate as a system in carrying out the particular functions allocated to them. And new arrangements must be put in place to provide for the effective participation of business and civil society which are becoming more and more important actors in respect of such issues.

The experience of Secretary General Kofi Annan in launching the most extensive and far-reaching programme of reform of the United Nations since its inception demonstrates the difficulties of effecting the kind of reforms that are needed to achieve this. While governments accepted, and most applauded the reforms he undertook on his own authority as Secretary General, they have been reluctant to undertake the more radical and fundamental reforms that he recommended which only governments can do. The resistance of the World Bank board to the far-reaching changes intended by Jim Wolfensohn at the World Bank is further evidence of the reluctance of governments to support major reform of the multi-lateral institutions. But the recent calls for reform of the IMF and the World Bank demonstrate that the political will for change can emerge when events point up the need for it. It

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is to be hoped that it will not take a major crisis for the world community to undertake the processes of change that will produce the sustainable system of institutions we require to ensure sustainability of our civilization.

There is very limited understanding, and much misunderstanding, about the nature of international organizations. They are not governments but the servants of governments and lack the basic attributes which governments possess. In democratic societies local, state and national governments are elected directly by the people and are accountable to them. They have taxing power and borrowing power to raise the revenues and capital required to perform the functions their people have mandated them to undertake. National governments have their own military establishments.

The United Nations has none of these attributes. It was created by national governments which comprise its membership, provide and control its finances, and determine what functions and activities it undertakes. It has no access to taxing power, borrowing or to other sources of revenue independent of governments. Private funding, notably the one billion dollars recently committed by media tycoon, Ted Turner, to establish the UN Foundation is helpful, but cannot and should not replace governmental funding. The UN has no military forces or capacity of its own to carry out missions mandated by the Security Council or to enforce its decisions. The UN has no direct relationship with the people of its member countries despite the fact that the preamble to the United Nations Charter begins with "We, the people ..." Because member governments frequently lag, and in some cases fail entirely, to provide the funding and military support required to carry out the decisions that they have taken, the UN becomes a scapegoat for the failures and inaction of governments.

Governance of societies and of the world community as a whole will, I am persuaded, be the central issue of the 21st century. For to manage effectively the host of other issues on which human survival and well-being depend requires an effective system of governance. I am a firm believer in the principle of subsidiarity - that every function of governance should be carried out at the level closest to the people affected at which it can be carried out most effectively. The application of this principle would undoubtedly affect national governments most of all, for they will need to yield jurisdiction in respect of many issues to regional, state, and local governments that are better able to deal with them. At the same time, they will need to delegate more authority to international organizations in the increasing number of areas in which cooperation with other governments is necessary.

This does not mean that the nation state will fade away. It will continue to be the single strongest and most important level of governance and the indispensable link between various levels and sectors of national society with the institutions and the activities of the international community. Indeed, the phenomenon of globalization requires that nation states be strengthened if they are to realize the benefits and avoid the risks which globalization produces.

I am not one who believes that governments are about to go out of business and that the nation-state is on the way out, but they must shed some of their power. It is clear that after a long period in this century in which people have looked to their governments as the primary guarantor of

their security and well-being, we are now confronting the limits of government. Experience has demonstrated that governments are not well-equipped to provide directly many of the services which people need and are imposing severe limits on the extent to which governments can tax them or go further into debt.



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One consequence of this is the emergence of civil society as the main source of many of the programmes and services formerly provided by governments. Indeed, the most exciting and promising post-Rio developments are occurring outside of governments, through civil-society organizations. Just as the real leadership at Rio came from people, from non-governmental organizations and citizen groups, it is these people today who are taking the lead in the follow-up of Rio. The social philosopher Leslie Salmon has compared the surging importance of the non-governmental sector in the later part of this century with the emergence of strong nation-states in the 19th century.

The processes through which human activities produce their ultimate consequences transcend the traditional boundaries of nations, of sectors and disciplines. Thus the traumatic collapse of some of the most rapidly growing economies of Asia rapidly produced shock waves in the global economy. Emissions of greenhouse gases, whatever their source, contribute to changes in climate which affect everyone, and decisions taken to deal with economic and financial issues are the principal determinants of environmental and social conditions as well as impacting on peace and security.

