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WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT 

United Nations Research Institute for Social Development (UNRISD)
and
University of Witwatersrand

In Quest of Sustainable Development

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Draft paper prepared for the conference on:
**The Political Economy of Sustainable Development:
Environmental Conflict, Participation and Movements**

Friday, 30 August 2002
University of Witwatersrand, Johannesburg

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Abbreviations and Acronyms

BBC	British Broadcasting Company
CFCs	Chlorofluorocarbons
CIS	Commonwealth of Independent States
CSD	United Nations Commission on Sustainable Development
CSER	Corporate Social and Environmental Responsibility
FSC	Forest Stewardship Council
GDP	Gross domestic product
GNP	Gross national product
HDI	Human Development Index
ICTs	Information and communication technologies
IFIs	International financial institutions
IIED	International Institute for Environment and Development
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
ISO	International Standardization Organization
ITSs	International Trade Secretariats
IUCN	World Conservation Union
NGOs	Non-governmental organizations
ODS	Ozone-depleting substances
OECD	Organisation for Economic Co-operation and Development
PPP	Purchasing power parity
SA	Social Accountability
SIFs	Social investment funds
TNCs	Transnational corporations
TRIPS	Trade-related aspects of intellectual property rights
UNCED	United Nations Conference on Environment and Development
UNCTAD	United Nations Conference on Trade and Development
UNCTC	United Nations Centre on Transnational Corporations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNRISD	United Nations Research Institute for Social Development
US	United States
USA	United States of America
USSR	Union of Former Soviet Socialist Republics
WCED	World Commission on Environment and Development
WRI	World Resources Institute
WRM	World Rainforest Movement
WSSD	World Summit on Sustainable Development
WTO	World Trade Organization
WWF	World Wide Fund For Nature

Abstract

World leaders met in Johannesburg in late August 2002 to review progress in implementing outputs of the United Nations Conference on Environment and Development in Rio de Janeiro a decade earlier. They were also asked by the United Nations General Assembly "to reinvigorate global commitments to sustainable development". The 2002 World Summit on Sustainable Development (WSSD), however, faced a seemingly impossible task.

In order to be endorsed by UNCED as an overarching global goal, the term "sustainable development" had to be sufficiently ambiguous to accommodate many widely differing interpretations. Participants had conflicting interests, divergent perceptions, unique historical and environmental contexts as well as often incommensurable values. The Johannesburg Summit provided an opportunity to highlight several of the conflictive political economy issues behind recent unsustainable processes. This paper attempts to contribute to debates about possible policies to ameliorate them by a brief review of research into the social dynamics of environmental change.

Contradictory trends

Several worrisome global environmental trends have been well documented and widely publicized. Greenhouse gas emissions from human activities continue to accumulate in the atmosphere contributing to unwanted climate change. Biodiversity necessary for maintaining Earth's life support system is being eroded at unprecedented rates. The world's remaining tropical forests are rapidly shrinking. Soil erosion threatens to degrade much needed agricultural land. Marine and coastal ecosystems are being degraded and ocean fisheries are endangered. Fresh water stress threatens livelihoods in many regions. This listing of environmental woes could be endlessly extended.

Optimists can cite several apparent more positive global trends. Depletion of the atmospheric ozone level has been vastly slowed. Metropolitan air and water pollution have been slowed or reversed in several high-income countries. Environmental gains by rich countries, however, have been accompanied by increased environmental degradation in poor ones. Unsustainable patterns of production-consumption and of waste disposal in rich countries are driving environmental damage and social polarization in poor ones as their impacts are transmitted through trade, finance, various forms of compulsion and a host of other mechanisms.

Recent global environmental and socioeconomic trends have been mixed, but in many respects threatening for the kind of sustainable development envisioned by the Brundtland Commission and the Earth Summit. Global post-1950 economic growth (as conventionally measured) slowed significantly after the 1970s. This fall was most pronounced for low- and middle-income countries of Africa and Latin America. This was partially offset in global averages by continued rapid growth in low-income East Asian countries with large populations such as China.

Of more concern for sustainable development than rates of GDP growth, however, is the quality of growth. Modern production-consumption patterns appear to be increasingly non-sustainable both socially and environmentally. The rate of global population growth has been slowing and world population was projected to stabilize at about 9 or 10 billion people by the end of the twenty-first century. But increasing per capita production and waste is threatening life supporting natural ecosystems everywhere.

According to most estimates, income inequalities between rich and poor increased during the 1990s both within countries and among them. Different criteria, indicators and time periods for estimates of income can lead to contradictory conclusions. For example, by using

"purchasing power parity" (PPP) estimates of income and weighting countries according to their populations, it is possible to manipulate the data to suggest lessening global inequalities. PPP dollars, however, have to assume price relationships similar to those prevailing in the United States for poor countries with very different resource-endowments and socioeconomic structures. If PPP dollars were really a good all-purpose estimate of incomes, then the foreign debt burden of low-income countries could be reduced by over three fourths, and of middle-income countries by over one half, merely by recalculating them in terms of PPP dollars.

In reality, the implications for sustainable development are minimal, whether national and international statistical indicators show marginal improvements or deterioration of income inequalities and rates of poverty. There are always some losers and some beneficiaries accompanying "development" and "globalization" processes. Many social indicators such as life expectancy and literacy rates have improved on average, but this conceals many situations in which they have worsened. Low-income losers seldom receive adequate compensation to maintain their livelihoods even where overall gains for their societies may be much greater than losses.

Macro-level environmental and socioeconomic indicators, trends and comparisons can be useful for some purposes such as calling public attention to problems that seem to have been neglected but rather successfully dealt with in other contexts. For example, levels of health, nutrition and education of the poor are much higher in some poor countries such as Sri Lanka and Cuba than they are in other countries with much higher average per capita incomes. For other purposes such as proposing effective policy reforms to address such problems, they tend to be poor guides. Policy analysis requires a holistic integrated approach that skilfully relates historical processes with interacting contexts at all levels. A major portion of this paper, therefore, is devoted to reviewing on the ground local case studies where contexts are most varied and subject to change.

Policies for sustainable development

Policies are purposeful courses of action towards perceived goals. They are inevitably conflictive. Moreover, their impacts tend to be ambiguous in dynamic systems. Their outcomes are influenced by many unforeseeable internal and external factors as well as the divergent intentions and interests of some of their supporters. Public policies ostensibly aimed at advancing sustainable development have had many positive impacts as well as frequent negative ones. Positive policy responses to projected environmental and socioeconomic degradation help explain why prophets of imminent gloom and doom have often been mistaken.

Local-level democratic decentralization has been incorporated as a goal of sustainable development. At the same time, global concentration of technological, military, financial and political power has been rapidly increasing by most criteria. This contradiction is supposedly overcome by implementation of subsidiarity principles whereby decisions and resources are ascribed to the lowest (most decentralized) level possible. What these levels are in practice, however, leaves room for infinite debate and conflict. Moreover, decentralization, in the absence of reforms in national and international policies and institutions accompanied by a redistribution of resources, can be counterproductive.

There is a widely held perception that nation states have lost their capacity to influence their societies and that they are all subordinate to impersonal transnational forces such as world financial markets. This is a distorted view. Subordinate states, dependencies and colonies never had the possibility of determining their own development strategies. Now all the world's strong nation states are enmeshed in a world system, which could not survive without their active military, technological and political support. They are not going to tolerate

possibly system-threatening deviations by subordinate countries or among themselves any more easily than they have done in the past.

Recent efforts to build partnerships for sustainable development between United Nations organizations, large TNCs, governments and some NGOs should not be expected to make much of an impact. A few big TNCs now control much of the world's financial resources and its capacity to produce new modern technologies essential for the state's political-military power. They largely influence policy and ideological agendas everywhere through their control of mass media but they are helpless without the military and political protection of a few powerful nation states such as the United States, those of the European Union and Japan.

Powerful corporations now claim to be able to bring about sustainable development through their exercise of "corporate responsibility" and observance of a "triple bottom line", integrating the goals of monetary profits with those of promoting social well-being and environmental protection. This is nonsense in the present world order. It would have to imply public laws, institutions, regulations, accounting practices, tax structures, subsidies etc. that would all support sustainable development goals. Popularly based democratic social forces would have to be dominant or crucially influential everywhere. Such a vision is considered utopian by most observers. It certainly would not resemble "capitalism" as we know it.

So, what could be done at Johannesburg to advance sustainable development? Probably not much, given the current international context. Advocates of a better world, however, could try to advance a modest agenda that, if taken seriously, could have radical implications.

In the first place, WSSD could reaffirm the importance of agreeing on common goals but with differential responsibilities. There is a danger that social components of sustainable development will be eroded at the expense of what are commonly regarded to be ecological ones. Universal human rights, social justice with greater equality, poverty elimination, democratic popular participation for all, the quest for relatively autonomous national markets and development, the rights of countries to design and implement their own development strategies etc. are as much integral parts of sustainable development as are greenhouse gas abatement, access to cleaner air and water, preservation of biodiversity and the like. In any event, all these goals imply value judgements and political negotiations. Means of approaching them will have to differ widely in divergent contexts. There are no global recipes for action.

Democratic decentralized governance is essential, but it is no panacea. Great care must be taken when promoting decentralization in different contexts. How to advance towards this goal in a world of ever growing inequalities presents a major dilemma. Privatization of property rights as now practised usually leads to more concentration, not less. The distinction between "private" and "public" property and between "local", "national" and "cosmopolitan" identities are always extremely blurred and controversial. Emphasis on global problems but local solutions when promoting sustainable development can be counterproductive unless local governments are able to exercise the political power and mobilize the necessary resources required to redirect unsustainable processes negatively affecting them. This implies profound reforms nationally and internationally.

"Neoliberal" strategies with free trade are anathema for sustainable development in many contexts, although less so in others. In general, trade regulated not by popularly based governments but by institutions depending primarily for support on TNCs and other business interests will primarily benefit the rich at the expense of the poor and of the natural environment. Markets can make good servants but they are poor masters.

Reform of property rights to support sustainable development is a core issue. Property rights and obligations are about social relations in access to desired goals and services by different

social classes or groups. They largely determine the distribution of wealth, income and power. Land reforms granting real power to those who depend directly on land, water and associated natural resources for their livelihoods are essential in many contexts. So too are reforms of tax structures, social and environmental regulations, subsidies etc. all of which constitute part of the bundles of rights and obligations associated with property ownership or tenure. WSSD cannot do much about this except to call attention to the crucial need for the international community to be supportive of reforms in property rights that would contribute to sustainable development. Such reforms should lead to a more equitable distribution of land and other natural resources. They would also imply strict democratic regulation of TNCs in order to direct them towards these goals.

The biggest challenge facing WSSD is how to find and mobilize the social forces capable of bringing about needed policy and institutional reforms. This should be a major theme. Answers would have to vary widely from place to place and time to time. If they are to be effective they will have to include among others the poor and powerless and especially the propertyless working classes.

Chapter 1
Introduction

Nearly everyone endorses sustainable development. Who could possibly oppose it in public when it is defined to mean economic growth of a kind that can persist indefinitely into the unforeseeable future benefiting all humankind while respecting the limits to growth imposed by Planet Earth's non-expandable ecosystem?

According to several international reports, conventions, resolutions and declarations, sustainable development is supposed to promote equity between and within nations, to eliminate dire poverty, to encourage democratic participation together with observance of The Universal Declaration of Human Rights and to minimize destructive conflicts, while at the same time protecting and enhancing the natural environment for the use and enjoyment of present and unborn future generations. It embodies age-old aspirations for a just and prosperous world for all while recognizing that past and present development trends are not socially and ecologically sustainable.

The term "sustainable development" was widely adopted by mainstream development agencies following publication in 1987 of **Our Common Future** by the World Commission on Environment and Development (WCED), chaired by the then Prime Minister of Norway, Mrs Gro Harlem Brundtland. WCED used the term as a unifying theme in presenting its environmental and social concerns about worrisome trends toward accelerated environmental degradation and social polarization in the 1970s and 1980s. It stated that "sustainable development is development that meets the needs of the present without compromising the ability of future generations to their own needs...Even the narrow notion of physical sustainability implies a concern for social equity between generations, a concern that must be logically extended to equity within each generation" (WCED 1987: paragraphs 1 and 3 of chapter 2).

A. Aspirations, Ambiguities and Contradictions

Following publication of **Our Common Future**, several leading international development organizations have declared sustainable development to be their overarching goal, and explicitly acknowledged the tight interdependence of environmental and socioeconomic issues that have to be resolved in order for development to continue. Within the United Nations system, this close interdependency had already been emphasized by the 1972 Stockholm United Nations Conference on the Human Environment and the subsequent creation of the United Nations Environment Programme (UNEP).

Before the 1990s, however, the term sustainable development was not widely used to highlight the interrelationships between environmental protection, social equity and economic growth. Of the major international development organizations, the International Institute for Environment and Development (IIED) was one of the first to adopt the term in this integrated sense in the mid-1970s. The World Watch Institute and the World Conservation Union (IUCN) were also calling for sustainable development in the 1970s and 1980s. Their emphasis, however, was primarily on environmental protection. They tended to relegate serious discussion of how to

reconcile environmental goals with those of social justice, equity and economic growth to others (Barraclough 2001).

The 1992 Earth Summit

The United Nations Conference on Environment and Development (UNCED) was held in Rio de Janeiro, Brazil, in June 1992 after two years of intensive preparation. Heads of state, or senior government officials representing them, from 179 nations participated together with United Nations officials, scientists, civil society and local government representatives, business leaders and many others. The conference attempted to put sustainable development at the top of the international agenda for the coming twenty-first century. It produced five major documents towards this end.

The Rio Declaration on Environment and Development enunciated 27 principles dealing with nations' rights and responsibilities in pursuing sustainable development. Among other desiderata, it urged nations to adopt appropriate integrated policies and to cooperate internationally in pursuing economic growth, eradicating poverty, reducing disparities in living standards worldwide and promoting environmental protection. It asserted that all of these goals were prerequisites for approaching sustainable development. It affirmed the sovereign rights of nations to exploit their natural resources but without causing damage to others. Nations should take a precautionary approach in protecting the environment when serious or irreversible damage seemed likely to result from their activities even if scientific uncertainty still persisted. Nations should strive for consumption and production patterns that are socially and ecologically sustainable. Polluters should in principle bear the costs of pollution. Full participation of women, indigenous peoples and other social groups should be assured. Peace, development and environmental protection were declared to be interdependent and indivisible.

Agenda 21 was meant to be a programme of action for sustainable development worldwide extending into the twenty-first century. It attempted to provide a blueprint for action "by governments, United Nations organizations, development agencies, non-governmental organizations and independent sector groups, in every area in which human activity impacts on the environment". While lacking force of international law, WCED organizers hoped that adoption of its provisions would provide a strong moral obligation to ensure full implementation. Agenda 21's nearly 300 published pages are divided into 40 chapters grouped into four sections: (1) Social and Economic Dimensions; (2) Conservation and Management of Resources for Development; (3) Strengthening the Role of Major Groups; (4) Means of Implementation. Its preamble states that the proposals respect the Rio Declaration on Environment and Development. It cites worsening recent socioeconomic and environmental trends and calls for integration of concerns about the environment and development. A fully integrated approach, it asserted, could lead to "fulfilment of basic needs, improved living standards for all, better protected and managed ecosystems and a safer, more prosperous future" (United Nations 1993).

The Earth Summit also produced a "Statement of Principles on Forests", a "United Nations Framework Convention on Climate Change", and a "Convention on Biological Diversity". The statement on forests recognizes the importance for sustainable development of the conservation and management of forests. It is non-

binding and meant to be a guide for countries formulating forest strategies. The two conventions, however, were supposed to have the force of international law when ratified by the required number of countries.

The climate change framework convention recognized that human activities accompanying industrialization and population growth were releasing unprecedented (in recent geologic time) quantities of carbon dioxide and other greenhouse gases into the atmosphere. Part of the carbon dioxide and some other gases is removed by natural processes that deposit them in terrestrial and ocean "sinks", but a part accumulates in the atmosphere producing a "greenhouse effect". Human caused (anthropogenic) greenhouse gas emissions are contributing to climate change that could have serious negative impacts for present and future generations. The convention acknowledged that great uncertainties are involved. Invoking the "precautionary principle" of the Rio Declaration, the convention committed governments to take measures to stabilize greenhouse gas emissions and to ensure the functioning of natural processes that can help remove them from the atmosphere.

Also the convention recognized that developed countries account for a major portion of current greenhouse gas emissions and have generated an even higher proportion during the past century, although they only include about one fifth of the world's population. The convention commits them to take the lead in stabilizing emissions and in helping developing countries to do so as soon as possible through technological and financial aid.

The Convention on Biological Diversity follows a similar pattern. It recognizes that maintaining biological diversity is critical for human welfare, but that this diversity is being dangerously eroded by human activities. It commits countries to take appropriate measures to protect biodiversity.

Ambiguities and Contradictions

The five Earth Summit documents are remarkable in that most of the world's governments endorsed them. They acknowledged the serious threats to human societies posed by accelerating environmental degradation, growing socioeconomic inequities and destructive conflicts. They emphasized the close interrelationships among these processes and the need to devise integrated strategies to reverse unsustainable negative trends. Particularly notable was the adoption of the Framework Climate and Biodiversity Conventions. These were intended to become legally binding international treaties. They therefore tended to be less rhetorical and potentially more operational than the Rio Declaration and much of Agenda 21, although their legalistic language makes them rather inaccessible to lay readers.

Nearly all international declarations and plans of action, such as those emerging from the Earth Summit, are necessarily full of ambiguities and contradictions. In many ways, they resemble utopias designed by committees (Wolfe 1980). Several of the concerns, aspirations and pet programmes of all the participants are somewhere included while their phobias are carefully avoided. All the participants can return home to interpret sustainable development in a manner acceptable to their constituents. In fact, many governments and their principal support groups have little

desire to promote greater social equity, democratic participation or environmental protection if this costs them loss of crucial support by some affected groups.[1]

Agenda 21, for example, urges an integrated approach. It attempts to accomplish this in section one by dealing with social and economic issues such as international co-operation, trade, poverty, production-consumption patterns, population dynamics, health, human settlements and political processes. Then, in section 2, it seems to assume that these highly conflictive issues can be resolved in a harmonious manner. It devotes 12 chapters to management and conservation of resources such as the atmosphere, forests, land, biological diversity, oceans, fresh water, wastes etc. It proposes primarily technocratic measures that could bring about improvements in the management of resources. In section 3, it turns to the issues of participation and mobilizing political support. It devotes seven chapters to the importance of participation by women, youth, indigenous people, NGOs, local authorities, business enterprises, workers, scientists and farmers. The final eight chapters are devoted to means of implementation such as financing, technology transfer, education, training, research, international organizations and laws.

This falls short of being an integrated approach, however. All of these issues have to be integrated in policy arenas at all levels from local to national and global. It neglects the distribution of property rights, the huge divergences in power and resources, conflicts of interest and the incommensurable values among diverse participants. It also plays down the tremendous uncertainties surrounding any speculations concerning the future.

A unified approach would have to concentrate on conflicts, trade-offs, possible compromises and uncertainties at least as much as on assumed complementarities and allegedly "win-win" policies. Also, it would have to recognize that conservation policies no matter how well intentioned will inevitably produce losers as well as winners. If the losers are among the poor, sustainable development as defined by UNCED would require that they receive adequate compensation to maintain or improve their livelihoods. This seldom happens in practice. According to the polluter should pay principle enumerated in the Rio Declaration, the compensation should come from those promoting and benefiting from the development and environmental policies contributing to the losers' deepening poverty.

Conflicts and contradictions accompanying attempts by governments, international organizations and development agencies to implement some of the Earth Summit's

[1] The extreme malleability of the term sustainable development helps explain why it became so popular and widely used after the Earth Summit in 1992. In part this can also be explained by the international political climate. Following the collapse of the USSR, its state collectivist system was widely discredited. With the virtual end of the "Cold War", rich industrial powers became less concerned that growing inequities between rich and poor countries and between the rich and poor within countries would lead to political mobilizations weakening the capitalist dominated world system. Governing elites worried more about stimulating economic growth and less about growing inequalities. Moreover, problems of ecological degradation were becoming increasingly evident nearly everywhere. This stimulated important political mobilizations, mostly but not only in rich countries. This support of environmental protection tended to be led by urban middle-class professionals. Much of the explanation of the popularity of the term sustainable development, however, is its ambiguity. Its diverse advocates can interpret both development and sustainability to imply very different objectives, priorities and policies in practice (Barraclough 2001).

recommendations have been legion. The United States government's 2001 repudiation of the Kyoto Protocol on Climate Change (which it had signed but not ratified), and its implicit withdrawal from the Framework Convention on Climate Change (which it did ratify), is only one example among many.

In practice, sustainable development has been widely interpreted since Rio as meaning primarily environmental protection together with economic growth. Equity issues usually receive only minor attention. There is a great deal of rhetoric about poverty reduction and aiding vulnerable groups. Poverty reduction, however, is commonly assumed to result principally as a by-product of economic expansion. Agenda 21's imperative to reform production-consumption patterns to make them more compatible with equity and conservation goals, especially in high-income countries, has for the most part received only lip service.

B. The World Summit on Sustainable Development (WSSD)

A report by the United Nations Commission on Sustainable Development (CSD) on progress made five years after WCED was incorporated into a United Nations General Assembly resolution in 1997. It noted a number of positive achievements but expressed deep concern "that the overall trends with respect to sustainable development are worse today than they were in 1992". The same resolution called for a comprehensive review of Agenda 21 in the year 2002.

In late 2000, the General Assembly decided "to organize the 10-year review of progress achieved in the implementation of the outcome of the United Nations Conference on Environment and Development in 2002 at the summit level to reinvigorate the global commitment to sustainable development". It accepted South Africa's offer to host this "World Summit on Sustainable Development" in Johannesburg. The same resolution said that the Summit, including the review process, should ensure a balance between economic development, social development and environmental protection as these are interdependent and mutually reinforcing components of sustainable development". It invited "relevant agencies and bodies of the United Nations . . . to participate fully in the review . . .".

Balancing economic development, social development and environmental protection anywhere is a big challenge. This is the case even when dealing with relatively homogeneous societies and geographic regions in which there is broad agreement about what these terms imply. The World Summit on Sustainable Development, however, has to deal with the whole planet's environmental and cultural diversity. It is partitioned among some 200 far from equal nation states each claiming sovereignty over its inhabitants and natural resources. Obviously, crude national quantitative indicators of interacting socioeconomic and environmental processes cannot by themselves shed much light on sustainable development issues. In-depth case studies in particular historical contexts focusing on interacting socioeconomic and environmental systems are required to gain insights into the social origins and impacts of ongoing socioeconomic and environmental processes. The roles of relevant social groups, policies and institutions have to be better identified at local, sub-national, national and international levels in order for the Summit to suggest realistic approaches to more sustainable development.

UNRISD commissioned the present report as a contribution to discussions at the World Summit on Sustainable Development. Following this introductory chapter, chapter 2 reviews a few overall environmental and socioeconomic trends since the Earth Summit at Rio. This chapter also speculates about principal issues to be discussed at WSSD. The chapter is largely based on recent documents from international development and environmental organizations or agencies. Chapter 3 discusses several responses to ecological degradation and initiatives to reverse or ameliorate its impacts by selected social actors. Chapter 4 speculates about the principal options and dilemmas confronting local communities, national governments, international organizations and other social actors, and considers to what extent environmental, economic and social goals can be reconciled in different policy arenas.

Chapter 2
Overall Trends and Issues

There can be little dispute with the assertion that economic development, social development and environmental protection are interdependent and essential components of sustainable development. Recent trends, however, suggest that they are often far from being mutually reinforcing. Interrelationships among them are extremely complex and often highly contradictory. In the modern world, outcomes in particular sub-national, national and international contexts depend on interactions among diverse socioeconomic and ecological systems at all levels. How to make economic development, social development and environmental protection mutually supportive at local, national and global levels is the major challenge facing participants in the World Summit on Sustainable Development.

Economic development, social development and environmental degradation (or enhancement) are all social constructs. They are necessarily rather vague concepts as they imply normative values about what constitutes socioeconomic progress and environmental health. Different societies, and different social groups within them, interpret these concepts in somewhat divergent ways. This complicates the task of attempting to make them mutually supportive. Political processes are always central for conflict resolution. To the extent values of different social actors are incommensurable (that they cannot be reduced to a common monetary or some other scale) political negotiations to resolve conflicts become much more difficult.

As was seen above, United Nations conferences and declarations have reflected a broad international consensus about what some of these normative development and environmental goals should be. They suggest how progress (or lack of it) towards reaching them might be assessed, although they necessarily are worded vaguely enough to gloss over many disagreements. There has been little progress in reconciling these interdependent objectives of sustainable development in particular social and ecological contexts. Making them mutually reinforcing would require profound policy and institutional reforms at all levels. It would also imply major modifications in what the concept of economic development means in practice.

A quick review of international reports summarizing available data and analyses on social and economic development trends together with those on environmental degradation supports the 1997 UN General Assembly's pessimistic findings. In spite of some positive achievements, "overall trends with respect to sustainable development are worse today than they were in 1992" (United Nations 1997:para 4). In several rich developed countries there have been some improvements in environmental indicators such as urban air and water pollution, deforestation and exposure to hazardous wastes. These positive trends have accompanied rising average per capita incomes. In poor countries these same environmental indicators often show worsening trends. This has led to the hypothesis of an "environmental Kuznets curve". According to this theory, environmental conditions improve as per capita income rises following an initial deterioration during a country's transition from low to middle income status.

This hypothesis, however, fails to take into account the negative effects that rich country production-consumption patterns transmitted through their trade, financial and geopolitical policies can have on the global environment and on environmental degradation in developing countries. Ecologists have devised the concept of the "environmental footprint" to measure such negative impacts globally. The impacts of production and consumption in rich countries on the atmosphere, fresh water, ocean fisheries, forests, soils, coastal areas and the like outside their frontiers, as well as within them, have to be included when assessing environmental trends in a globalizing world. If this is done, the better environmental record of high-income countries than of poor ones seems to be something of an illusion.

Rich OECD countries, for example, are estimated to require on average over four times as much biologically productive area per person to support their consumption as do the mostly lower income countries not in the OECD. The difference between countries in sub-Saharan Africa and the United States or Canada jumps to over ten times. A large proportion of the "footprint" originating in rich countries is to be found in poorer ones. Developing countries are supplying the rich with many raw materials that are commonly produced in socially and environmentally destructive ways, while absorbing negative impacts of the pollution and waste generated at all stages from initial production in the south to final consumption in the north (WWF 2001).

A. Unsustainable Trends?

Overall environmental and socioeconomic trends by themselves can shed little light on the dynamics driving them or on what might be done to make development more sustainable. At best they provide warnings of dangers that must be confronted. An OECD report likens them to traffic lights (OECD 2001). Red lights predominate.

As the multiple social and environmental relationships and processes involved are interdependent, a systems approach is indicated for interpreting trends and for suggesting policy responses. Presumably this is why the World Resources Institute (WRI) together with UNDP, UNEP and the World Bank, have adopted an ecosystems framework in assessing environmental trends (WRI 2000). Their report rather arbitrarily subdivides our planet's global ecosystem into five major overlapping subsystems: agro-ecosystems, forest ecosystems, freshwater systems, grassland ecosystems and coastal ecosystems.

According to the indicators used in the report, the state of these five ecosystems is alarming and the trends are mostly negative. Significantly, the WRI report was entitled **People and Ecosystems: The Fraying Web of Life** (WRI 2000**)**. It remains ambiguous as to whether people are extraneous or intrinsic to the five major ecosystems being discussed. This, however, is crucial for determining whether policies to approach sustainable development can be principally ecosystem specific or have to be more global. One supposes from reading the text that they are both. In a "globalizing" world the impacts of human activities transcend these five ecosystems. They cannot escape, however, from being an integral component of the global ecosystem provided by the Earth's biosphere that includes all five. Under UNEP leadership these same international organizations plus several others launched in 2000 a "Millennium Ecosystems Assessment" to be completed in 2005 (UNEP 2001a). This should provide a better view of recent trends.

Environmental Degradation

There follows a brief summary of a few global and regional environmental trends since the 1992 Earth Summit. They support the UN General Assembly's conclusion that on the whole the situation is becoming worse (see UNEP 1999; WWF 2001; WRI 2000; OECD 2001; UNDP 2000; UNDP 2001).

Climate Change: The Intergovernmental Panel on Climate Change (IPCC) has concluded that increased concentrations in the atmosphere of carbon dioxide and other greenhouse gases since the advent of the industrial revolution have already resulted in significant global warming and increasing climatic instability. It believes that the average increase in temperature could amount to an unprecedented 1.5 to 6 degrees centigrade during the twenty-first century (a more recent report by climatologists predicts a probable rise of about 3 degrees [Wigley and Raper 2001]). This would be accompanied by a significant rise in sea level and more frequent extreme climatic disturbances. Some regions will receive more precipitations while others will suffer severe droughts and desertification. According to the IPCC, four fifths of the increase since the eighteenth century in atmospheric carbon dioxide and other greenhouse gases can be attributed to industrial activities using fossil fuels.

The trends in greenhouse gas emissions since UNCED in 1992 remain alarming. The OECD's reference scenario assumes that energy use would continue to increase until 2020, but at a diminishing rate in relation to GDP growth. It suggests a 33 per cent increase in total energy use in OECD countries in spite of a 20 per cent gain in energy use efficiency from 1980 to 2020. These OECD countries now account for over 50 per cent of total emissions of greenhouse gases. An increase in energy use of over 60 per cent is projected from non-OECD countries (about 36 per cent from "developing" countries and over 12 per cent from Eastern Europe and the former USSR). This would make them a major source of carbon dioxide emissions by 2020 (OECD 2001).

Unless new renewable sources of energy are used, or spectacular gains are made in efficiency, there would be a corresponding increase in total carbon dioxide emissions. Per capita emissions in OECD countries would remain many times higher than in developing ones. Moreover, even stabilizing greenhouse gas emissions at 1990 levels would not prevent further atmospheric accumulations. This would require a 50 per cent or more reduction in current emissions, which seems to be politically out of the question. The main message concerning climate change is the need for adaptation as it is already too late for prevention. Future change could possibly be attenuated by timely reductions in greenhouse gas emissions now, although systemic responses are highly uncertain.

Not all trends are as pessimistic as those concerning greenhouse gas emissions. Acid rain, for example, remains a serious problem, but in most developed and some developing countries considerable progress has been made in reducing the industrial emissions of sulphur and other chemicals that were causing it. Public regulation was primarily responsible for this reduction.

Protecting the ozone layer of the atmosphere is another example. Since the Montreal Protocol on reducing use of CFCs and other ozone-depleting chemicals, there has

been a very significant reduction in release of ozone-depleting substances (ODS) into the atmosphere. UNEP (1999) asserts that without the Protocol's effective implementation, concentrations of ODS (principally of CFCs) since 1986 would have been over five times higher than they are at present. Nonetheless, maximum extents of seasonal ozone holes over Antarctic and Arctic regions continue to expand. This is due principally to the long time these chemicals can remain active in the atmosphere. Assuming continued effective control, the ozone layer is not expected to recover before 2050 (box 1). There are also many complex interactions between climate change and the ozone layer that are not well understood as yet.

There are still great uncertainties about the magnitude and impacts of climate changes traceable to human activities, but the effects could potentially be devastating for ecosystems and human societies. Ocean circulation may be affected. For example, some scientists predict that global warming will be accompanied by serious cooling in northwestern Europe if the Gulf Stream's flow of warm water from the topics were to be interrupted.

Box 1
International efforts on reducing ozone depletion

In September 2000, satellite measurements revealed that the hole in the ozone layer over Antarctica has reached a record 28.3 million square kilometres (some one million more square kilometres that the previous record in 1998).

Under the 1987 Montreal Protocol, governments have agreed to phase out chemicals that destroy stratospheric ozone, which is essential for shielding humans, plants and animals from the damaging effects of harmful ultraviolet light. Scientists predict that the ozone layer will start to recover as a result of reduced CFC emissions, as long as the Protocol continues to remain in force.

The quantity of harmful ozone layer depleting gases released into the atmosphere by developed nations has reduced dramatically since 1987. In addition, developing countries (minor polluters in comparison) are committed to a freeze in the production and consumption of CFCs at 1995–1997 levels. In 2002, they will be required to freeze halons and methyl bromide, with continued reductions in all major ozone-depleting substances (ODSs) between 2003–2005.

However, ODSs remain in the atmosphere for decades. In addition, global climate change is thought to be affecting the ozone layer's healing process, an issue that remains to be addressed by the international community.

Source: UNEP 2001b.

Biodiversity: Current rates of biodiversity loss probably exceed those of any period of the Earth's history since the last "great extinction event" some 65 million years ago. That event spurred the extinction of countless species including the dinosaurs. It was followed by a proliferation of new species including the flourishing of mammals and eventually of Homo sapiens. Scientists can only speculate about the significance of current species extinctions. According to some estimates 25 per cent of the Earth's over 4,000 species of mammals, 11 per cent of its over 9,000 bird species and

numerous species of plants fungi, fish, insects, etc. are seriously endangered. Many have already disappeared (UNEP 1999).

UNCED's Convention on Biodiversity constituted an official recognition by most of the world's governments of the dangers to human societies posed by decreased biodiversity. Sceptics continue to belittle the potential harm caused by the loss of obscure species not directly useful to humans, many of which they consider to be pests. Out of some 300,000 estimated plant species, for example, only about 200 are widely used for the crops producing most of the food on which humans depend. Ecologists, developmental biologists and geneticists, however, point to the need to maintain complex ecosystems and as large a gene pool as possible to meet future contingencies. Some societies hold the preservation of all forms of life to be a fundamental social value and duty. For those holding this view, the maintenance of biodiversity is a goal in itself irrespective of utilitarian considerations.

Current biodiversity loss is primarily caused by human activities. Habitat loss, degradation and fragmentation, such as that resulting from tropical deforestation, are leading causes. Atmospheric, aquatic and terrestrial pollution, the introduction of harmful exogenous species, overexploitation of ecosystems such as ocean fisheries, human-induced climate change and several other processes are also contributors. The UNCED Convention on Biodiversity committed governments to devise and adopt precautionary strategies. As yet, however, biodiversity loss continues unabated in most countries and is probably accelerating globally.

Deforestation: Globally, forests have continued to be cleared for other uses, fragmented and badly degraded during the 1990s at about the same rate as in the 1980s before UNCED. Nearly one third of the Earth's land area is still considered forest. About half of these forests are in tropical regions and half in temperate or boreal ones. Most current net deforestation is taking place in tropical forests of developing countries. About 17 million hectares of tropical forests are being lost yearly amounting to an annual loss of the 0.9 per cent of remaining tropical forest area. There has been some net gain in forest areas and volumes in temperate zones during recent decades, but it amounts to less than one tenth of the estimated forest losses in tropical regions.

Deforestation is a principal proximate cause of biodiversity loss. It also contributes to climate change by releasing carbon dioxide and other greenhouse gases stored in forest trees, plants and soils. Forests play crucial roles in regulating local and regional climates through water absorption and transpiration, soil protection, photosynthesis and numerous other processes. Forests are home to unique indigenous cultures. They are principal sources of food, fuel and fibres by resident and neighbouring populations estimated to total over 200 million people. They also supply timber pulp and other forest products for the world's forest industries, making them a crucial component of industrial country consumption-production systems. Exports of forest products are an important source of foreign exchange for several developing countries, although seldom a sustainable one given widespread destructive management. Some governments have also found that protected forests can help attract tourists bringing foreign exchange to local and national economies.

Not all deforestation is undesirable. Much of the world's most productive farmlands and urban developments are located in once forested areas. But present trends towards rapid deforestation in tropical regions that are ill suited for other land uses are inimical for sustainable development.

The modifications of the Kyoto Protocol agreed to in the Bonn climate change conference in July 2001 permit countries to off-set some of their industrial carbon emissions against carbon estimated to be stored in forests and some agricultural areas. This was a politically astute compromise. Nearly all countries except for the United States (the world's biggest emitter of greenhouse gases) have now signed the Bonn Agreement. The science behind the compromise permitting generous credits for carbon storage in forest and agricultural "sinks", however, remains controversial. Several specialists warn that forest "sinks" can only make a small short-term contribution to reducing atmospheric carbon dioxide concentrations and that they are not long-term substitutes for cuts in industrial emissions (Read et al. 2001). Others are somewhat more optimistic at least concerning short- and medium-term prospects (Wofsy 2001; Pacala et al. 2001). Both agree that at best forest and agricultural carbon storage sinks can provide a little more time for new technologies reducing greenhouse gas emissions to be developed and widely applied.[2]

Farmland degradation: Serious soil erosion has affected over one third of the world's croplands during the past half century. Some eroded soils are deposited by wind and water in other agricultural areas enriching their productivity, but much is irrevocably lost for agriculture. Eroded soils become less productive and often have to be abandoned. Yields can frequently be maintained or increased by application of costly chemical fertilizers, but this remedy is usually not within reach of poor peasants. Because of high costs and other constraints, it is not always an option even for commercial farmers. Land degradation in arid, semi-arid and sub-humid areas results in desertification by definition. Salinization has negatively affected the productivity of much irrigated cropland. Many good agricultural areas are being lost to urban expansion and other land uses.

In spite of these negative trends, agricultural production globally has kept up with increasing effective demand. It has done this with almost no net increase in cultivated areas or in the relative prices of agricultural products in world markets. Much degraded land was taken out of crop production. This was compensated for in part by converting forest and grassland areas to cropland and by rehabilitating "wastelands" in many developing countries. At the same time, yields were increased, mostly on commercial farms, by more intensive use of modern inputs of fertilizers, herbicides, pesticides, improved seeds and the like. In developed countries, more intensive high external inputs accompanied modern farm practices. This accounted for most of the increases in agricultural production.

Many modern intensive farming practices are showing signs of reaching limits in several areas. Evidence of these limits has appeared recently with epidemics of "mad cow" and "foot-and-mouth" disease in Europe. Declining rates of land productivity growth have been noted more generally. But lower average rates of yield increase can

[2] Recent research suggests that accelerated plant growth is stimulated by increased moisture and higher atmospheric levels of carbon dioxide. This implies that plant growth in general and not merely forests may be important sinks to absorb at least part of increased carbon dioxide in the air (Lovett 2002).

also be attributed to slower growth of effective demand and decreasing public support for agricultural research and expansion. The dangers and uncertainties for future increases in agricultural production posed by land degradation, water shortages and over-intensive use of chemicals are real and should be taken very seriously. However, genetic engineering and other frontiers of biotechnology offer opportunities as well as dangers. There appears to be no imminent threat of global food supplies not keeping pace with growing effective demand accompanying rising average incomes and continued population growth.

Still, about a billion people, mostly in rural areas of developing countries, remain undernourished worldwide. Their hunger cannot be attributed principally to declining land productivity, although this is often a contributing factor. Inequitable social relations such as highly skewed distributions of property rights and public policies that adversely affect the poor usually provide more pertinent explanations of their hunger than can those of land degradation.

Fresh water: Shortages of fresh water are widely predicted to reach crisis dimensions in the near future. Already, one third of the world's population lives in countries suffering moderate or severe water stress (UNEP 1999). Fresh water consumption per capita doubled during the twentieth century and now exceeds replacement in several regions. About three fourths of present fresh water use is for irrigated agriculture, but urban and industrial demands are increasing more rapidly than are agricultural ones.

Global warming is exacerbating fresh water problems in many countries by changing both the geographic and seasonal distribution of rainfall. In some countries the seasonal availability of water coming from natural reservoirs provided by mountain glaciers and snowfields is already seriously affected (Postel 2001). Rivers and underground aquifers are becoming increasingly overexploited and polluted nearly everywhere. International conflicts over water rights are proliferating.

Nonetheless, there is no global shortage of fresh water. The major problems arise from its inequitable distribution in relation to needs, its careless wasteful use and the poor management of watersheds. The frequently announced imminent "fresh water crisis" illustrates clearly the key roles of social institutions and of public policies in determining the nature and impacts of this dimension of environmental degradation.

Marine and coastal ecosystems: Oceans cover about 70 per cent of our globe's surface. They also support a major part of the Earth's biodiversity (see box 2). Over one third of its six billion people are concentrated in coastal areas. A major portion now live in large coastal cities (UNEP 1999). Marine and coastal ecosystems are becoming increasingly polluted, overexploited and endangered (see boxes 3a and 3b).