Yet the institutions through which we seek to manage these processes do not function as a system, lacking the capacities, the support, the mandates and the linkages required to ensure effective management of the forces shaping our future.

World government is neither necessary nor feasible. But a viable world system of governance is absolutely indispensable if we are to avoid the risks and realize the benefits and opportunities of our technological civilization. It would be presumptuous of me to attempt to present here a master plan for the architecture of such a system. But let me suggest some of the key elements it must include:

- A new economic paradigm which integrates the disciplines of traditional economics with the new insights of ecological economics. A new "eco-nomics" or "ecos-nomics" which must provide the theoretical underpinnings for a system which incorporates into economic analyses, pricing and national accounts the real values of the environment and services which nature provides and fiscal and regulatory regimes which included positive incentives for achievement of economic, social and environmental sustainability and make markets an ally in doing this. It is, after all, through the management of our economic life that we express the values and shape the nature and qualities of our societies.

- A realignment of the mandates and functions of intergovernmental organizations based on the principles of subsidiarity with well-defined linkages amongst them so that they can consult and cooperate more systematically in dealing with issues involving the mandates and capacities of more

than one organization. In particular, this should include much closer relationships between the United Nations and the Bretton Woods organizations in respect of economic, financial and monetary issues which impact on the political, social and environmental fields for which the UN is the primary forum. Thus, the UN, World Bank and IMF would cooperate more effectively on issues of a global nature while establishing more effective mechanisms for consultation and cooperation with regional and sectoral organizations on issues for which they are the principal actors but which have a significant global dimension.

- Explicit provision for ensuring that the environmental and social impacts of economic and financial policies and decisions are taken into full account, especially at times of crisis when major long-term impacts can result from the response to short-term problems. This means that these issues should have a "place at the table" during the negotiating process.

- A series of regional economic, trade and security arrangements within a global framework provided by the UN which complement and support, rather than compete with, global arrangements.

- Establishment of an effective, international regime for surveillance and regulation of capital movements and the financial institutions through which they flow, providing for the kind of transparency essential to anticipate and prevent the kind of crises that arose so rapidly and unexpectedly in Asia. This could lead to the IMF evolving into a global, central bank as well as establishing the global equivalent of the US Security and Exchange Commission.

- More effective and systematic mechanisms for engagement of civil society - business and other non-governmental interest groups - in intergovernmental fora on issues in respect of which they are major actors, often the main actors. UN Secretary-General Annan's reform programme calls for the establishment of an "issue management system" based on a process developed in preparations for the 1992 Earth Summit. It brings together key actors - both governmental and non-governmental - to develop coordinated approaches to specific issues in which all have a role to play.

- More effective and systematic use of the immense capabilities technology provides for transparency, surveillance, analyses and early warning; to identify emerging issues, illuminate solutions and monitor performance. The building blocks for such a system already exist as, for example, the environmental information and monitoring system of "Earth Watch" managed by UNEP.

- An enforceable regime of international law. Again, the building blocks are in place in the many treaties and conventions that have been negotiated in recent years, largely through the UN. But there has so far been little progress towards providing for their effective enforcement.

- More reliable, consistent financing of international organizations and the agreed programmes they are mandated by their members to carry out is an essential pre-condition to their effective functioning and sustainability, especially in light of the additional functions they will be called upon to perform in the period ahead. The sad state of UN finances, largely as a result of failure of its largest member to meet its treaty obligation for payment of its

dues, is the most dramatic illustration of this. But most multi-lateral organizations are experiencing financial constraints. This is not all bad as it enforces a greater degree of discipline and cost-effectiveness in the management of these organizations. But when it seriously undermines the capacities and effectiveness of these organizations, as it is doing in many cases, it results in serious erosion of the capacity of the world community to manage the issues critical to its future. While governments have so far been unwilling to permit international organizations to reduce their dependence on them by more direct and automatic sources such as the Tobin tax, levies on use of "commons" areas, etc., such methods may ultimately be necessary.