The oceans include the world's major fisheries. Ocean fish catches increased from 50 million tons annually in the early 1950s to 97 million tons in 1995. Fish are a principal source of protein for one fifth of the world's population. Industrial high-technology fishing, however, has overexploited nearly two thirds of the world's marine fishing grounds causing fish populations in some of them to collapse. Industrial fishing has also ruined the livelihoods of countless artisanal fishing communities, mostly in low-income countries.

Box 2
Marine biodiversity

Over two thirds of the earth's surface is covered by oceans, and the marine realm is considerably more diverse than the terrestrial one. It contains thirty-one of the world's thirty-two animal phyla. In addition, scientists believe that the deep sea floor might contain as many as a million undiscovered species. Tropical coral reefs may be compared to rainforests* in terms of variety of species found within them. Marine ecosystems reveal a remarkable diversity of environments, and features not found on dry land such as fluid boundaries, three dimensionality and buoyancy. Among other unique products utilised by humans, the oceans are proving an exciting source of new anti-viral and anti-tumour medicine. But for these reasons, among others, they are still a largely open-access resource outside the jurisdiction of states. Whereas protected areas have existed on land for more than a century, there is no tradition of preserving marine ecosystems.

* **Rainforests**: The humid tropics in different parts of the world are the principal global repository of biodiversity. It has been estimated that over half the number of species on earth exist in rainforests.

Source: Blaikie and Jeanrenaud 1996.

It appears probable that current rates of fish capture cannot be increased much in spite of growing effective demand. If current careless management of ocean fisheries persist, they probably cannot even continue production at current levels. Fish and shellfish production from aquaculture expanded very rapidly in the 1990s. In part, marine fisheries can be supplemented by aquaculture, but this also poses many very difficult environmental and social problems.

Box 3a
The human and environmental costs of overfishing

Some traditional marine communities in India have perfected an understanding of the aquatic ecosystem and the fish harvesting artefacts appropriate to their task (catching enough fish to sustain a meagre livelihood). The tropical seas off Kerala are marked by the multitude of species that are widely dispersed in the commons, each relying on a complex prey-predator relationship for survival. Traditional fishing technologies evolved to suit the local environmental conditions. In particular this meant "passive" fishing techniques, which did not pursue shoals, therefore avoiding disturbing the natural milieu, and the use of nets designed exclusively for trapping a specific species (size) of fish.

Since 1947, fishing evolved from the subsistence occupation of a caste-bound community into a multi-faceted tool of development, with the potential to increase the fish harvest, improve the socioeconomic conditions of fisher folk, augment export earnings and generate new employment opportunities. However, the development model that was applied to Kerala had destructive effects, not only on the ecological resources of an area, but also on the social conditions of fisher folk.

Modernization introduced "active", capital-intensive and indiscriminate fishing. As these new methods were originally very profitable, it also meant a rapid increase in the numbers of people exploiting the coastal waters. The state supported the destruction of its coastline with attractive subsidies for the mechanization of the industry. These hardly ever went to genuine groups of fishermen, however, as local businessmen were quick to see the money now to be made from the trade.

Nearly all species of harvestable fish declined in this period and the industry as a whole began to show profit losses. This did not, however, prevent the continuation of over fishing, as the bigger trawlers continued to make money, and the others pinned their hopes on a bumper catch in the near future to wipe out their losses. Fish, which was once considered the poor person's protein in the state, became less available and more expensive for the local community.

The collective action of the fisher folk themselves finally alerted the government to the destructive effects of its development policy. However, it was not until 1989 that changes were made. Among other measures, a total trawling ban drawing the monsoon (July-August) was followed by large catches down the whole coast.

This is not the end of the struggle between human and marine livelihoods on the Kerala coast. At the beginning of the 21st century, the artisanal fishermen stand with an uncertain future ahead of them.

Source: Kurien 1991.

Box 3b
The social and ecological costs of the shrimp industry

During the last two decades, shrimp aquaculture has become a major sector of fish farming in terms of space occupied and of market value. Nonetheless, it makes only a very small contribution towards meeting human needs for food. And, although shrimp exports may contribute to short-term economic growth, little attention has been paid to the long-term negative environmental and social implications of the industry on the livelihoods of vulnerable groups in tropical regions.

Fish provide nearly a quarter of the worldwide consumption of animal protein and ocean stocks are declining. In comparison to commercial aquaculture such as shrimp farming, aquaculture to meet the food requirements of local populations has received little investment. A major portion of the shrimp industry caters to luxury demand (and is exported to Japan, the United States and western Europe), but it has been subsidized by international and national lending agencies citing food security as justification. Furthermore, the main areas of expanding aquaculture are in countries such as India and Bangladesh, with important parts of their populations in need of food.

Shrimp aquaculture is an inefficient way to produce food (both in terms of calories and protein); shrimp are fed fish derivatives to about three times their harvested weight and only about 17 per cent is converted into consumable flesh. Intensive shrimp farms are very prone to the propagation of pollution and disease, affecting local ecosystems and impacting on the health and well being of local people. Ponds can only be used for a maximum of 10 years before they become too polluted for production. The environment that is left behind inhibits the spontaneous regeneration of vegetation, making the area unusable for agriculture or other fishing activities.

Tropical coastal regions are among the most densely populated areas in the world. Shrimp farming deprives local people of their traditional access to land, water and other resources. Environmental and social effects extend far beyond the villages invaded by shrimp farms. In many ways these consequences are similar to what happened earlier with the expansion of other monocultures such as banana, cotton, cocoa, tea, coffee and sugar in developing countries. Although it has been argued that the industry creates jobs, labour costs take a miniscule proportion (7 per cent) of the investment needed. Workers are hired for the eight-month period of production, after which their contract ends.

Furthermore, any employment gains through the aquaculture industry must be balanced against loss of livelihood by other users of coastal resources. Local farmers, livestock holders, woodcutters, fuel wood gatherers and fisher folk are among those competing for resources. The effects spread beyond the immediate area used for shrimp production, and flooding of crops, the salinization and pollution of land and water and the destruction of mangrove swamps are all regular consequences of this industry.

Local people usually receive no compensation for lost resources and livelihoods. According to several case studies, social cohesion and security frequently diminish in villages penetrated by commercial shrimp farming. Outside ownership of shrimp farms, and the perception by villagers that traditional land rights have been violated, can lead to internal social divisions and theft. All these factors highlight shrimp aquaculture, like other monoculture expansions, as a telling example of the negative consequences of the unregulated impact of global markets and disparate consumer income on local populations, their environment and livelihoods.

Source: Barraclough and Finger-Stich 1996.

Overfishing, however, is only one of several negative trends affecting marine and coastal ecosystems. Industrial pollution, from coastal runoff or deposited from the atmosphere, is already seriously affecting plankton growth and other components of marine food chains. Coral reefs are dying at a rapid rate in many regions. Over-exploitation of ecosystems, pollution and changing water temperature seem to be major causes (UNEP 1999; Jackson et al. 2001).

The oceans are getting warmer due to the greenhouse effect (Barnett et al. 2001; Levitus et al. 2001). They have apparently absorbed much of the additional heat generated since excess greenhouse gases began to accumulate in the atmosphere. This has delayed the onset of atmospheric and terrestrial warming, but it is likely to make climate change more acute during the coming years. The Arctic ice sheet, for example, seems to have thinned by over one third in recent decades. This does not raise sea levels as the melted ice was floating on the Arctic seas. If the glaciers covering Greenland, Alaska and the Antarctic continent melt, however, sea levels would rise by several metres. It is no wonder that countries with extensive coastal lowlands, such as Holland, Bangladesh and many small island states, are particularly concerned about global warming. Not only would they confront rising sea levels, but also increasing violent coastal storms. The last El Niño events in the Pacific were particularly severe. There is some evidence that this was associated with climate change.

Environmental trends in urban settings: Over half of the world's more than 6 billion people now live in urban areas. In most industrial countries, urban populations exceed 80 per cent of their total populations. Moreover, the distinction between rural and urban lifestyles are becoming increasingly blurred in rich countries. Only a small proportion of their rural residents still depend primarily on agriculture for employment. In developing countries, urban populations are increasing much more rapidly than are rural ones. Most of their projected population increase will be in urban areas. On average, nearly two thirds of their populations are still rural with a high proportion engaged in some form of agriculture. But this conceals huge differences among countries and regions. About three quarters of all Latin American and Caribbean people reside in cities while in much of Asia and Africa the proportion is the reverse.

Most energy-intensive industrial production and consumption takes place in metropolitan areas. In many upper-income developing countries rural populations are decreasing in absolute numbers. This is mainly due to rapid rural to urban migration during their transitions from predominately agricultural production systems to urban-centred industrial and service economies. Most urban employment in many developing countries is found in unregulated "informal urban sectors" with precarious livelihoods.

Populations in urban areas to a large extent drive all the environmental degradation trends mentioned earlier. This is because energy-intensive production and consumption tend to be concentrated in cities. Industrial activities, dense populations and mercantile consumption with increasing quantities of "waste" give rise to a series of additional environmental problems in urban settings, especially in developing countries. Nearly a billion people live in shantytowns and slums. They lack access to adequate shelter, sanitary facilities, clean water and waste disposal. Air and water pollution are ubiquitous in the rapidly growing low-income urban neighbourhoods of developing countries. Their residents are exposed to toxic wastes and frequent natural disasters. Noise pollution and traffic congestion add to these woes.

There are many divergent situations. This makes it virtually impossible to provide accurate quantitative estimates of overall environmental trends in urban settings of

developing countries. There seems to be a general consensus, however, that they are predominately non-sustainable. Environmental conditions—polluted air, contaminated water, exposure to dangerous wastes and quality of life—are deteriorating for hundreds of millions of urban residents.

Economic and Social Development

We briefly review below recent overall economic and social trends based on easily accessible United Nations and World Bank data. Emphasis is placed, however, on conceptual and methodological problems in interpreting these data for analysis of sustainable development issues.

The multiple interdependent goals of sustainable economic and social development implied by United Nations Declarations, Conventions and Plans of Action were summarized in the Introduction. In practice, however, most development agencies, governments, business and financial institutions, non-governmental organizations and the mass media adopt a more simplistic view of what economic and social development imply. These terms are widely interpreted to mean catching up with the rich developed countries in production-consumption patterns and living standards. Pursuit of these ever moving targets dominate their development policies.

Economic growth trends as conventionally measured: In practice, economic development is commonly equated with technological modernization and the growth of output as indicated by gross domestic product (GDP) per capita.[3] Social development is widely assessed by social indicators of health, education, nutrition, gender relations and a few other dimensions of social well-being. These economic and social indicators can be very useful when carefully used and interpreted. If carelessly or tendentiously used, however, they can be extremely misleading for assessing sustainable development trends and issues.

Most economists dealing with development issues acknowledge the crucial importance of social goals such as the elimination of serious poverty, improved health and education and the provision of other public goods such as access to clean air and water and the preservation of peace and personal security. They recognize that economic development implies investments in "social capital" (the institutions regulating social relationships in production, consumption and other activities), "human capital" (the skills, knowledge, health and freedom of choice required for

[3] As conventionally measured, GDP attempts to estimate the monetary value at market prices of economic output destined for final consumption or investment. It is the sum of "values added" by rather arbitrarily defined economic sectors such as agriculture, industry, commerce, services etc. that comprise a national economy. GDP can be a very useful measure for many purposes. GDP estimates, however, can be very misleading indicators in the pursuit of sustainable development. According to neoclassical economic theory, market prices can be the best guide to an optimum use of resources if one can assume that there is perfect competition, perfect information and an optimum distribution of income and wealth (Coase 1988). This is a long way from reality anywhere, especially in the present day global economy. The poor have little influence on market prices. Moreover, GDP estimates fail to take into account explicitly the depletion of natural resources and the health of the ecosystems upon which all economic activity must ultimately depend. Neither GDP estimates nor commonly used social indicators by themselves can reveal much about the adequacy of social institutions to sustain economic growth. GDP per capita is not a reliable indicator of the skills and knowledge of the people who must carry out economic activities, and for whose benefit these activities should presumably be directed in a world order dedicated to sustainable development.

individuals to contribute to—and to benefit fully from—economic growth), "natural capital" (the resources provided by the Earth's ecosystem), as well as "man-made capital" (the tools, machines, infrastructure etc. required for production and distribution).

GDP, however, only takes into account explicitly investments in some forms of "man-made capital" by allowing for capital gains and depreciation in national accounts. Depletion, depreciation or improvements of natural, human and social capital are for the most part neglected. Sometimes they are treated perversely. For example, revenues from timber exports generated by destructive logging of tropical forests in areas unsuited for other land uses add to GDP. There is no offsetting entry, however, for the lost value of the destroyed forest and its multiple long-term environmental and socioeconomic services. The value added in production processes emitting toxic wastes usually enters GDP as a gain with no costs deducted for the damage caused by its toxic by-products. If these wastes are later cleaned up at substantial cost, this enters national accounts as another value added. The social and human costs to society of poverty in poor health and unskilled workers, or the lost livelihoods of poor peasants and slum dwellers displaced by development projects, seldom figure as costs in GDP estimates.

It would be unrealistic, however, to expect GDP, HDI (the UNDP's Human Development Index) or any other single indicator to reflect adequately the various dimensions of sustainable socioeconomic development. Uncertainties dominate speculations about the future. Incommensurable values as well as the essentially qualitative nature of many social goals, costs and benefits prevent their reduction to a meaningful single monetary scale. There are no reliable comparable data available for most developing countries even for many components of GDP as conventionally measured, to say nothing about those data that would be required to construct a more inclusive composite economic development index than GDP. Taking into account the many limitations of GDP per capita and other commonly used indicators of economic and social development, what do they tell us about recent trends?

Economic growth: World economic growth in the 1990s measured in terms of GDP per capita amounted to about 1.1 per cent annually (UNDP 2001). It ranged from 5.9 per cent in East Asia and the Pacific, 3.4 per cent in South Asia, 1.7 per cent in Latin America and the Caribbean, 1.5 per cent in OECD countries, to –0.4 per cent in sub-Saharan Africa and –3.4 per cent in Eastern Europe and the CIS. Of course, world growth rates of GDP are largely determined by those in high-income OECD countries. These accounted for about four fifths of total world output in 1999 but for only one fifth of the world's population.

These economic growth rates during the 1990s have to be put in a longer term perspective to suggest trends. Reconstruction of the badly war-damaged economies of Japan, the USSR and most of Europe helped fuel an unprecedented post-war expansion of the world economy from the late 1940s into the 1970s. From 1965–1980 world GDP grew at an average annual rate of over 4 per cent. In low- and middle-income countries during this period GDP growth rates averaged 6 per cent (about 4 per cent per capita). Average annual growth rates were 6 per cent in Latin America, 7 per cent in East Asia, about 4 per cent in sub-Saharan Africa and nearly 4 per cent in South Asia. In the 1980s and 1990s overall world growth rates slowed markedly.

Rapid growth of nearly 10 per cent annually continued, however, in China and several other East Asian developing countries. Growth also exceeded 1965–1980 rates in South Asia including India (Singh 2000) (see table 2.1).

Table 2.1: Trends in GDP growth, selected regions, 1965–1999 (average annual percentage growth)

Category	1965-1980 %	1980-1990 %	1990-1999 %
Low-income economies	4.8	4.4	2.4
Middle-income economies	6.5	3.2	3.5
High-income economies	3.7	3.1	2.4
World total	4.1	3.2	2.5
Lower and middle-income economies by region			
East Asia and Pacific	7.3	8.0	7.4
Eastern Europe and Central Asia	:	2.4	-2.7
Latin America and Caribbean	6.0*	1.7	3.4
Middle East and North Africa	:	2.0	3.0
South Asia	3.6	5.7	5.7
Sub-Saharan Africa	4.2	1.7	2.4

*Latin America only
Source: World Bank 1987, 2000.

Since the oil crisis and the devaluation of the US dollar in the early 1970s, the world economy has been subject to the increasing instability of financial and commodity markets. Those developing countries depending primarily on basic commodity exports to generate foreign exchange have faced deteriorating terms of trade during most years. Prices of their exports have tended to fall in relation to those of their imports from industrialized countries. These trends were intensified, especially in many African and Latin American countries, by huge and growing debt burdens. Servicing foreign debts commonly devoured an important part of available foreign exchange from all sources including new debts to service and restructure old ones. Capital flight worsened these problems.

The principal explanation for the slowdown in world economic expansion and in many of its major geographic regions since the 1970s was inadequate effective demand (Singh 2000). The technologies and resources existed to attain much higher rates of GDP growth both in OECD "developed" countries and in lagging developing ones. Increasing effective demand sufficiently to support rapid economic growth, however, would imply policies and institutions in both rich and poor countries capable of matching actual and latent production capacities not only with actual market demands but also with unmet social needs and aspirations.

That economic growth rates of 4 to 6 per cent annually can be reached and maintained for several years has been amply demonstrated in numerous countries. There is no convincing evidence, however, that the policies of "structural adjustment" imposed on most developing countries since the 1970s by international financial institutions and other creditors are the best means of promoting such economic gains.

Structural adjustment for poor countries has commonly implied deflationary fiscal and monetary policies, liberalization of their imports and exports as well as of internal markets, deregulation by their governments of capital movements and privatization of state-controlled economic activities. In situations where the state is hopelessly corrupt or incompetent, such measures may be necessary or even salutary for growth. Frequently, however, they can have very perverse effects. Governments can do a great deal more to promote sustainable growth than abandon their responsibilities to "market forces": China, India and other fast-growing East and South Asian countries have followed very different economic strategies than the orthodox neoliberal ones recommended under the so-called "Washington Consensus" (ibid.). For that matter, today's high-income "developed" countries might still be underdeveloped if their governments in earlier times had followed the advice that their present governments are giving to developing countries.

Quality of growth: The key questions in relation to sustainable development, however, have much more to do with the quality of economic growth than with its mere pace. Rates of GDP growth by themselves tell nothing about quality. Does growth of output provide greater equity, broad based employment with higher incomes for the poor, enhanced public services, improved living levels, participation for hitherto excluded social groups and better environmental protection? Or is rapid GDP growth accompanied by increasing inequalities of wealth and income, continued serious poverty, accentuated social conflicts, marginalization of many social groups and accelerated environmental degradation?

There are plenty of contemporary and historical examples of negative trends as well as positive ones accompanying economic growth. Increased economic output commonly implies faster depletion of natural resources, the generation of more polluting wastes, increased use of energy from fossil fuels for production, transportation, distribution and numerous other burdens for the world's ecosystems.[4] It also often implies marginalization and impoverishment of social groups whose customary resources, employment or markets are appropriated by other more powerful interests to speed "development".

Negative environmental and social trends, however, may be associated with low or negative rates of GDP growth as well as with rapid positive ones. This makes it all too easy to marshal "convincing" statistical and anecdotal evidence to support Panglossian scenarios in which the dominant trends are towards sustainable development or, alternatively, towards imminent social and ecological catastrophes. For an example of the use of essentially the same data to support laudatory instead of mildly critical interpretations of recent socioeconomic and environmental policies and trends, one needs only to compare the UNDP's **Human Development Report** for 2001 with its 11 previous annual issues beginning in 1990.

One has to move far beyond looking at trends. The principal issues facing those trying to promote sustainable development involve determining what might be done by whom. These questions have to be faced at all levels from local to global. Otherwise, it is not possible to imagine alternatives designed to reconcile the conflicting interests

[4] The important measure for assessing ecological issues is not mere output (the values added in production processes until final consumption) but "throughput" (the total of energy and materials used and wastes generated). Throughput is much larger than output.

of different social actors in approaching sustainable socioeconomic and environmental goals. This implies analyses in specific contexts of interacting social systems and with the Earth's complex ecosystems. It involves interdependent social institutions, policies and ongoing social and ecological processes. Obviously, economic growth must be a necessary component. GDP and its growth as conventionally measured will have to be qualitatively and quantitatively redefined in practice for economic growth to become sustainable. But how and by whom?

Global inequality: According to neoclassical economic theory, national and global competitive markets should lead to a convergence of income levels among and within nations. Marxist theories predict growing socioeconomic polarization until the capitalist system is replaced by a more "rational socialist" one. Historical evidence can be interpreted to support either trend depending on the criteria, countries, data and time periods selected for analysis (see O'Rourke 2001).