☛ Finally, I am convinced that the international agenda must be re-cast and prioritized, particularly at the global level of which the UN agenda is the principal example. Not all issues need to be dealt with at the global level; and certainly not all deserve equal attention. One of the most promising means of doing this, I believe, would be for governments to agree on certain fundamental "boundary conditions" or limits which affect the environmental, security, economic, health and human rights conditions that are essential to the survival and basic well-being of our civilization. These boundary conditions would prescribe the priorities for the global agenda. These would include avoidance of nuclear and biological warfare, avoidance of serious damage to the Earth's environment and life-support systems, ensuring access to basic human rights, human security, democratic process and sustainable livelihoods. This would include a commitment to eradicate endemic poverty as a primary, global priority for the 21st century.

Many of the ingredients for the world system of governance, I am convinced, which must be put in place to ensure a sustainable future for the human community already exist, but the process of transforming them into a viable world system will be a difficult - some may say impossible - one to achieve, given the current state of political will. But history reminds us that what is not feasible today becomes inevitable tomorrow. Necessity drives change, and change is imperative if our civilization is to be sustainable in the new millennium.

I am convinced that prospects for the human future will be determined, perhaps decisively, by what we do, or fail to do in our generation. For we are literally trustees of our own future. As the environmental movement has evolved from Stockholm through the Law of the Sea, to the Brundtland Commission to the Earth Summit in Rio de Janeiro, we have enlarged the context in which we must view and deal with the challenge of protecting and improving the environment to embrace the complex system of relationships through which our economic aspirations and behaviour must be reconciled with our environmental and social goals. What we have come to call sustainable development provides the larger framework for achieving a positive synthesis between the social, economic and environmental dimensions of the development process. This is no mere passing phase, but a fundamental process of civilizational change which is essential if we are to move onto the pathway to a secure and sustainable future in the new millennium.

The sum total of the behaviour of individuals is the main source of human impact on the global environment of which the risks of climate change are a principal manifestation. People's behaviour is driven ultimately by their own principal values and priorities. The changes called for at the Earth Summit in Rio in 1992 were fundamental in nature and will not come quickly or easily. Individuals often believe that they can make little difference in the larger scheme of things. But they can. Indeed, without individual change there cannot be societal change.

One of my disappointments in the results of the Earth Summit was our inability to obtain an agreement on an Earth Charter to define a set of moral and ethical principles for the conduct of people and nations toward each other and the earth as the basis for achieving a sustainable way of life on our planet. Governments were simply not ready for it. But now the Earth Council has joined with many other organizations to undertake this piece of unfinished business from Rio through a global campaign designed to stimulate dialogue and enlist the contributions of people everywhere to formulation of a People's Earth Charter. Here in Australia, under the guidance of Brendan Mackey at the Australian National University, the process has evoked an encouraging response and I invite you all to participate. I have just come from the Australian Earth Charter National Forum in Canberra. No surprise, Jack Beale was there. I am pleased to report that Australia is mounting one of the most enthusiastic and effective national campaigns to establish an Earth Charter by the year 2002. The Australian campaign includes a school-based curriculum which is being sent to all Australian schools, as well as the selection of a youth drafting team to develop a national Youth Earth Charter Vision.

For in the final analysis the behaviour of individuals as well as the priorities of society respond not only to our narrow economic and security interests, as important as these are, but ultimately to the deepest moral, ethical and spiritual values of people. All our diligent work in devising new policies, new programmes, new international agreements and new structures to deal with the challenge of managing our future in the new millennium will remain but unfulfilled designs and aspirations unless we have the collective motivation to give them priority in our own lives and our political agenda. This means lending support to existing measures and the fulfillment of agreements and commitments already in place as well as the development of new initiatives. We must raise our motivations beyond the individual and national interest which divide us to the broader common interest in a sustainable future which must guide us in the management of those activities which shape our common future.

I am persuaded that the 21st century will be decisive for the human species. For all the evidences of environmental degradation, social tension and inter-communal conflict have occurred at levels of population and human activity that are a great deal less than they will be in the 21st Century. The risks we face in common from the mounting dangers to the environment, resource base and life support systems on which all life on earth depends are far greater as we move into the 21st century than the risks we face or have faced in our conflicts with each other. All people and nations have in the past been willing to accord highest priority to the

measures required for their own security. We must give the same kind of priority to civilizational security. This will take a major shift in the current political mind-set. Necessity will compel such a shift eventually; the question is can we really afford the costs and risks of waiting.