Trends towards greater inequalities in the distribution of income and assets among countries as well as within them during the last three or four decades, however, are convincing and alarming. They should be of great concern for international organizations and governments that say their overarching mission is to promote sustainable development.

Reasonably comparable data on income levels among countries and the distribution of income within them are inherently difficult to generate and interpret. Is GDP (or GNP) per capita an adequate proxy for comparing the levels of income between different countries? If so, how should incomes denominated in each country's national currency be compared among countries?

Until recently, this was usually done by converting incomes into US dollars at official exchange rates (or at some proxy for "real market rates" if these differed widely from official ones). In the 1980s the World Bank began to publish supplementary data that attempted also to show the value of national currencies converted to US dollars at "purchasing power parity" (PPP). PPP dollars represent an attempt to express the values of national currencies that indicated their actual purchasing power for typical consumers in relative prices of similar goods and services in the United States. If Indian rupees are converted to dollars at the market exchange rate, for example, maids, barbers and other services, as well as many home-produced or bartered goods such as foods, clothing and shelter are much cheaper (or often costless in monetary terms) for consumers in India than in the United States. At PPP rates, however, the dollar converted to rupees would presumably reflect similar purchasing power in India as in the United States as these goods and services would be valued in terms of US relative prices.

Another problem in making international estimates of trends in income distribution among countries is whether each country should be considered as an independent sample or whether its income should be weighted by its population. For many purposes of comparison, weighting income growth by the numbers of people seems to be an obvious choice. For some purposes, however, such as assessing the impacts of national policies it may be more appropriate to give changes in incomes of small countries with few people the same weight as large populous ones (Wade 2001).

Box 4
Purchasing power parity (PPP)

Per capita incomes in most developing countries range from one third to over three fourths higher when expressed in PPP US dollars than they do when local currencies are converted to US dollars using official or market exchange rates. Naturally, using PPPs makes distribution of income between rich countries and poor ones appear much less skewed than it would if exchange rates are used. For the "least developed countries" category, GDP average per capita in 1999 was estimated at nearly 1,200 PPP US dollars while at exchange rate conversion to dollars it was only about 300 US dollars per capita. Price relations in high-income OECD countries are quite similar to those in the United States. Their conversion to PPP US dollars makes little difference in their income levels.

Both ways of converting national currencies have theoretical advantages and disadvantages. It depends on what one is trying to compare, for what social groups and for what purposes. For comparing living levels of typical consumers in different countries, the PPP measure is theoretically superior to the exchange rate one. For comparing the strength, outputs and modernization of national economies, however, PPP measures can be very misleading. It is perhaps significant that international agencies and creditors advocating wide use of PPP US dollars in comparing incomes among countries would never try to use PPP rates in purchasing locally produced goods and services or accept PPP rates for repayment of developing country foreign debts. If they were to do so, over half of Mexico's or Brazil's foreign debt in US dollars would simply vanish.*

* The practical difficulties of establishing comparable PPP US dollar data are also very formidable. Methodologies differ. In order for national accounts to be consistent between sectors and at different levels of aggregation, the statistical exercise can be complex. Until the 1990s, independent country studies to estimate PPP rates had only been carried out in a few developing countries. Estimates for the others were based on regressions that required many questionable assumptions. Very recently, there have been studies to establish PPP rates in more developing countries but many are still missing. In view of the practical and conceptual problems encountered in estimating PPP US dollars in developing countries, one wonders if many of the inter-country comparisons in the UNDP's **Human Development Report** are not misleading.

Comparison of available data on global income distribution among countries suggests little change between 1970 and the late 1990s if incomes are weighted by population and measured in PPP US dollars. China, India and a few other fast growing Asian developing countries such as Indonesia, Malaysia, South Korea, Thailand and Viet Nam make up nearly half of the world's total population. Their incomes per capita have been growing considerably more rapidly than the world average. Growth of their incomes when weighted by population and by PPP conversion rates are sufficient to cancel out growing inequalities between most other low- and middle-income countries and the high-income ones that generate most of the world's GDP. Other measures of change in global income distribution all show rapidly worsening distribution among countries. Income gaps are much greater if exchange rate measures of income are used instead of PPP ones in comparing countries (Wade 2001; UNDP 2001).

Two recent analyses of world income distribution trends between and within countries have been based on World Bank data from household surveys carried out in most of the Bank's member countries. To the extent these data are comparable and are representative of national populations (always questionable assumptions, especially for household surveys in poor countries with unreliable demographic and economic data), their findings show severe worsening of world income distribution between

1988 and 1993. These data suggest that the poorest decile of the world's people received a little less than 1 per cent of the world's income in 1988 but only two thirds of 1 per cent of world income in 1993—a fall of 27 per cent of their minute share in five years. The richest decile's share of world income during this same period rose from 48 per cent to 52 per cent, an increase of over 8 per cent (Wade 2001). (See table 2.2.)

Table 2.2: World income distribution

Income distribution	1988	1993	% change
Gini coefficient* (world)	63.1	66.9	6.0
Poorest decile's percent of world income	0.88	0.64	-27.3
Richest decile's percent of world income	48.0	52.0	8.3
Median as percent of poorest decile	327.0	359.0	9.8
Richest decile's percent of median	728.0	898.0	23.4

*The Gini coefficient of inequality:
0 = perfect equality, 100 = extreme inequality
Source: Wade 2001.

World income distribution seems to have been worsening rather rapidly since the 1970s. The World Bank, UNDP and most other international and national development organizations focus their rhetoric and a few of their programmes on reducing poverty, not inequalities. Calling attention to the fact that inequality is a major cause of poverty by definition is brushed aside as being naïve. Warnings that growing inequalities have frequently been associated with wars, violent social conflicts and revolutions are deemed to be oversimplistic or even subversive.

Equality of opportunity is advocated as a better approach to eliminate poverty than redistribution of income and wealth. Perhaps, but equality of opportunity is commonly interpreted to mean merely formal equality before the law, having little to do with the global distribution of wealth and income. In fact, many agencies and economists try to justify gross inequalities of wealth and income by asserting they provide necessary incentives for innovations, savings and investments.

Who owns the world? This could be the title of a useful publication as it is a fundamental question for sustainable development. Good research could possibly untangle some of the complex social relations, chains of command, deceits, and political and military constraints associated with the distribution and control of the world's assets. At present, estimates are mostly conjectures based on debatable assumptions and poor information from diverse sources that are seldom very comparable. Nonetheless, a few trends are discernable.

The distribution of property rights always lurks behind any questioning of income distribution. Surprisingly, **The Economist** published Wade's provocative essay cited here (Wade 2001). Nonetheless, it felt it necessary to add a dissenting editorial note and to devote part of its subsequent issue to the benefits brought to society by the innovative and risk taking new rich. Like the Church and other reformers before the French Revolution, and later in Victorian Britain, **The Economist** recommends

philanthropy as the best remedy for social tensions accompanying growing global inequality. The rich should conceal or avoid over conspicuous consumption and devote their riches to good works promoting cultural, social and scientific advancement.

The global concentration of wealth (assets in economists' current parlance) is even harder to measure and interpret than is the distribution of income. Control of land and other wealth was originally secured by custom and force. In modern nation states it depends largely on the enforcement of legal codes (still based on custom and force) regulating property rights and contracts. Legal codes vary greatly from one country and time to another. Their observance and enforcement are even more variable, especially in many developing countries with weak judicial institutions. Also, owners of assets may conceal their real control of assets for tax reasons, for example, or they may exaggerate their wealth for various purposes. Financial structures of transnational conglomerates can be extremely complex, making it almost impossible for outsiders to identify ownership and control of their operations, affiliates, joint ventures and strategic partnerships.

Increasing concentration of world finance, production and trade in a few large transnational enterprises has been taking place since the 1950s. By the late 1990s, the top five corporations had revenues twice as big as the sum of the 100 poorest countries' GDP. While corporate gross revenues are not directly comparable with GDP (which includes only "value added" in a country), these data dramatize the economic weight of large TNCs (UNRISD 2000).[5]

All these estimates are rather speculative. Different sources often using different criteria provide widely varying estimates and projections. For example, UNCTAD's data suggest that in 1999 "some 63,000 corporations with some 800,000 affiliates accounted for one third of total world exports" (UNCTAD 2000). Another source tells us: "As the millennium begins, the world's top 200 corporations account for 28 per cent of global economic activity: the top 500 account for 70 per cent of world trade and the top 1,000 companies control more than 80 per cent of the world's industrial output" (Mooney 1999:75). Other researchers present similar data (Anderson and Cavanagh 2000).

In spite of fuzzy concepts and questionable data, a few recent trends seem clear. Control of world finance, trade, modern technologies, and production of tradable commodities, services and natural resources, is becoming increasingly concentrated in fewer and bigger global TNCs. Corporate mergers and takeovers were estimated to have exceeded 3 trillion US dollars in 1999 alone (Mooney 1999). Huge oligopolies of only five or ten firms with the major market share of revenues dominate many sectors of world production and trade. Their oligopolistic control is reinforced by patents giving them exclusive property rights for a couple of decades over new technologies, which they have financed or purchased from others. Protection of trade related intellectual property rights (TRIPS) is now one of the functions of the World Trade Organization (WTO).

[5] Values added of large corporations would only be from about one third to one fifth of their gross revenues according to some estimates (Wolf 2002).

Domestic politics in both rich and poor countries naturally influenced how governments responded to growing criticisms of TNCs. Also, during the "Cold War" between the USSR-led "socialist" bloc and the United States-led "capitalist" one, geopolitical competition for influence in developing countries allowed political support to be mobilized in the United Nations for a for closer scrutiny of TNCs. This contributed to the establishment of the United Nations Centre on Transnational Corporations (UNCTC) in the early 1970s. Its mission was to monitor TNCs and to promote an international code of conduct. The Centre was closed soon after the collapse of the USSR. Developing countries became more interested in attracting TNC investments than in regulating their impacts.

During the 1980s and 1990s, NGO-led networks and coalitions became increasingly vocal in denouncing socially and environmentally harmful TNC projects and practices (Murphy and Bendell 1999). They were sometimes able to attract influential support among consumer groups, labour unions and politicians. This put many large TNCs on the defensive. Their profits could be endangered by bad publicity, consumer boycotts and tough regulatory restrictions. The new information and communication technologies (ICT) had facilitated TNC-led globalization. But ICTs had also stimulated global alliances of their critics (O'Neill 1999).

TNCs responded to mounting criticisms from environmentalists and human rights advocates with diverse strategies. A few of their top officers, and even some stockholders, shared environmental and social concerns with their critics. They were constrained from abandoning destructive practices by the need to expand and make maximum returns. Otherwise, they risked being replaced, or their enterprises taken over by others. A few were able to improve profits while also adopting socially and environmentally more friendly practices, but their success always depended crucially on the external socioeconomic context. A response of several large TNCs was to seek "partnerships" with governments, international agencies and NGOs to promote "sustainable development".

Since the late 1990s, the United Nations and the TNCs together with some NGOs have given a great deal of publicity to a "partnership" approach. These "partnerships" would include voluntary corporate codes of conduct and an ethic of corporate responsibility for social well-being and environmental protection. Self-monitoring and self-policing of compliance are all promised in order to reverse earlier negative trends and images (see Utting 2000a, 2000b; Utting 2002a; Richter 2001).

Cleaner technologies and ecoefficiency together with socially benign treatment of their employees, customers and other "stakeholders" are proposed by several TNCs to reverse past negative social and environmental trends. Prophets of technological solutions to environmental and social degradation claim that modern biotechnologies such as genetically modified seeds and animals could make possible the elimination of hunger. More efficient uses of fossil fuels and their eventual replacement by fuel cells and renewable sources of energy could solve greenhouse gas and other pollution problems. Recent advances in nanotechnologies, they hope, would enable humans to become much less dependent on the exploitation of natural resources. Modern information and communication technologies could bring needed skills and knowledge to the world's poor, thus enabling them to benefit from, and participate fully in, the coming century of plenty. Prior redistribution of income and wealth to

poor people and poor countries, these technological optimists say, is politically unrealistic. Moreover, they believe it would remove the necessary incentives and stifle the innovations and investments needed to bring about this emerging corporate-led, neoliberal technological utopia. Ecotechnology enthusiasts seem to assume that if ecoefficient technologies are available, market forces helped by corporate good intentions could somehow bring about their use for sustainable development. They fail to analyse how institutional and policy reforms would be required to subordinate the needs of financial speculators and corporate managers to maximize short-term profits to longer term social goals. More realistically, others see technological innovations as providing opportunities but not solutions. They acknowledge the need for deep structural reforms (e.g., Hawken, Lovins and Lovins 1999; UNDP 2001; Lovins and Link 2001).

Other observers have more critical views of the potentials of modern technologies to harmonize production and consumption patterns with sustainability and social justice. They have perhaps even a greater awareness of the dangers posed by recent environmental and social trends. They point out that technological advances in the past have been accompanied by growing inequalities, poverty and environmental destruction. Their most pessimistic scenarios foresee these new technologies accelerating a corporate-led slide into an environmental, social and political catastrophe (e.g., Mooney 1999). These issues will be discussed in later chapters.

Social indicators: "Social development", like the term "development" more generally when applied to human societies, has come to mean "progress" in approaching certain social goals.[6] It is shorthand for complex processes of historical change. Institutions regulating social relations in production, distribution and other activities are all restructured during social development. It is a normative concept that implicitly includes economic and environmental as well as other social dimensions. Different social actors have many conflicting objectives. Diverse societies may endorse similar overarching goals, such as those of currently implied by sustainable development, but their elites may have very different views about priorities and the means for approaching them. For many social groups, social development simply means overcoming poverty.

Social development, like economic development, is commonly interpreted in developing countries to mean catching up with the already rich and developed. This implies improved living standards, including better access to food, shelter, education, health, security and a clean environment. For many it also suggests access to the lifestyles prevalent in rich industrial countries. For social groups that are excluded from many of societies' privileges and benefits, social development implies their being respected and included in society on equal terms with the more privileged. For many others, however, it still means only lifting average living standards for the whole national society without challenging and reforming established power relations

[6] The term development to describe economic and social progress was apparently borrowed from biology in the nineteenth century. It differs, however, from the biological concept describing how an organism develops from inception through growth, maturity, reproduction and eventual decline and death. For some social scientists, social development is akin to the biological concept of evolution. Attempts to differentiate between "social", "economic" and "political" development were sources of further confusion (Barraclough 2001).

between social classes, ethnic or religious groups, men and women, or among countries.

There are several widely used indicators of progress towards social development. A good composite index in theory should be average life expectancy at birth, reflecting access to nutritious food, sanitation, health services etc. Access to education can be indicated by literacy rates, school enrolments and the like. Gender discrimination is reflected in different levels attained by males and females. Difference between social or occupational classes, income levels or ethnic groups can reflect various kinds of social discrimination and prejudice.

Such data are usually compiled from varied sources in each country and aggregated at national levels. National aggregates are used for international comparisons among countries to show overall levels and trends. National level data are also aggregated by geographic regions, income levels and other criteria in attempts to analyse and explain differing levels and trends. One has to appreciate, however, that these data are at best crude indicators of changes in the social relations that constitute the crux of social development.

The data themselves are often very questionable, especially for underdeveloped countries. Poor countries have few resources for data gathering or analyses. Reliable registration of vital statistics such as births and deaths at local levels may be virtually non-existent or partial. Lack of good demographic data often implies that sample household surveys sponsored by international agencies may be samples of an unknown larger universe. This makes extension of their findings to national levels highly problematic. Also the surveys may not be comparable from one place and time to another. National censuses and surveys present similar problems. The quality of data for several developing countries have improved in recent years, but in others they have deteriorated. In either case, comparisons over time are full of uncertainties, as are comparisons between countries.[7]

Another problem in assessing trends in social welfare is that indicators of poverty, health, education, access to services etc. are commonly expressed in terms of percentages of a larger population. World population more than tripled during the last century. In developing countries, population increased by two thirds during only the last quarter of the twentieth century. Assuming that 30 per cent of their population was undernourished in 1975 and only 25 per cent undernourished in 2000 (not an unreasonable assumption), this meant a 17 per cent decrease in the rate of under nutrition in only 25 years. This seems like good progress. The number of hungry

[7] Many indicators, such as life expectancy and literacy rates have built-in ceilings. Biological constraints make exceeding an average life expectancy at national levels of over 80 years improbable. Literacy cannot exceed 100 per cent. This means that countries with initial low rates of life expectancy or literacy can show much faster progress than those where average length of life or literacy were already high. This need not imply faster social development for the former than for the latter. Moreover, national or other aggregates conceal vast differences among social groups and sub-national regions. Correlations of social indicators with GDP per capita (no matter how estimated) and among themselves, may appear very robust for all 170 (more or less) countries reporting data. If these countries are subdivided into a few sub-groups by income level or some similar criteria, however, these correlations can almost vanish. There are several good comprehensive discussions of these and many other difficulties (e.g. McGranahan et al. 1985). These well known problems are all too often brushed aside when analysing social trends.

people in these developing countries, however, would have grown by over 300 million, or by well over one third. Moreover, if China and a few other large countries in Asia making rapid progress in improving nutrition of the poor are omitted, there was no gain in the proportion of people who were adequately nourished in most developing countries. The interpretation of trends can be very deceptive at aggregate global, regional and national levels. Improvements in social conditions at these aggregate levels may conceal serious deteriorations for various countries and social groups.

The United Nations High-Level Panel on Financing for Development presented global data purporting to show tremendous progress in economic and social levels during the last half century (Zedillo et al. 2001). Income per capita in PPP dollars supposedly increased by over 250 per cent worldwide and by over 300 per cent in developing countries between 1950 and 2000.[8] When one recalls that the world's 200 wealthiest individuals have assets valued as being equal to the annual income of its 2.5 billion poorest people, one questions what these averages mean. Indicators of life expectancy, poverty, literacy and infant mortality all appear to have improved dramatically, especially in developing countries. Population increased by 3.5 billion people, almost all in developing countries, during the last half century. If the High-Level-Panel's data are translated into numbers of people suffering depravation under these same headings, the overall trends look less rosy.

During the last 50 years the world's population increased by some 240 per cent. If one looks at social welfare trends in low-income regions and countries such as those in sub-Saharan Africa and the former Soviet Union and Eastern Europe, they are extremely depressing. The apparent good results in reducing poverty for developing countries as a whole can largely be attributed to China and a few other Asian countries (see table 2.3).

[8] PPP dollars had to be estimated for 1950 on the basis of very heroic assumptions. Published estimates for only a few (mostly OECD) countries first began to appear in the 1970s. Retrospective calculations are even more problematic than current ones. Moreover, the PPP measure, as shown earlier, presents many theoretical and practical problems in comparing incomes across countries and over time.

Table 2.3: Income poverty by region, 1987–1998						
Regional groupings	**Population below the poverty line (per cent)**			**People living in poverty (millions)**		
	1987	**1993**	**1998**	**1987**	**1993**	**1998**
East Asia and Pacific	26.6	25.2	15.3	417.5	431.9	278.3
East Asia and Pacific (excluding China)	23.9	15.9	11.3	114.1	83.5	65.1
Europe and Central Asia	0.2	4	5.1	1.1	18.3	24.0
Latin America and the Caribbean	15.3	15.3	15.6	63.7	70.8	78.2
Middle East and North Africa	4.3	1.9	1.9	9.3	5.0	5.5
South Asia	44.9	42.4	40.0	474.4	505.1	522.0
Sub-Saharan Africa	46.6	49.7	46.3	217.2	273.3	290.9
Total	28.3	28.1	24.0	1,183.2	1,304.3	1,198.9

*The poverty line is calculated at US$1.08 a day at 1993 PPP
Source: World Bank 2000

Table 2.4 presents estimates of overall trends during recent decades for a few social and economic indicators for all developing countries and for least developed countries. These data suggest huge differences among regions and other inter-country groupings. Looking at individual countries would, of course, show even wider divergencies.

Table 2.4: Human poverty in developing countries							
	Average life expectancy (years)		Infant mortality rate (per 1,000 live births)		Adult Literacy[1] %	Male literacy %	Female literacy %
	1970–1975	**1995–2000**	**1970**	**1998**	**1970**	**1998**	**1998**
All developing countries	55.6	64.4	110	64	46	80.3	64.5
Least developed countries	44.2	51.6	150	104	26	61.4	41

[1] Estimates of male and female literacy separately not available for 1970.
Source: UNDP 1991, 2000.

One can emphasize "impressive progress" or "daunting problems". The 2001 **Human Development Report** calls attention to impressive progress made during the last three decades. It highlights the potentials of new modern technologies in agricultural biotechnology, pharmaceuticals and information and communications to contribute to the elimination of poverty (UNDP 2001). The report recognizes that technology offers no "silver bullet". It states that ". . . technology itself has become a source of economic growth" (UNDP 2001). But for whom and at what social and environmental costs?

Earlier **Human Development Reports** were more realistic and sceptical. Based on essentially the same UNDP data, a former administrator of UNDP wrote:

> The world is becoming increasingly polarized between the rich and the poor—both between and within countries. Poverty amid abundance is a growing problem that poses grave dangers. . . . In the past 15 years, per capita income has declined in more than 100 countries. . . . The risk of a huge global underclass undermining global stability is quite real. . . . Among the 4.4 billion people living in developing countries around the world, three fifths live in communities lacking basic sanitation, one third go without safe drinking water, one quarter lack adequate housing, one fifth are undernourished; and 1.4 billion live on less than $1 per day . . . (Speth 1999).

In any case, concentrating on national and multinational aggregates either as ratios or in absolute numbers in looking at trends in living standards or social welfare misses fundamental issues. These have to do with the social dynamics generating socially undesirable outcomes in specific contexts and what might be done to make social change more supportive of sustainable development. This always requires in-depth studies relating each case to broader historical, socioeconomic and ecological contexts.

B. Some Issues for the Summit

Mahatma Gandhi went to the heart of the sustainable development dilemma over 70 years ago. In 1928 he wrote:

> God forbid that India would ever take to industrialization after the manner of the west. The economic imperialism of a single island kingdom (England) is today keeping the world in chains. If an entire nation of 300 million (sic) took to similar economic exploitation, it would strip the world like locusts.[9]

Today India and China with populations of over 1 billion each, and the entire world with a population of over 6 billion (projected to increase to some 9 billion in the twenty-first century) is trying to follow this tiny island kingdom's path.

Paul Erlich's formulation that anthropogenic environmental impact is a function of population, affluence and technology (I=PAT) is well known among ecologists and environmental activists. This is essentially a definitional truism. It has very limited explanatory or predictive power. It omits social relations (institutions) and purposeful courses of action by diverse social actors (policies) from the equation. Unlike Gandhi,

[9] M.F. Gandhi, **Young India,** 1928:422, cited by Bandopadhyay and Shiva 1988.

Erlich brushes aside power relations and deliberate policies as explanatory factors. Social relations and policies, however, are always crucial in determining demographic change, consumption-production patterns and technological trends. Of course, such abstract formulations miss the complexities of the real world. Geography, values, "culture" more generally and specific ecosystems have to be considered. Care has to be taken, however, to avoid falling into "cultural" or "geographic" determinism. Calling attention to the crucial role of institutions and policies is essential when dealing with sustainable development issues.

Following the CSD's suggestion[10], this brief discussion of some underlying issues and dilemmas attempts to follow the format of Agenda 21. The preamble of Agenda 21 emphasizes the need to integrate development and environmental concerns. It calls attention to the central role of national governments and of international collaboration to deal with global problems.

The Summit offers an opportunity to review critically, in the light of experience since Rio at local, national and international levels, the social and economic policies recommended in Agenda 21. The Rio document recognizes that policies will have to be adapted and modified by each country taking into account its unique circumstances. Nevertheless, the neoliberal agenda for macroeconomic stabilization, liberalization, privatization and decentralization seems to be implicitly accepted as the norm. These assumptions need to be questioned.

Integrating Sustainable Development into Institutions and Policies

The first section of Agenda 21 deals with the social and economic dimensions of sustainable development. Its seven chapters discuss international co-operation, poverty, production-consumption patterns, demographics, health, human settlements and integrating development and environment in decision making. This is not a very homogeneous mix of issues. The common thread uniting them is the overriding role of national and international processes, institutions and policies in influencing outcomes for social welfare and the environment in developing countries.

International co-operation in promoting sustainable development is viewed in Agenda 21 as a matter of promoting international trade, pursuing macroeconomic stability through "sound policies", providing adequate financial resources, better governance etc. Recent trends, however, suggest that more important for developing countries pursuing sustainable development goals may be reducing "conditionalities" imposed by rich trading partners and creditors that often prevent governments of poor countries from pursuing alternative strategies better suited to their conditions Terms of trade may be far more important for them than freer trade. Reduction or elimination of their foreign debts may be crucial for combating poverty. So too may be reforms designed to redistribute wealth and income to benefit the poor, such as redistributive land reforms in many developing countries. International trade can often be very beneficial

[10] The CSD's documentation in preparing for WSSD suggests that discussions should focus on Agenda 21. Climate change, biodiversity, desertification and other topical issues are all included in Agenda 21. They are also the responsibility of other United Nations bodies created especially to deal with these issues. Thus, they should not receive undue attention by the Summit at the expense of other Agenda 21 issues that are also very important, according to the CSD. Unfortunately, the issues of sustainable development are not really separable in practice.

for GDP growth. In many policy and institutional contexts, however, it may also increase social polarization and poverty while in other contexts it may contribute to poverty alleviation. Increased trade with greater industrialization and economic growth are usually associated with increased atmospheric pollution. Transport is estimated to contribute over one fourth of global greenhouse gas emissions and is projected to contribute 40 per cent by 2020.

In reviewing interrelations between demographic trends and sustainable development, the Summit should also consider issues of international migration. Developed countries now seek scientists and engineers from poor countries, but this contributes to a "brain drain". Rich countries sharply restrict migration of the unskilled and needy from poor trading partners. Liberalization of international trade in goods and services together with unregulated capital movements can lead to massive displacements of low-income families who lose their customary livelihoods as a result. The neoliberal model is not even coherent on its own terms if "free trade in services" does not include the services of those displaced by development. Governments of poor countries have few policy instruments available to deal with these problems other than tariffs and regulation of capital flows. It is unrealistic politically to expect rich countries to open their frontiers for poor migrants from abroad. In this case, however, they should not insist on poor countries accepting their goods, services and investments without restrictions.

Demographic trends are now believed to point to a stabilizing of world population at about 9 billion by the latter half of the century. Some recent studies project world population diminishing to 8.5 billion by 2100 (Lutz et al. 2001). Populations will become older and in many countries such as China may even decrease. This will not in itself contribute to sustainable development unless "redundant" people are provided with useful and satisfying roles in society. It is difficult to imagine how this could happen in poor countries that pursue neoliberal development strategies unless there is increased migration of their workers to richer ones.

Agenda 21 recommends capacity building (education, health, infrastructure etc.) together with participation of local people and their communities to promote sustainable development. It suggests decentralization of many central government functions to local governments to facilitate participation. This is, of course, desirable by definition where feasible, if local communities are reasonably just and democratic. Often they are controlled by small elites such as large property owners etc. Moreover, even if reasonably democratic and participatory, how can local governments of poor regions acquire the economic resources and political authority needed to deal with the new responsibilities assigned to them? They require the support of strong central states to deal with transnational investors, aid agencies, NGOs and to redistribute available resources nationally.

A central challenge, as Agenda 21 emphasizes, is to make production-consumption patterns compatible with sustainable development goals. How can this be approached? The rich countries will have to take the lead. But there are few signs that they are prepared to do so if this implies offending the special interests profiting from present production-consumption patterns, or other sacrifices affecting the life styles of their citizens.

Changing national accounting systems to reflect social and environmental costs as proposed in Agenda 21 could have educational benefits. It would probably accomplish little else if the accounting systems of business and financial enterprises were not also changed to reflect such costs. The practical problems associated with such accounting reforms are formidable. They would imply a radical restructuring of the whole world system. Contradictory interests, incommensurable values and great uncertainties make such reforms unlikely in the near future (Barraclough and Ghimire 1995).

Promises and Contradictions of Ecoefficiency

The 14 chapters of Agenda 21 under the heading of "Conservation and management of resources for development" deal with well known environmental problems such as pollution, deforestation, biodiversity, land degradation, water scarcity, etc. Each chapter was prepared in part on the basis of inputs from specialized agencies or organizations. They tend to emphasize the technocratic approaches to each problem. The broader social-economic-political dimensions dealt with in Section 1 of the Agenda, and to some extent later in Section 3, are not integrated into these 14 key chapters. How to do so is a challenge for the Summit. Good technical initiatives to stop harmful deforestation are likely to be ineffective, for example, if macroeconomic policies and institutional structures that drive deforestation processes in the pursuit of short-term profits remain intact.

The emphasis throughout this section of Agenda 21 is on improving efficiency of resource use. For example, fossil fuels consumption per unit of output in each industry and in overall GDP, could be decreased enormously. The technological opportunities already exist. But each increase in efficiency of resource use in practice is likely to stimulate greater use of the resource. This is known as the "Jevons Paradox". The nineteenth century British economist William Stanley Jevons, who was a founding father of modern neoclassical economics, formulated this paradox in his work on the coal question in 1865 (Foster 2000). Gains from greater efficiency in use of a natural resource such as coal tend to be overwhelmed by greater use of the resource (or of close substitutes such as petroleum for coal).

This paradox is well illustrated by data in the OECD's **Environmental Outlook**. Between 1980 and 2000 energy use in OECD countries relative to their GDP decreased by about 10 per cent and it is projected to decrease to 80 per cent of 1980 levels by 2020. By 2000, however, overall use of energy increased almost twice as much as intensity of use had improved. By 2020 energy use is projected to be nearly 35 per cent above 1980 levels, much more than cancelling out the gains in efficiency. Similar trends are shown for generation of municipal waste and abstractions of fresh water (see figure 1 in OECD 2001:22).

The OECD report recommends removing harmful subsidies that encourage overuse of scarce resources and the generation of undesirable wastes. It also proposes applying a fuel tax and a chemical use tax. Under the assumptions of its model, these measures would have positive impacts, but only modest ones for five undesirable environmental processes related to energy (see figure 2 in OECD 2001:24).

Science and technologies have the potential to contribute to sustainable development. To take advantage of this potential, institutions, policies and international power structures will all have to be reformed. Without reforms in social relations at all levels, new technologies seem more likely to accelerate social polarization and ecological degradation than to promote sustainable social and environmental goals.

Mobilizing Political Support

Policies and institutions that integrate sustainable development goals into international, national and sub-national development strategies require political decisions and trade-offs, which may be conflictual. How to mobilize the social forces (the organized interest groups and the broader social support these organized interest groups can muster) that are capable and willing to make sustainable development a political priority at all levels is a fundamental challenge for the Summit.

The Earth Summit's Agenda 21 recognized this need to mobilize social forces, at least implicitly. Its third section is entitled "Strengthening the Role of Major Groups". Its preamble states the success of Agenda 21 depends on "the commitment and genuine involvement of all social groups. . . . One of the fundamental prerequisites of sustainable development is broad-based public participation in decision making. . . . This means moving towards real social partnership in support of common efforts for sustainable development."

The seven chapters of this section of Agenda 21 identify and discuss the potential roles of seven very disparate and overlapping groups. These include women, children and youth, indigenous people, non-governmental organizations, local authorities, workers and trade unions, business and industry, the scientific and technological community, and farmers. Just what criteria were followed in prioritizing these seven social groups is not clear. People have multiple identities. At an abstract global level one can imagine any number of social groupings according to vulnerabilities, occupations, assets, incomes, common interests, values, perceptions, ethnicities, nationalities, etc. that could potentially be mobilized to support specific sustainable development goals in particular political fora. These same groups, however, have many conflicting goals, interests and perceptions.

The seven groups prioritized in Agenda 21 seem to have been selected using very diverse criteria. At least, they constitute a recognition of the need for political mobilization if progress towards sustainable development is to be made. By emphasizing potential common values and interests while neglecting conflictive ones, however, Agenda 21 fails to deal with the principal political issues that confront the Summit on Sustainable Development.

The most relevant social groups for advancing sustainable socioeconomic and environmental goals have to be identified in each concrete context where decisions are taken. So too do the contradictory interests, goals and values of the diverse social actors. Who would be affected favourably or unfavourably by reforming institutions and initiating policies proposed to make patterns of consumption, production and economic growth more socially and environmentally sustainable? How could conflicting values and interests be reconciled? Which groups could be capable and willing to make effective initiatives? What can be done at local levels within the

constraints imposed by national and global policies and power structures? How could local level initiatives contribute to positive changes at national and international ones, and vice versa? Which trade offs and compromises are possible that would not endanger the whole sustainable development vision? These are a few of the issues the Summit will have to confront.

Implementing Sustainable Development

Assuming that the political difficulties of adopting sustainable development strategies can be overcome, how can they be implemented effectively? The last section of Agenda 21 "Means of Implementation" attempts to deal with this question. Its eight chapters discuss financing, technological transfers, science, education, national and international co-operation in capacity-building, international institutions, international legal instruments and information for decision making.

Of course, discussions of implementation mechanisms remain abstract and hypothetical until there are firm political decisions in specific contexts to move ahead. Agenda 21 makes many useful proposals. They are necessarily very general in the absence of a political consensus about needed reforms in production-consumption patterns, social relations and power structures.

A key issue seems to be how to advance towards sustainable development goals from very different initial contexts. International policies and institutions that fail to recognize adequately great inequalities and diversities among and within countries and the need for each political entity to design its own strategy and path cannot contribute to sustainable development. Implementation efforts that attempt to impose neoliberal or any other single development model on developing countries are not sustainable.

Chapter 3
Responses to Environmental Degradation and Unsustainable Development

Research on the social origins and impacts of environmental degradation reinforces the now widely recognized conclusion that it is a systemic issue. It has to be addressed simultaneously at local, national and transnational levels. Identification of "precipitating" or "immediate causes", "driving forces", "root causes", "aggravating factors", "ultimate causes" etc. only has operational meaning when related to specific historical and ecological contexts. Cross-country statistical analyses based on macro-economic models at can only suggest some of the issues to be investigated critically in specific situations. These models may be highly misleading for identifying problems and remedies in particular countries and localities.

Both the social causes and impacts of environmental degradation are largely determined by institutionalized social relations as well as by the policies of diverse social actors. In this respect, identifying the social actors, processes, structures and interactions contributing to environmental degradation and in determining its impacts on diverse social groups and ecological systems is an essential step towards proposing remedial actions. These are to some extent different for each locality, country, region and time. As was seen in the numerous cases mentioned earlier, property relations were always a crucial factor.

Ecological degradation, like sustainable development, is a social construct. There are no absolute benchmarks of what constitutes a "natural environment" against which degradation can be measured. The impacts of human activities are an integral component of "natural ecosystems". Perceptions of environmental health, and of sustainable development more broadly, require value judgements. These are based on divergent experiences and often on incommensurable values. For practical purposes of proposing policy and institutional reforms to promote more sustainable development in international fora, the United Nations Declarations of Universal Human Rights and the goals of sustainable development can provide a useful conceptual framework. But it must be recognized that these universal goals are subject to many contradictory perceptions and interpretations by different participants. Representatives of diverse societies and of their multiple class, ethnic and cultural sub-groups will have to clarify among themselves what constitutes environmental degradation and unsustainable development in specific contexts. Otherwise they cannot hope to agree about meaningful remedial actions.

In this respect, the various regional and sub-regional meetings (prep-coms) sponsored by the United Nations Commission on Sustainable Development in preparation for the 2002 World Summit on Sustainable Development in Johannesburg should be particularly helpful.[11] They affirm the need for a holistic approach in addressing issues of ecological degradation. Moreover, they suggest that social issues such as reducing inequalities and poverty among and within nations, as well as promoting production and consumption patterns that are compatible with socially and

[11] The reports of these preparatory conferences can be found at: http://www.johannesburgsummit.org/html/prep_process/regional.html.

ecologically sustainable economic growth, should be given the highest possible priority.

The neo-Malthusian paradigm blaming population growth, consumption-production levels and inappropriate technologies for environmental degradation seems to be increasingly recognized as being a definitional truism. It is of limited help in formulating reforms in specific contexts. Issues of policy and institutional reforms at all levels promoting socio-economic and ecological sustainability in concrete contexts should be the central issues debated at the World Summit on Sustainable Development.

Attention should be given at the World Summit to the role of military conflict and the preparation for armed conflict in stimulating non-sustainable development. The environmental and social degradation associated with recent wars dwarf those of the Bhopal and other widely publicized environment disasters. Military expenditures were estimated to have accounted for about 4 per cent of world GDP in the 1990s. There has been little serious research on the impacts of military activity on the natural environment, social welfare and other aspects of sustainable development. Military expenditures and waste provide a major short- and medium-term stimulus to economic growth and employment. Their longer term impacts by sustainable development are more questionable. Of course, as the problem is systemic, it would be logically impossible to assign precise weights of cause and effect to any one component of the world system such as the military.

The role of wars and violent social conflicts in contributing to unsustainable development deserves to receive more critical attention. The commonly held view that civil and international conflicts arise in large part from competition for control of scarce natural resources has considerable historical support. This implies a conceptual framework of values that legitimated the pursuit of human greed over the fulfilling of human needs. Values, institutions and ongoing processes of social change constantly interact. The challenge for the World Summit is to promote mutually reinforcing institutional and policy reforms together with an inversion of the scale of socially accepted values that now give priority to human greed over needs.

The long history of failed efforts by philosophers, humanists, moralists and other visionaries to change social values through exhortations based on logical reasoning or divine revelations leave little room for optimism. Perhaps a more holistic approach can have better success. The contradictions between human survival and recent trends that primarily serve short-term interests of the powerful become increasingly obvious. Organized pressures for sustainable development from hitherto excluded social groups, allied with those among the powerful who see their own longer term self-interests endangered, offer rays of hope.

A. The Crucial Role of Public Policies

Some two centuries ago Malthus argued that rapidly expanding populations would soon be checked by more slowly growing food supplies accompanied by famines, plagues and violent conflicts. Since then the world population has increased nearly ten-fold. Food supplies, however, have grown even more rapidly. There are more people today suffering from hunger, insecurity and extreme poverty than any time

earlier, but the proportion of humanity who are desperately poor and doomed to experience short and brutal lives has apparently decreased.

Several other environmental calamities forecast by diverse authorities during the last two centuries have not yet occurred to the extent feared. "Exhaustible natural resources" of soils, minerals, fossil fuels etc. have not been exhausted. Some, such as "proven reserves" of fossil fuels, appear to be even more abundant. Natural "sinks" absorbing atmospheric and other pollution generated by human activities have proved more resilient than many early environmentalists had predicted. Moreover, trends towards increasing pollution have in some cases been reversed. "Renewable resources" such as forests and biodiversity have been badly abused, but as yet, at least, environmental catastrophes from such overexploitation have been mostly concentrated in particular localities, affecting principally the poor.

There are many reasons why these predicted environmental disasters did not materialize to the extent feared. Important among them were policy responses.

The reassuring trends just mentioned have led to widespread optimism about environmental and social issues. This is especially notable among many business and political leaders as well as economists rationalizing existing distributions of power, income and wealth. Economists are particularly prone to view the natural environment simply as another "factor of production" that when scarce and expensive can be substituted by man-made capital and new technologies. This environmental optimism was reflected at UNCED in several basic documents (e.g. World Bank 1992). It contributed to the mild evasive wording of Agenda 21 and other outputs of the Rio Conference, as discussed earlier in this paper.

Well-organized special interest groups at all levels profit immensely by supplying fossil fuels to expanding industrial economies. They fear that environmental concerns could result in greater public regulation that would endanger their short-term interests. These special interest groups are faced with mounting evidence from the scientific community of the dangers posed by ever-increasing greenhouse gas emissions, although the scientists also emphasize many uncertainties. Opponents to emissions-control welcome rationalizations of their activities from so-called "experts" and "intellectuals". A good example is the United States administration's rejection in 2001 of the Kyoto Protocol on the reduction of greenhouse gas emissions and its denial of the probable contribution of human activities to global climate change.

An illustration of this tendency is the enormous popularity in some news and feature media of the pronouncements by a hitherto obscure Danish statistician. His book, **The Skeptical Environmentalist** (Lomborg 2001a), attempted to cast doubts on the seriousness of global environmental degradation. Notably, the British weekly **The Economist**, widely read in business and political circles, highlighted Lomborg's arguments in two different numbers in 2001 and another even more prominently in 2002 (**The Economist**: 4 August 2001(a); 8 September 2001(b) and 2 February 2002). Media exposure in **The Economist** and elsewhere provoked angry responses from environmentalists as well as critical comment in several scientific publications (e.g., **Scientific American**, 20 January 2002; Michael Grubb's book review in **Science**, 9 November 2001).

Lomborg correctly criticized many of the speculative calamitous claims by some conservation enthusiasts. He cited a wide array of international and national statistics suggesting apparently contrary trends on average in many countries. Uncertainties and other qualifications found in original scientific papers had been omitted by many environmental activists in order to attract media attention as well as to make a stronger case with the public.

Environmental activists had also failed to mention data that did not support their case. Lomborg and his supporters, however, indulge in similar neglect of uncertainties and contradictory evidence themselves when it comes to using debatable statistics in support of their own more optimistic positions. More seriously, they fail to emphasize how misleading national and global data can be for identifying and quantifying negative impacts on particular groups and regions of social processes generating environmental degradation and social polarization. They dismiss great the uncertainties, ambiguities and contradictory trends that lie behind the data they cite. Moreover, they attempt to help resolve policy dilemmas faced by political leaders dealing with issues of social polarization and environmental degradation.

Lomborg proposes to do this by quantifying supposed impacts rather arbitrarily in terms of monetary costs and benefits (an approach **The Economist** warmly endorses). This ignores the fundamentally political nature of the issues. It is impossible in practice to reduce these issues meaningfully to purely monetary or any other single scale because of uncertainties and incommensurable values. Also, pricing systems necessarily reflect established patterns of income, wealth and power (poverty stricken consumers in need of food, clean water, shelter, education etc. contribute little to "effective demand"). Recognition of uncertainties, incommensurabilities and the uniqueness of each historical context are inconvenient for making broad generalizations with confident predictions and recommendations.

A principal reason why Malthus' and others' warnings to their contemporaries of impending environmental disasters were frequently mistaken was their underestimation of the role of policies. Action through social organizations can often stop, mitigate or avert the harmful impacts of environmentally degrading processes. Policy, by definition, implies a purposeful course of action by a "social actor" ("agency"). Policies can help in modifying deeply imbedded social relations (institutions) and behaviour. Policies can provide rules with sanctions and incentives for encouraging the invention and diffusion of technological innovations as well as reforms of social relations.

Lomborg and his colleagues fail to stress the importance of public policies in averting widely predicted ecological disasters. Purposeful courses of action by governmental organizations at local, national and international levels have played a decisive role, for example, in reducing urban air and water pollution in rich industrial countries and in some cities in poor ones. Lomborg et al. tend to ascribe such relative environmental successes principally to "market forces" generated by individual producers and consumers attempting to maximize their "income".[12] Pursuit of individual self-

[12] Ideologues of market fundamentalism maintain that self-regulation through the pressures of "impersonal" market forces closely resembles "self-organization" in nature. Why markets should be considered more "self-organized" than are states, business organizations, unions and other human institutions is not explained. Perhaps it is a legacy from a period when both state and religious bodies

interest, however, can best contribute to satisfactory social outcomes only under certain conditions. These include, for example, a widespread perception of an equitable distribution of power, wealth and income, together with truly democratic participation in public affairs and respect for universal human rights. In other words, exclusive reliance on undirected "market forces" to bring about "sustainable development" has to presuppose the prior attainment of the goals of sustainable development as a starting point. This is hardly a realistic assumption.

Here we are primarily concerned with the origins and impacts of public and private policies that protect or harm the natural environment directly or indirectly. Custom and legal traditions distinguish between "private" and "public" organizations and their policies. Nation states, together with governmental agencies, dependencies, subordinate and affiliated bodies supposedly represent the interests of the whole society—"the public interest". Government and interstate organizations of all kinds are commonly considered to be "public" even if many of their policies may be stimulated by narrow "private" interests. Business enterprises are usually treated as being private or public depending on their legal ownership and control. Civil society organizations (NGOs etc.) are usually considered as "private" even though some are financed largely by the state. A few are nearly exclusively dedicated to the "public good". In practice, distinctions between public and private policies can often become extremely blurred.

Public policies respond in large part to political pressures from the state's support groups and from others viewed as potential state supporters or dangerous opponents. So-called "decision makers", even in authoritarian states, are constrained by their needs for eventual broad political legitimacy. Policy reforms by governments usually require impetus from powerful "social forces" (i.e., organized interest groups and their broader constituencies identified with the perceived interests of social class, status, ethnicity, religious affiliation, region etc.). "Private" organizations have purposes and policies ranging from expansion and profits of business enterprises to the altruism of a few NGOs. Distinguishing between "profit seeking" enterprises and "non-profit" NGOs, however, is not always helpful. How private or public organizations act in practice often depends as crucially on specific contexts and circumstances as on their legally defined goals.

A key question confronting those trying to promote "sustainable development" is who could help bring it about. What social forces would be willing and capable of initiating and implementing needed policy and institutional reforms? This is a daunting challenge for the World Summit on Sustainable Development.

Answers always differ from one context to another. Some courses of action by states and other organizations are designed to stop destructive deforestation or to reduce greenhouse gas emissions. Such environmental protection policies frequently fail. They may be inadequate or counteracted by contradictory policies. Obligations by many poor states to service publicly held foreign debts, for example, may cancel out potential benefits from many conservation policies. Policy failures are frequently worsened by perverse impacts unforeseen by those promoting the policy. Also, some

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claimed divine origins. Now, however, "market fundamentalists" seem more prone to claim divine inspiration than do many state leaders and officials.

supporters of public policies to reverse environmental degradation may foresee that the policy, if adopted, would have perverse impacts that would be contrary to its declared objectives, but would please key supporters. Such policy hypocrisy is commonly encountered around complex environmental and socioeconomic issues. The absence of public policy concerning many crucial issues is in itself a policy of doing nothing and hence of promoting more unsustainable development.

Policy initiatives are commonly discussed according to the issues that they attempt to address, such as deforestation, urban pollution, climate change etc. In this section, however, we attempt to group policy initiatives apparently taken at local, national and international levels. As will be seen below, this grouping of policies also presents ambiguities and contradictions.

B. Local-level Initiatives and Constraints

Interdependent Policies at Diverse Scales

A mantra of many environmentalist organizations has been "think globally, act locally". The BBC's excellent programme on the environment entitled "Our Planet" is subtitled "Global Issues, Local Solutions". A recent IIED publication entitled **Equity for a Small Planet** prepared for the Johannesburg World Summit gives a high prominence to the need for good local governance in order to approach sustainable development (Satterthwaite 2002).

This emphasis on local action, local solutions and local government is salutary if it is interpreted to mean that sustainable development policies ultimately have to be implemented by agencies in specific localities at particular times. Moreover, in principle the reforms have to enjoy some measure of local support and co-operation. In the same vein, one of the most thoughtful mid-twentieth century United States politicians, Tip O'Neill, famously stated that "all politics is local" (sic). He certainly did not mean that national and international policies are of secondary importance. After all, he was one of the most powerful national level politicians in the United States for over two decades. But he knew that United States politicians have to count on local constituencies in order to be effective.

The danger posed by slogans primarily emphasizing local solutions and actions is that the national and international origins of most present-day environmentally and socially degrading processes tend to be forgotten by poorly informed well-to-do audiences in the North. Giving primacy to the local can be interpreted to imply that the behaviour of poor people and poor countries are the primary culprits. This can contribute to a "blame the victim" syndrome. National and global actions are as urgent as are local ones. In many local contexts they are a precondition for "local solutions". Policies at all levels are to a large degree interdependent.

Almost always and everywhere there is something that local residents, their organizations and local governments could do better to protect the livelihoods of the poor and their natural environment. But the limits on what local groups can do are often very narrow. Sometimes there are almost no possibilities at all for constructive local initiatives that could be undertaken without provoking more violent repression, leaving people worse off. This is frequently forgotten by progressive outsiders often

romantically extolling the benefits of decentralization and democratic local governance.

The benefits of democratic decentralization are great and are a central goal of sustainable development. Advocates of decentralization, however, often neglect the prevalence of inequitable repressive local power structures and the acute scarcity of resources in many localities, even if those available locally were equitably distributed. Such issues require national and international actions as well as local ones. Pressures from militant local organizations such as labour unions or neighbourhood associations can in some circumstances hasten national reforms, but it is often a long slow process punctuated by setbacks and violent repressions.

Local Power Structures

It is well known that the majority of the world's poorest people reside in rural areas of developing countries. What is less appreciated is that while many of these rural poor live in remote regions with low quality natural resources, many others live or work in rich agricultural regions dominated by highly productive capital-intensive large commercial enterprises. Much of the worst poverty in the United States during the twentieth century was found in some of its richest commercial agricultural areas. The Mississippi Delta operated by large plantations was a good example. The same paradox is found today in many developing countries. High concentrations of very poor tenants and workers are found on or near rich agro-industrial large estates in Latin America, Southern Africa and in Asian countries such as the Philippines. Several cases were mentioned earlier in this report. In such circumstances, land, capital, credit, markets, transport and political power all tend to be concentrated in the hands of authoritarian local elites. Local initiatives to protect the environment and relieve poverty in such contexts are unlikely to be initiated by local governments.

There are always exceptions. When local government initiatives towards sustainable development in a large commercial estate context occur, however, they are unlikely to be really local. Elites generally have local, national and, in some cases, cosmopolitan identities. Their responses to environmental and poverty issues reflect more than local perceptions and concerns. What and who is local? In discussing local responses to environmental degradation, what is meant by "local" is a crucial question.

Initiatives taken by subordinate workers, tenants and others in socially polarized rural areas tend to be highly conflictive. Popular movements are often brutally suppressed where local authorities believe their use of violence will be backed or tolerated by the national state and other powerful outside organizations. Where the state may be more sympathetic to collective initiatives by the poor, however, positive changes towards sustainable development can sometimes emerge following prolonged struggle. Opponents to reform rely heavily on fomenting divisions among popular movements that always include groups with divergent as well as convergent interests in reforms.

Similar dilemmas are found concerning poverty in urban centres. Mexico City, São Paolo, Manila or Mumbai, for example, have rich financial and commercial centres with steel and glass towers resembling those of New York, Paris or Tokyo. These metropolitan "localities" boast average per capita income far higher than national averages and may include a few million inhabitants. A high proportion of these urban

residents, however, are desperately poor. They are crowded into slums and squatter settlements with highly inadequate public services.

"Local Initiatives" and programmes to improve livelihoods and control environmental degradation at the level of metropolitan governments tend to reflect the concerns of each city's political and economic elites and vocal middle classes. Their policies are sometimes modified by strong pressures from organized groups of the poor, depending partly on national and international contexts. Nonetheless, urban sustainable development policies usually benefit the urban non-poor disproportionately in spite of their declared objectives.[13]

Policies to protect livelihoods and the environment of the poor can be more effective if they are designed, negotiated and implemented with the active democratic participation of those who are the intended beneficiaries.

[13] For a comprehensive discussion of UNRISD's research on such urban issues, see Westendorff and Eade 2002.

Box 5
Popular participation and conservation

"*Right*
I will not stop cutting down trees
Though there is life in them
I will not stop plucking out leaves,
Though they will make nature beautiful
I will not stop hacking off branches,
Though they are the arms of a tree
Because—
I need a hut"

Cherabandaraju
(Translated from Telugu by C.V. Subbarao)

As expressed in the verse above, there exists tension between the concept of nature as an exclusive form of beauty and the more practical interaction between people and their environment. European Romanticism heralded 'Nature' as an exalted ideal around the time of the industrial revolution, when survival divorced from natural forces first seemed possible. Today, environmentalists argue that, not only was the idea that the machine might replace nature scientifically wrong, it was also a root cause of many of our current ecological problems. In the search for solutions to today's environmental degradation, successful schemes attempt to preserve the link between human survival and ecological conservation, involving those who most directly experience it. Two experiments with alternative management philosophies incorporating the participation of local populations are presented in this UNRISD publication.

India
The destruction of forest habitat in India has led to acute shortages of essential materials all over the country. The present system of management of public forests is failing to meet both conservation requirements and the subsistence needs of the local populations. India's forests continue to have a subsistence function for many villagers whose demands for fuel and fodder cannot be met by the resources of privately owned land. Women are having to walk increasing distances for fuel wood and graziers are taking their livestock over a much wider area to forage. Many woodworking artisans have been forced to abandon their occupation altogether due to the unavailability of raw material.

Two large experiments in local participation in forest conservation are, however, proving successful in the country:

The *van panchayats* are a major network of publically owned village forests in the hill districts of Uttar Pradesh. Each *van panchayat* elects its own managing committee and assumes control of the forest, with the power to regulate its use by villagers: to close the grazing access in certain seasons; to impose restrictions on the amount of firewood an individual household can gather; to prevent people from other villages using the forest and to thwart encroachments on the woodland for dwelling or cultivation. Usually, a full-time watchman is appointed, paid from contributions by the villagers.

Several studies have commentated on the relatively healthy state of *panchayat* forests; oak forests, in particular, are invariably well managed. It is acknowledged that there are several areas in which the system could be improved, but *van panchayats* have proved an

ecologically viable and socially acceptable system of resource management and a salutary reminder of the potential of local popular participation in preserving the environment. As of 1985, there were 4,058 *van panchayats* in Uttar Pradesh, covering 469,326 ha.

A quite different system of popular participation in forest management has recently been crafted in the state of West Bengal. In 1972, the district Forest Department recognized its failures in reviving the degraded sal forests in the southwest of the state. Traditional measures of surveiling and policing had led to "a complete alienation of the people from the administration", resulting in frequent clashes between forest officials and villagers. The new scheme involved villagers in the protection of land. In return for their help, villagers were given employment in silvicultural and harvesting operations. They currently receive 25 per cent of the final harvest and are allowed to use the forest for fuel wood and fodder collection. The response has been positive and the sal forests have undergone a remarkable recovery, by 1993, a previously worthless forest was valued at Rs 125 million.

Following the success of this scheme, village forest protection committees were started in other areas. Currently, schemes involving local populations account for the management of half of the forest area in the district. Not only has the scheme restored degraded forest—reintroducing trees such as mahua, kusum, amla, neem and karanj to the woodland—it has also benefited villagers economically, resulting in a significant reduction in seasonal migration out of these areas. Restored to effective control over their environment, people are no longer forced to become ecological refugees.

Both these alternative management systems indicate that popular participation in conservation is essential to containing (and may even reverse) ecological degradation. However, it is important to note that popular participation can only work effectively if all members of the community are considered stakeholders. A broadly equitable society is fundamental to guaranteeing conservation of the environment's shared resources.

Source: Gadgil and Guha 1995.

This is now widely repeated conventional wisdom. The poor and their civil society organizations need to be active participants. This view is supported both by practical experience and in theory. But for this to happen in a way supporting sustainable development several very profound and difficult obstacles have to be overcome first.

Finding Resources for Local Initiatives

Decentralization of decision making and of resources from central municipal governments to low-income neighbourhoods or "communities" in which the poor are concentrated seems an obvious requirement for sustainable development. This kind of "devolution" is inevitably strongly resisted by those who would have to surrender some of their control over wealth and power.

Low-income residents are usually poorly organized with little real control over their neighbourhoods. Criminal mafias often predominate. Some local governments of poor neighbourhoods, however, may enjoy active participation of low-income residents and their organizations. How will they be able to command the necessary resources and outside political support needed for implementation of effective programmes? Poor urban neighbourhoods have extremely limited resources to use or convert into monetary capital for sustainable development purposes. They may have a large available work force, but these can only be mobilized for developmental purposes

under certain circumstances. In poor countries, adequate material incentives to mobilize this work force often cannot be made available. Only in certain revolutionary contexts, such as China in the 1950s and Cuba in the 1960s, can alternative "moral" incentives be effective in mobilizing labour to support development efforts.

Hernando de Soto and his colleagues have estimated that the poor in developing countries have assets in "illegal underground economies"—in the forms of land, shelter, improvements, tools, enterprises etc.—worth trillions of dollars and many times the value of all foreign aid and investments (de Soto 2000). They believe that by providing the poor with secure property rights over these assets and removing bureaucratic obstacles to the poor becoming capitalist entrepreneurs, development would "take off" and poverty soon eliminated.

Such estimates of monetary value of the assets of the poor are dubious as are the possibilities of a burst of sustainable equitable economic growth arising from granting the poor legal property rights over these assets. Even forgetting these obstacles, however, how could the creditors, merchants, speculators and bureaucrats that now have "local" claims over these assets directly or indirectly through debts, contracts, "legal" titles, patronage and a host of other instruments be persuaded to cede them to the poor? De Soto's solution would require a profound social revolution. One wonders if the conservative dignitaries, such as Lady Thatcher and Milton Freidman who endorsed his book, have really reflected on the political implications of his recommendations. Reactions to attempts to provide the poor with legal ownership over assets they use or created have usually been violent in both urban and rural settings (Westendorff and Eade 2002; Barraclough 1999b).

A large proportion of the world's poorest people dwell in resource-poor rural regions. As was seen earlier, many were forced to migrate from better endowed areas appropriated by others. The hundreds of thousands of displaced peasants in Latin America forced to migrate to ecologically vulnerable forest frontiers are an example. Those already in poor regions face diminishing control over their natural resources and institutions. As in urban slums, decentralization of sustainable development policies to poor rural "communities" poses many dilemmas. In order to be supportive of sustainable development, decentralization would have to be accompanied by the poor attaining some degree of political power nationally and access to non-local resources that could not be found or mobilized in these "communities". This again is very conflictive, but otherwise democratic participation is virtually excluded.

Research on deforestation in the highlands of Guatemala further illustrates some of the difficulties raised by local power structures (Utting 1993). In Totonicapan, the indigenous community had managed its forests and other natural resources sustainably for centuries. When armed bark strippers and timber thieves threatened their livelihoods, the communities unarmed forest guards were powerless. The police, however, sided with the thieves, not the victims. Even so, this community did better than had the indigenous residents of Panzos some 200 kilometres to the east a few years earlier. When their land was coveted by commercial interests, they applied for legal titles under existing agrarian legislation. Notified that their titles were ready, community members assembled in town to receive them. There, they were accused of guerrilla sympathies and assaulted by the armed forces. Dozens of unarmed peasants

were killed. Many fled to the mountains where they barely survived during ensuing decades (Barraclough and Ghimire 2000; Valenzuela de Pisano 1996). Such anecdotes illustrate how difficult it can become to promote sustainable development policies in an unsupportive national and international context.

A case study of Lesotho in the Tanzanian Usumbaras reveals how a community had lost a large portion of its traditional access to natural resources through land alienation by outsiders for commercial agriculture and logging as well as for national forest and game reserves (Mascarenhas and Maganga 1991). A growing population controlling a shrinking area defended its livelihoods primarily by adopting more intensive agriculture. Community members entered new markets, sought off-farm work elsewhere for some family members and changed consumption patterns, but without lowering living standards. They enjoyed some technical and other support from sympathetic state agencies.

In the same country and time, however, Rufiji district experienced severe deforestation even though it was much less densely populated and its population was decreasing due to out-migration. The state agencies were less sympathetic and the community less cohesive. Each case has to be analysed in its context before generalization can be attempted. Any approach ignoring the uniqueness of each case will probably be counterproductive for sustainable development. This is perhaps one generalization that is almost always valid.

The degradation of urban Mar de Plata in Argentina accompanying declining ocean fish stocks was mentioned earlier. It provoked policy responses by the city's labour unions, numerous civic groups, businessmen, local governments and politicians (Allen 2001) (see box 6). There was little that could be done locally to protect and restore these ocean fisheries. They were being overexploited by fleets of high-tech industrial fishing boats from Europe and elsewhere. Strong national policies to protect fish stocks in Argentine territorial waters could have helped. On the contrary, the Argentine government seeking more exports and foreign investments encouraged the overfishing by adopting neoliberal policies. A similar disaster for local fisheries was occurring in Senegal for similar reasons (UNEP 2002). Collective action and protest by artisanal fishermen in Kerala, India, was a little more effective (see box 3a). Their gains were precarious and dependent on active and continued support by popularly based state and national governments (Kurien 1991).

The responses of the poor in developing countries are too highly varied and determined by particular contexts to be neatly classified. Adaptation of livelihood strategies and consumption patterns to changing circumstances are universal, but this is about the only generalization that can be made concerning them. Living levels in some places and times decline and at others improve.

Generating alternative sources of livelihoods for or by a poor community usually requires new investment, new technologies, new markets and other conditions that are hard to meet. Moreover, new sources of livelihood may or may not be consistent with sustainable development goals. Collective action by poor and oppressed groups is a necessary prerequisite in most situations for approaching sustainable development goals. It is by no means a sufficient one. Collective action by the poor can in many circumstances provoke violent repression leaving its participants worse off than

before. Frequently, their goals are not sustainable either socially or environmentally. In the longer term, however, collective organization and action are indispensable in positive reforms.

Box 6
The Argentine "fish war"

In 1991, the Argentine government adopted structural changes, which opened up the economy to global market forces. For the first time, fishing rights were granted to foreign long-range fleets and Argentine national enterprises began partnerships with European enterprises. These factors led to the depletion of fish stocks, in particular the Argentine hake, which until then had been the main commercial species.

The measures the government then employed to alleviate the crisis highlight the complexities of implementing environmental regulation policies. Following the collapse of hake populations, the Argentine government attempted to impose a system of closed seasons and quotas in defence of "national interests". Local firms, and workers joined forces with the state of Mar del Plata to form a coalition to fight the measure. They demanded the expulsion of the foreign fleet.

In January 1998, a new law was introduced with the aim of promoting the "sustainable development of the fishing industry". This proposed the preservation of natural resources and the promotion of the use of national labour by abolishing the previously unrestricted fishing rights and the establishment of a new system of individual transferable quotas to be allocated to each vessel or enterprise within the maximum sustained yield (Barraclough 2000:58). While heated negotiations continued, preventing the implementation of the quota system, increasing uncertainty about the sustainability of hake populations resulted in a "rush to fish", which aggravated the depletion of the stocks.

The national media gave massive coverage to the so-called "Fish War". Although the local industry reclaimed its exclusive rights over the fisheries, it was too late—the collapse of hake had already taken place. The locals opposed the government's attempts to introduce sustainable fishing laws, thereby threatening their own livelihoods. But the root cause of the depletion of fish stocks in Argentina was the opening up of the seas to foreign long-range fleets in the early 1990s. Increasingly, restructuring processes are leading to over-exploitation of certain areas and natural resources.

Source: Allen 2001.

Migration

A common local-level response to threatened livelihoods has always been migration. This is how Homo sapiens populated the earth. The rural-urban exodus is part of the demographic transition accompanying "urbanization", "industrialization" and "modernization" processes. This migration is in part due to the economic and social attractions of urban life and in part due to the expulsion from the countryside of large sectors of the poor peasantry. "Land enclosures" are occurring under varied guises in most developing countries. The enclosures in Brazilian Amazonia since the 1960s have been described as the "most massive in history" (Hecht and Cockburn 1990). Social conflict, exploitive repression and alienation or degradation of natural resources all interact to expel the rural poor to cities. Broad generalizations about

whether "push" or "pull" factors predominate are not very helpful as this depends on particular contexts.

The urban and rural poor occasionally have the possibility of migration abroad to a country offering opportunities to improve their livelihoods in some way. Rich countries, however, have well-enforced laws restricting immigration. To the extent it is permitted, the rich and the better educated are favoured. Entry of poor uneducated workers is particularly difficult. These restrictive immigration policies in rich countries are likely to become increasingly rigorous in the face of growing problems of unemployment, declining pay for the unskilled and difficult cultural integration of many immigrant groups. The neoliberal utopia of free movement between countries of goods, services and capital never was based on the real world. It is most blatantly exposed as being hypocrisy when poor countries are told to liberalize their markets for foreign goods, capital and certain services, but to keep their unskilled poor at home. The remedy, however, is not market fundamentalism but popularly based sustainable development strategies adapted to diverse contexts.

Neoliberal policies now imposed by rich countries on poor ones are inimical to approaching sustainable development. Local-level responses to social polarization together with environmental degradation accompanying such degenerative development processes have to be able to adapt to an infinite variety of historical and environmental contexts in order to be effective. National and international institutions and policies need to be flexible enough to encourage local-level equity, innovation, participation and productivity. Global problems may require local solutions, but local solutions usually require national and global policy and institutional reforms.

C. National Policy Responses

The Role of Nation States

The right of "sovereign" nation states to exploit their own natural resources pursuant to their own environmental policies was affirmed by UNCED. This right was reaffirmed in 2002 by the Sixth Conference of the Bodies of the Convention on Biological Diversity. Several NGOs claim that this seems to violate the convention itself (WRM 2002).

Nation states provide the legal basis for the present world system. The United Nations boasts over 200 "sovereign" member states. These include nearly all the world's population, most of its land area as well as its coastal ocean waters. The deep seas, the atmosphere and remote inhospitable land such as in Antarctica are still legally global commons, but recent trends have been towards their "privatization".

The present system of nation states and of interstate relations, generally held to have begun in mid-seventeenth century Europe, remains the dominant political institution organizing society. It provides the legal basis for public and private policies at all levels. It has a theoretical monopoly over the use of legitimate violence and of formulating and enforcing legislation. Local institutions are considered to be subordinate to the nation state, while global and regional "public sector" institutions are dependent upon interstate support. Coherent state policies and institutions are central for approaching sustainable development.

The nation state is said by many observers to be losing its customary powers to direct and regulate socioeconomic affairs. Modern transport and information technologies have left obsolete many traditional mechanisms used by states to enforce their policies. This is particularly true for some policies designed to protect selectively infant-industries, the environment, diverse social groups etc. Moving goods, capital, services, information or people across national frontiers has become cheaper and easier than before. Rigorous state policies to regulate such movements are becoming more difficult for developing countries to enforce. State regulation often becomes extremely difficult unless there is close interstate collaboration. This is particularly evident concerning financial movements that escape control of individual states.

That "globalization" associated with the widespread use of new technologies has led to a serious erosion of state power, however, is more debatable. Some states seem to have become more powerful as a result. Many weak low-income states today were even weaker in the past in relation to the great colonial powers. The nineteenth century opium wars forced China to open its markets to British opium dealers and other commercial interests. Early twentieth century military occupation by the United States of several small weak Latin American republics was in part to collect debts and assure cheap access to their resources and markets. Threats of economic sanctions and other instruments of "gunboat diplomacy" intimidated weaker states. This does not suggest these states had more control over their destinies in the past than they do now. In any case, the majority of today's sovereign nation states were simply colonial possessions of great powers or components of unstable empires and federations that disintegrated during the last century. Most of these states were constituted during the last few decades. To say that these new weak states have lost power to direct their destinies because of recent globalization trends seems rather exaggerated. Most never had such powers.

Some states have clearly increased their capabilities to influence socioeconomic trends during recent globalization processes. Rich OECD countries account for only one fifth of the world's population but for four fifths of its economic output. The United States alone accounts for over one fourth of world GDP, nearly half of its military spending, control over a major share of modern technology, but less than 5 per cent of its population.

Nation states, however, seem to have lost power to implement individually "progressive" or popularly based policies. The disapproval of investors and others influencing global markets would be turned against them in co-operation with the governments of the United States, the European Union, Japan and most other "developed" countries opposing any questioning of dominant present-day system of "monopoly capitalism".

To become consistent with sustainable development, globalization requires increasing transnational regulation of economic processes through both interstate and non-state democratic institutions. Rich industrial states, and especially the United States as the only remaining "super power", can decisively influence the agendas and activities of international bodies. In doing so, powerful nation states continue to act in pursuit of perceived "national interests" very much like empires and nation states have done

throughout history. The high aspirations associated with the ideals of the United Nations have not been realized in practice.

Environmental Protection Policies

Virtually every country now has some kind of legislation ostensibly designed to protect certain aspects of the natural environment. The World Bank virtually requires governments requesting Bank or IMF support to prepare "poverty reduction strategy" papers. With UNEP, UNDP, other international agencies and the Bank also urge them to prepare environmental protection plans.

Contrary to widespread opinion, current government concern over environmental degradation did not originate in 1972 after Stockholm Conference on the Human Environment. This conference and UNCED in Rio two decades later may have helped spread environmental awareness but they had both been spawned by growing concerns about increasing evidence of environmental degradation and its social impacts.

Environmental concerns and policies to deal with them are as old as human history. Colonial powers in the nineteenth and twentieth centuries had ambitious environmental programmes to protect nature from colonized subjects in many of their colonies, especially in Africa. They were often applied hypocritically to alienate land and other natural resources from control by indigenous people depending on them for their livelihoods. In the name of protecting nature, huge areas were seized and reserved for parks, game reserves, forests etc. excluding customary users. Many peasants were forced to provide labour for soil and water conservation programmes that in reality contributed nothing to meeting avowed objectives. The urban poor were frequently expelled from the slums that were their homes in the name of sanitation and the suppression of various "urban blights". Memories of these repressive colonial "environmental protection" policies left a deep distrust of environmental programmes in numerous newly independent states.

Environmental protection agencies and policies have been relatively successful in helping to check or reverse a few unsustainable trends such as urban air and water pollution in several countries, but especially in relatively high-income ones. Other trends in these same rich countries, such as ever-increasing greenhouse gas emissions, continued to worsen. Much depended on the mobilization of political support around specific environmental issues. Where broad-based multi-class support emerged, including important low-income as well as elite and middle sectors, as potential beneficiaries, strict environmental policies were feasible. Clean water, good sewage disposal and minimal health services in poor slums, for example, benefited the poor while also protecting the better-off from the spread of epidemics. Diminishing urban air pollution in Los Angeles by strict emission standards was feasible in part because most of the poor could still afford to own and drive a car. Some cities that were successful had good public transportation. High vehicle emission standards could not be feasible policy in Mexico City or Mumbai where the poor have to depend on highly polluting buses and other motorized vehicles to move around in the absence of efficient and affordable alternative means of transport.

Environmental agencies tend to be relatively weak in comparison to other state programmes with powerful well-organized constituencies. State ministries for commercial agriculture, industries, finance, the military and the like are usually much stronger. Which interest groups predominate always depends on specific circumstances.

Environmental policies are frequently ineffective in developing countries because they cannot be applied effectively by the state. Strict forest protection legislation is useless, for example, without political and administrative means to implement it. In the Brazilian Amazonia, national legislation stipulating that landowners should leave at least half of their area in forest is mostly ignored. Conflicting claims to land are backed by overlapping legal titles in a context of local power structures in which large estate owners and speculators predominate. These social relations exclude indigenous and other low-income peasant and worker majorities from real participation in governance. In any case, where legislation requiring half of each property to remain forested is actually enforced, it can easily be legally circumvented. The original owner, after clearing half the forest for pasture, can sell the remaining forested half to another owner, perhaps a close relative, who in turn can do the same until all the remaining forest disappears (Diegues 1992; Barraclough and Ghimire 1995).

Social conflicts generated by national policies ostensibly intended to protect forests, wildlife and other natural resources have been mentioned throughout this report. One could easily cite many hundreds more examples. National environmental protection policies are often contradictory among themselves as well as with macroeconomic ones. They frequently cannot be effectively implemented.

Rampant contradictions arise between national level economic "development" programmes driven by well-organized interest groups and the programmes required to reverse environmental degradation and protect livelihoods of low-income groups in diverse sub-national localities. There are also numerous contradictions between a nation state's environmental policies and its dominant social and macroeconomic policies. The latter are usually aimed at protecting the interests of mostly wealthy state support groups and speeding economic growth, not at protecting the livelihoods and environment of the poor.

Nonetheless, on balance the efforts of nation states to adopt and implement environmental protection policies have often been positive. Such policies can contribute to eventual progress towards sustainable development goals even when they fail. They can help increase awareness of issues and they can highlight contradictions. The current refusal of the United States to participate in the admittedly defective and inadequate, but still progressive, Kyoto Protocol is disheartening for advocates of more sustainable development. Bringing to the forefront major contradictions between present destructive trends and longer term sustainability may contribute to social forces advocating more profound systemic reforms. It can also help to call attention to some major weaknesses of the Protocol. Among these are the implicit assignments of private property rights to the atmosphere instead of affirming that it is a global commons to be administered democratically. This would also imply that the rights to emissions of greenhouse gases would be assigned on a per capita basis instead of on current or historical rates of pollution per country.

Macroeconomic Contradictions

Multiple contradictions between global trends and the requirements for more sustainable development have been highlighted throughout this report. Such worrisome trends have been particularly evident for those developing countries whose ruling elites willingly embraced, were persuaded or forced to adopt policy packages of "structural adjustment". These policies were pushed by the International Financial Institutions and a few leading donor governments. These neoliberal policies tended to have deflationary and many other negative socioeconomic and environmental impacts in most developing country contexts. Each case was different. Policies of decentralization, liberalization, privatization and "social safety nets" (that were added later) were invariably recommended as major components of the "Washington Consensus". Such policies were simply unrealistic and ill adapted to the needs of particular developing countries if their governments were truly attempting to promote relatively equitable, autonomous and sustainable economic growth.

All present-day so-called developed countries have made use of government policies selectively in order to protect their industries and agriculture. They have regulated trade, finance, prices etc. in various ways at different times.[14] In the real world, history is always much more complex and contradictory than neoliberal and other abstract models can suggest.

"Capitalist" Switzerland and "socialist" Cuba, for example, are sometimes both acclaimed for having been leaders in adopting policies that promote "sustainable agriculture" (see Rosset 1998; Pretty 1999; Rosset 2001). In both countries, the natural environment is rather carefully protected and the welfare of small farmers and farm workers is a central concern of several national policies.

Contrary to "free market" ideals, Switzerland's farmers and farm workers receive what are probably the highest direct state "subsidies"[15] per capita anywhere (Barraclough 2000). The Swiss state has historically been extremely concerned with maintaining a high capability for quickly increasing domestic food production in case war or some other disaster might curtail food imports on which the country is highly dependent. Democratic participation of the rural poor in elections helps make them politically relevant, while history gives rural voters disproportionate weight nationally. Also, pressures of well organized commercial farmers, agro-industries,

[14] The metaphysical myth of unregulated markets eventually leading to optimum prices and resource allocation with sustainable growth is propagated by both the naïve and by cynical interested parties. This is no place to criticize such "market fundamentalism" in depth. One only has to recall the policy dissonance within nation states everywhere whether their elites claim to be guided by the neoliberal or some other utopian model such as all-embracing state planning or "libertarianism".

[15] The term "subsidy" can be very misleading. Subsidies imply government grants to promote activities deemed helpful for promoting "national interests". They assume a wide range of forms under multiple disguises. Some economists define a subsidy as the difference between the "subsidized" price and the "free market equilibrium" price. As argued earlier, this concept of "subsidy" is not useful for most purposes. Whether a grant or other help is considered to be a subsidy or an investment is a political issue. The problem for sustainable development is to distinguish between "good" and "bad" subsidies and to encourage the former and eliminate the latter. No modern economy would function without massive "subsidies". According to World Bank estimates, over half of many developed countries' central government expenditures were classified as "subsidies and unrequited transfers" (World Bank 2000:table 17). These subsidies and unrequited transfers amounted to over one third of GPP in some OECD countries.

peasants and environmentalists help make such subsidies politically feasible. The country's high average per capita income facilitates the government's policies favouring "sustainable agriculture".

In "socialist" Cuba, environmental degradation, social polarization and marginalization were associated with pre-revolutionary capital-intensive production and processing of sugar and a few other export crops. This commercial agriculture for exports primarily benefited foreign investors, and a small domestic elite. Its negative legacy for the poor endowed the revolutionary forces with concern for social justice and the environment. Many social inequities were quickly diminished following the revolutionary victory in 1959. Several environmental protection measures were also initiated. Nonetheless, environmentally unsustainable capital-intensive high technology agriculture continued to dominate large-scale farming during three ensuing decades. Pre-revolutionary Cuban agro-exports and imports had been integrated into United States markets. After the revolution, the Cuban economy became increasingly integrated into the Soviet bloc. Sugar exports continued to be a priority and to depend on capital-intensive high-tech agro-industrial production practices.

The collapse of the USSR precipitated a serious economic crisis. Agricultural output fell by almost two thirds between 1990 and 1995 in the absence of crucial imported inputs such as petroleum, chemical fertilizers, pesticides and feed grains. A major effort was undertaken to increase food production using environmentally sustainable technologies supplemented by the introduction of limited market incentives and the subdivision into smaller co-operatives of many large state farms. These policies were rather successful in halting further overall decline of output and of increasing the production of many key basic foods (Barraclough 1999a; Rosset 2000; Funes et al. 2002).

Cuba's agricultural output in the late 1990s, however, remained less than half of what it was before the USSR collapsed. Like most neighbouring Caribbean and Central American countries (and also like Switzerland) it remains highly dependent on food imports. Cuba's inputs and imports are impeded by the United States embargo at a great cost to the Cuban economy. Since 1992, food availability per person had to be sharply curtailed. The rationing system, however, helped avert worse acute hunger and malnutrition although the gap widened between food consumers with access to United States dollars and those without.

If the embargo were ended, Cuba would soon have to revert to many environmentally unsustainable agricultural practices in order for Cuban sugar and other agricultural exports to be competitive in world markets. Continued policies giving top priority to sustainable agriculture depend not only on "political will" nationally, but also on reforms in the global agro-industrial system.

Social safety nets: Social policies were required to protect low-income groups whose poverty became more visible, and in many cases worse, during "structural adjustment". Big aid donors and creditors realized that social protests stimulated by restrictive macroeconomic policies and deterioration of social services threatened the continuation of neoliberal policies in many poor countries. A few donors had promoted "social investment funds" (SIFs) in selected developing countries since the

1960s, but they only became mainstream donor policy after the 1980s. Donor contributions financed semi-autonomous SIFs to be administered outside the constraints of traditional state bureaucracies. SIFs were supposed to make social investments benefiting the poor rapidly and efficiently. In theory at least, such investments would have been chosen with the participation of the poor and in accord with their priorities.

In practice, these "social safety nets" were seldom very effective in reaching the poor, and especially the poor majority located in rural areas. SIFs turned out to be as vulnerable to corruption and political manipulation as were other state agencies. Most developing countries lacked the capacity and infrastructure to administer SIFs efficiently. Donor support for SIFs often undermined needed help for making established state ministries more efficient and accountable. Instead of being driven by the demands of the poor, SIF agendas were more often set by the availability of donor funds and also by the priorities of their administrators (Barraclough 2000).

The most effective social safety nets for the poor in poor countries have almost always been secure access to the natural resources required to maintain livelihoods. Massive agrarian reforms in countries such as China (including Taiwan), South Korea and Viet Nam in Asia were prerequisites for future accelerated development. They raised the threshold of mass rural to urban migration by providing potential migrants with at least marginally better security and livelihoods in rural areas. Popularly based development strategies helped stimulate investments in rural infrastructure and rural industries. The same held for many agrarian reforms in Latin America and elsewhere. In spite of frequent abuse, corruption and deviations from declared objectives, land reforms proved to be effective in extending "social safety nets". Social safety nets in low-income developing countries somehow have to provide the rural poor with secure access to land, water and other natural resources vital for their livelihoods. This almost always implies compulsory redistributions to the poor of assets previously controlled by the rich. Such redistributions and the degrees of compensation for those whose lands are expropriated have to be sanctioned and enforced by state policies (Barraclough 1999b).

National policy dissidence is evident nearly everywhere. The state has to respond to support groups and clienteles with diverse and often conflicting interests, values and goals. A dominant development model, however, usually emerges to give some kind of national strategic coherence. Such strategies can often be better detected by hindsight than foresight. Since the 1980s, neoliberal models have been dominant. Transitory strategic coherence about development goals and policies at national levels, however, seldom mean that such national strategies were also coherent with the goals of sustainable development.

D. Global Policy Incoherence

Limits to Interstate Governance

There is no world government. The United Nations is an organization of "sovereign nation states" each with its own perceived national interests and objectives. The seventeenth century European interstate system exists now on a global scale. Each country in the United Nations General Assembly has a formally equal note regardless

of its size, population and wealth. The General Assembly, however, has no enforcement powers.

The United Nations Security Council is more relevant for international policies. Here the United States together with four other "big" victors of the Second World War are permanent members having veto and limited enforcement powers over some key United Nations activities. Real power in such interstate bodies, however, depends mostly on resources together with economic and military strength. It remains concentrated in the hands of a few industrially or militarily strong nations. These are now largely dominated by the United States which, for a brief and transitory historical moment, is the world's only "superpower".

The United Nations at UNCED reached a formal consensus about the broad goals of sustainable development, as was seen in chapter 1 of this report. These goals, however, are open to highly divergent interpretations. What policies do they imply for governments and other organizations in practice in diverse specific contexts? Uncertainties and divergent interests together with incommensurable values and perceptions make agreement at global levels impossible about the purposeful courses of action each state and other major social actors should follow to approach sustainable development goals.

The possibilities and constraints facing diverse "agencies" at all levels imply the need for real participation by all "stakeholders" in the analyses and negotiations leading to policies. The concept of "stakeholder ownership" pushed by the World Bank is a timid step in the right direction. In the Bank's view, however, the broad parameters for policy are constrained by the "technical" limits of what is possible within the limits of existing world financial, economic and political system. "Reforms" that the Bank deems realistic and acceptable would require only marginal changes in social relations. Sustainable development, however, requires systemic reforms leading to a redistribution of power, income and wealth. Approaching sustainable development implies profound structural changes ensuring poor people and poor countries' rights and opportunities to pursue this goal.

A very brief review of a few proposed international responses to environmental degradation suggests some of the difficulties. Attempts of interstate organizations, transnational business corporations and NGOs to promote business responsibility, eco-efficiency, codes of conduct and standards illustrate global strategic incoherence.

Business Responsibility and Ecoefficiency

The growing concentration of global trade, finance and, to a lesser extent, production under the control of a relatively few large transnational corporations (TNCs) was briefly discussed earlier in chapter 2. The activities of big TNCs, especially in developing countries, are frequently associated with processes generating social polarization and environmental degradation. This has provoked sharp criticism from many NGOs and politicians.

A few big TNCs have responded to their self-perceived vulnerability to demands for stricter public regulation and consumer boycotts by proclaiming policies of "corporate social and environmental responsibility" (CSER). These "voluntary" corporate

policies of greater responsibility include "partnerships" with public organizations and NGOs, codes of conduct, multistakeholder initiatives, minimal social and environmental standards etc.

Experience to date of voluntary initiatives to promote CSER has not been very encouraging. One "successful" initiative has been the Forest Stewardship Council (FSC) founded a decade ago as an international labelling scheme. By late 1991, a little over 2 million hectares (about 1 per cent of forests outside of protected areas) in over 300 logging operations had acquired FSC certification. Experience with other initiatives such as "Social Accountability 8000 (SA 8000) and ISO 14001 have been similarly ambiguous. So too have TNC agreements with International Trade Secretariats (ITSs) and company codes of conduct. TNCs seem far more ready to adopt policies affecting particular practices such as sanitation or worker safety measures than to accept union demands for collective bargaining and respect for human rights (Utting 2002b).

Protagonists and prophets of "multistakeholder" business responsibility depict it as a promising highway towards sustainable development. They claim that TNCs committed to CSER would take seriously their need to adhere to a corporate "triple bottom line". By this, they mean that corporations pursuing sustainable development would give the same weight to improving social conditions and protecting the environment as they would to maximizing profits. They fail to explain, however, how this would be done in practice or what criteria would be used in judging social and environmental performance.

In what are now rich capitalist countries, rules emerged enforced through convention and legislation during several centuries, regulating the activities of business enterprises, their obligations to owners, other investors and consumers. Among other things, such rules codified accounting practices, property rights, contracts and financial transactions of business enterprises. These rules are still evolving. Witness, for example, the recent legal changes in proposed OECD countries intended to deal with "creative accounting practices", "money-laundering" and "intellectual property rights" in an increasingly interdependent world system.

How improved social and environmental standards should be incorporated into the "bottom line" of profits and returns on investments and into business enterprises accounts is not intuitively apparent. Imposing constraints on corporate profit making from unsustainable social and environmental practices through state legislation with penalties for violators has proven effective in the past in countries where there has been a strong supportive institutional framework. "Voluntary initiatives" by TNCs excludes this kind of solution in principle. As in earlier times, however, large efficient TNCs attempting to enforce voluntary CSER may eventually call for state regulation themselves in order to check competition from "unscrupulous" rivals.

In any case, no matter how committed a large corporation's managers may be to good ecological and social principles, they will have to remain competitive or they will soon be replaced. This places sharp limits on observance of a corporate "triple bottom line" in a context that gives priority to short-term profits and that does not penalize negative social and environmental externalities.

The possibility of combining corporate "profits", "social improvement" and "environmental protection" in a single numerical index should be rejected on both conceptual and practical grounds. As emphasized throughout this report, uncertainties and incommensurabilities make such an index theoretically useless. It would blur conflictive political issues while pretending to sharpen them. Many vital environmental services from the planet's natural life support system cannot be valued in monetary terms. Without clean air and water, soils, a supportive climate, photosynthesis etc., life on earth as we know it would simply disappear. Such major components of our planet's life support system are not mere "factors of production" that could be substituted by others. Instead, they are preconditions for sustainable production and consumption systems by human societies.[16]

Similarly, improving social conditions of TNCs' direct "stakeholders" can sometimes help in approaching sustainable development "social goals" only in limited ways. It cannot substitute for "full employment", provision of adequate "public goods" and high quality sustainable "economic growth". These all require popularly based development strategies.

New Technologies and Ecoefficiency

Technological innovations and their diffusion have constituted driving forces contributing to social change since the beginning of history. At the same time, innovations in social relations have been a major force driving technological inventions, new technologies and their diffusion. This complex mutual interdependence between technology and institutions is frequently forgotten by analysts giving the highest priority to one or the other in explaining history (e.g., Fukuyama 2002; Shiva 1992).

UNRISD's research into the social impacts of the so-called "green revolution" illustrated this interdependence of technology and institutions in numerous countries where case studies were carried out.[17] Clearly, the social impacts of the new high-yielding rice and other foods were largely determined by the institutional context of each country and locality. But these institutional contexts were also being modified by the diffusion of these and other new technologies. The "green revolution" experiences of the 1950s, 1960s and 1970s have been widely documented, discussed and debated. UNRISD's conclusions about their frequently contradictory impacts depending principally on institutional and policy contexts are now widely accepted.

[16] Some NGOs and public agencies are experimenting with construction of "satellite" national accounts that attempt to show how GDP would be affected if environmental "externalities" were taken into account. This can be a useful educational exercise, but little more. It has to be based on assumptions that ignore uncertainties and incommensurabilities. Such estimates also have to assume some degree of substitutability between "natural" capital, on the one hand, and "man-made" and "human" capital, on the other. In any case, as noted in chapter 2, they would not affect TNC bottom lines if accounting practices and legal codes were not correspondingly reformed (Barraclough and Ghimire 1995). There may be limited substitutability at the "margin", allowing prices to be arbitrarily estimated for some components. One should recall, however, that over half of the Earth's primary production is estimated to already be appropriated by human uses (Haberl et al. 2002).

[17] See Pearse (1980), as well as more than 26 other volumes published based on this UNRISD research programme.

Spectacular new developments in information technology, nanotechnology and biotechnology during the late twentieth century have stimulated many speculations about their implications, good and bad, for human societies. Similar speculations about the social impacts of interactions between institutions and technologies were probably made by some visionaries since the beginning of human history. Optimists have projected copernicas of plenty benefiting all, while pessimists have emphasized countless all too apparent dangers. Since history has provided abundant examples of benefits for some and the reverse for others, resolution of the issue always remains ambiguous.

Utopias (wonderful places) or dystopias (awful places) stimulated by technological changes have been staple themes for science fiction writers. They have also provided metaphors during several centuries for prophets and political leaders attempting to mobilize support for their policies. Sir Thomas Moore's sixteenth century story about the island of Utopia with its perfect society was said to have been inspired by the fifteenth century European "discoveries" of the rest of the world and its wonders. These same "discoveries", however, were made possible in large part by advances in European navigational and armaments' technologies. These "discoveries" were accompanied by plunder, conquest, impoverishment and virtual extermination for many indigenous peoples as well as more benign consequences for others. Diffusion of new technologies have invariably been accompanied by contradictory social impacts in the past. Technological optimists asserting that the obstacles to sustainable development in the early twenty-first century can be overcome principally by adoption of new technologies should be asked to bear the burden of proof.

Actually, one now finds very few serious proponents of purely technological solutions to social problems. Ambiguous consequences emerged from mid-twentieth century programmes to end hunger by introducing "green revolution" technological packages in poor countries. Even more ambiguous were results of efforts to end industrial societies' dependence on fossil fuels by switching to energy obtained from nuclear fission and eventually from nuclear fusion. These recent experiences as well as earlier ones have left many specialists more cautious about technological "silver bullets" and more aware of the role of socioeconomic structures and of environmental constraints. Misleading simplifications about possibilities for technological solutions to social problems come mostly not from scientists but from salesmen, politicians and other promoters of particular causes and special interests. The weaknesses of the solutions serious technological optimists propose are to be found primarily in their vagueness about the social forces that might make effective the profound systemic reforms that would be necessary for the new technologies to contribute towards sustainable development.

Some of the discussions taking place about the possibilities offered by new technologies to approach more sustainable development were mentioned earlier in chapter 2. So too were several of the obstacles associated with these same technologies. One of the most eloquent comprehensive and optimistic presentations of possibilities offered by new technologies already known and sufficiently tested to be used in practice in certain contexts was made in the recent book, **Natural Capital**, published in 1999 (Hawken et al. 1999) which will be briefly discussed a little later.

The 1999 issue of Dag Hammarskjöld Foundation's **Development Dialogue** was dedicated to analyses and speculations of social implications of a few new technologies. The title of this issue was "The ECT Century: Erosion, Technological Transformation and Corporate Concentration in the Twenty-first Century" (Mooney 1999). In contrast to Hawken et al., Mooney came to depressingly pessimistic conclusions about the social and environmental impacts of many of the same new technologies.

At first glance, a reader gets the impression that the authors of these two publications hold very contradictory conceptual frameworks and factual evidence. Closer examination, however, reveals that the authors are in basic agreement on many fundamental core issues. Mooney imagines the dreadful consequences that could occur if the new technologies are used primarily for private profit within the present global institutional context. Hawken, Lovins and Lovins also believe the new technologies could be disastrous for society if adopted in the absence of profound policy and institutional reforms. The major differences between the two analyses seem to be in their optimism about bringing about fundamental changes in human relations and policies. Their assessments of the possibilities of the new technologies in contributing to social forces attempting reforms, and about the interest groups that could take a lead in bringing them about, differ widely.

Mooney foresees continued global erosion of biodiversity, soils, other natural resources, specialized indigenous knowledge, equity and human rights. He emphasizes that new technologies introduced into a context of inequitable unjust institutions (social relations) exacerbates the gaps between the rich and the poor. He concentrates on the likely impacts of the new technologies in existing social contexts, and focuses on the probable social consequences of improvement and diffusion driven by the search for short-term private profit of four new technologies. He concentrates on: biotechnologies, nanotechnologies (the purposeful manufacture of molecules), informatics and neuroscience. He emphasized that these technologies are all vulnerable to oligopoly control by a few big high-tech TNCs.

Mooney fears that vanishing biological resources together with the spread of these new technologies will accelerate global control of people's livelihoods by techno-bureaucracies primarily created and motivated by a search for private profits. These techno-bureaucracies, in tandem with large corporate investors, are seen by the author as the core components of the social forces driving socioeconomic and political changes in the early twenty-first century. The social concerns about human rights, poverty elimination and environmental protection at the core of sustainable development are likely to be left by the wayside unless powerful countervailing social forces are mobilized. The author proposes a United Nations Human Rights/Erosion Inventory, an International Convention for the Evaluation of New Technologies, and a Special Session of the United Nations General Assembly—Conservation, Control and Use. He apparently hopes that such United Nations initiatives could contribute to mobilizing needed counteracting forces.

Hawken, Lovins and Lovins, share a great deal of Mooney's pessimistic assessment of past socioeconomic and environmental trends. They warn that "Without a fundamental rethinking of the structure and the reward system of commerce, narrowly focused eco-efficiency could be a disaster for the environment by overwhelming

resource savings with even larger growth in the production of the wrong products, produced with the wrong processes, from the wrong materials, in the wrong place, at the wrong scale, and delivered using the wrong business models . . .” (Hawken et al. 1999:x2x1). They fear that eco-efficient production by itself could become an enemy of a durable economy. They go on to present four “interdependent principles” of “natural capitalism” and for a “New Industrial Revolution”.

The authors recognize that in the past capitalism has often contributed to harmful social and ecological degradation. They believe the planet’s life support system is really invaluable because there can be no substitute. Their crude rough estimate of monetary value of current annual environmental services to the global economy would be about the same as annual global GDP. This contribution depends on “natural capital” that is being depleted. Business and other accounting systems, they say, will have to be reformed to reflect environmental and social costs and to reward productive investments in “social” and “natural” capital. Also, they write that “economic and environmental sustainability depends on redressing global inequalities of income and material well being” (ibid. p.9). They propose the need for systemic reforms to encourage the further development and wide diffusion of new technologies already available. Radically improved productivity of all resources could increase employment worldwide while reducing poverty and pollution. “Biomimicry” (using nanotechnology) could help eliminate all waste. A “service and flow” economy would lead to new producer-consumer relationships, new values and reformed property rights encouraging a shift in emphasis from quantity to quality of goods and services to one on quality and well-being. Finally, there would be massive investments in “natural capital” so that the “biosphere can produce abundant ecosystem services and natural resources”.

The authors detect hopeful trends towards adoption of these “principles of natural capitalism” (by “trends”, however, they seem to mean some enterprise somewhere has successfully applied one of the new technologies). They do not attempt to identify the “social actors” who could and would bring about the needed structural reforms, but they seem to imply that corporate entrepreneurs and technocracies would have leading roles.

The authors call this new social system “natural capitalism”. This claim seems to be based on the fallacious notion that the essence of “capitalism” consists principally of markets and on respect for “private property rights”. In a historical perspective, however, the system they propose seems as distant from “capitalism” as “capitalism” does from “feudalism”. “Utopianism” would be a more accurate term to describe the social transformation they foresee. Such utopian dreams of social justice are also needed to provide hope and energy to struggle for a better society.

Chapter 4
In Search of Strategic Coherence

This report has noted an absence of the strategic coherence among policies at all levels that could contribute to more sustainable development. But the task of building a coherent global strategy would still encounter conceptual ambiguities; divergent interests, values and perceptions; uncertainties; contradictory processes and trends; and conflicting policies. Can the Johannesburg conference contribute to a more coherent global strategy?

A. Towards Common Goals with Differentiated Responsibilities

"Common but differentiated responsibilities" was the diplomatic phrase adopted at the Rio Earth Summit to cover up some of the huge differences among governments about sustainable development issues. Representatives of many nation states and of other social groups and organizations at the UNCED conference in Rio correctly perceived vastly divergent resource endowments, distinct histories and institutions, divergent levels of industrialization and wealth and highly varied power relationships among states and their social groupings. This meant that perceptions, needs and capacities in respect to approaching sustainable development would necessarily vary widely with each place and time.

A broad agreement about sustainable development goals is feasible if one does not try to be too specific. The policies and institutional arrangements appropriate for approaching such general goals will inevitably depend on each particular situation. Recognizing explicitly these vast divergences in needs, opportunities and capacities at the World Summit on Sustainable Development is a prerequisite for forging a coherent global strategy by international organizations to approach goals of sustainable production-consumption patterns, equitable social justice and environmental protection.

In the current global context, a coherent strategy to approach sustainable development led by the United Nations probably should focus primarily on reaffirming these common goals. These have already been endorsed at several levels. They include more sustainable production-consumption patterns, greater equity with social justice together with the protection and enhancement of the Earth's ecosystems. Appropriate policies and institutions to approach these goals will necessarily diverge widely for each country, locality and time. An attempt to impose any particular sets of policies and institutions, such as those implied by the "Washington Consensus" or "structural adjustment", are foredoomed to be incoherent.

As has been shown throughout this review of analyses, data and case studies, so-called "best practices" may in reality be worst practices for advancing towards sustainable development, depending on particular contexts. "Trade liberalization" may encourage economic growth in one context but be negative in another, but in any event is unrealistic if it implies market fundamentalism. Democratic decentralization of the state's administrative functions and its resources to local communities is one of the goals of sustainable development. The impacts of such decentralization, however,

may be needlessly harmful if done in a context of authoritarian abusive and highly inequitable local power structures.

More fundamentally, the United Nations is not a world government but an intergovernmental body. It depends on member governments for financial resources, political direction and support. Member governments have equal votes but they possess exceedingly unequal influence and power. Member governments tend to use the United Nations to advance their own perceived national interests instead of the ideals of the United Nations Charter.

In the present global context, the United States is the world's dominant power. It is closely allied on most fundamental issues with the rich OECD states including the European Union and Japan, as well as other more transitory trading partners or clients. In such a situation, it is not realistic to view policies advanced through the United Nations, the Regional and International Financial Institutions (IFIs) and other intergovernmental bodies as necessarily supporting the goals of sustainable development. These organizations are not yet democratically accountable to the world's peoples, and especially to the poor and powerless. Policies of international organizations will tend to support the existing global system. They could, however, promote reforms that would provide this system with greater popular legitimacy.

A coherent global strategy in support of sustainable development cannot be primarily prescriptive telling governments what policies they should implement. On the contrary, such a strategy should aim to encourage governments and other organizations to adopt policies and institutional reforms that directly contribute to reaching sustainable development goals including those incorporated from the United Nations Millennium Declaration and the Universal Declaration of Human Rights. Such a strategy should also highlight contradictions between policies of both public and private organizations at all levels, on the one hand, and the goals of sustainable development, on the other.

Intergovernmental organizations such as the United Nations and IFIs have to depend ultimately on the political will and financial economic and military clout of their most powerful members to finance and enforce their policies. This dependency on a few big powers could be reduced to the extent these international organizations can evoke voluntary co-operation. Such co-operation can sometimes be increased by exposure to public pressures stimulated by efforts of public interest groups to "name and shame" non-cooperating governments, private corporations or others.

A principal implication of these observations is that the goals of sustainable development as well as the opportunities and obstacles for approaching it should be openly discussed on a continuing basis in decision-making arenas at all levels. Local neighbourhoods and municipalities, trade unions and consumer groups and countless other sub-national, national and international organizations should keep discussions of sustainable development high on their agendas. The World Summit could help facilitate such critical discussions of these issues by explicitly recognizing their importance and calling for international support.

Representatives of some rich country governments have suggested that WSSD should not discuss trade and human rights issues as these were comprehensively dealt with in

other recent international summits. This is a mistaken view. Issues of international trade and of observance of universal human rights are at the heart of the concept of sustainable development together with those of environmental protection, social justice and sustainable patterns of production-consumption. Of course, these issues have been dealt with in other fora, but not primarily with a focus on sustainable development as the overarching goal. Multilateral agreements and treaties dealing with the protection of the natural environment and universal human rights, for example, should not be subordinated to trade agreements negotiated in the WTO or other bodies without a principal mandate to deal with these issues. On the contrary, they require new institutional arrangements that would provide international organizations dealing with social, environmental and sustainable production-consumption issues with the necessary resources and the same status as those dealing with trade and financial matters. How to do this should be a topic discussed in Johannesburg.

B. Dilemmas in Striving for Decentralized Democratic Governance

Equitable democratic participation of all people in governance at all levels is an integral component of the concept of sustainable development. It is affirmed in the Declaration of Universal Human Rights as well as that of the Millennium Summit. This implies, among many other things, decentralization of decision-making, administration and resources to the lowest level of government feasible. This subsidiarity principle, however, is extremely difficult to apply in practice in a corporate-driven globalizing world system. On the contrary, control of financial-economic resources and modern technology has been becoming more and more concentrated in the hands of a few big TNCs based in and protected by rich nation states.

The key questions inherent in attempts to apply subsidiarity principles in practice are as old as human history. Who (what social actors) makes the rules at each level of governance? How do diverse social groups share the costs and benefits associated with "development" processes? What social forces would be capable and willing to undertake the policy and institutional reforms needed to promote more sustainable development?

As emphasized throughout the foregoing research review, decentralization of government that is not accompanied by a corresponding decentralization of effective political and socioeconomic power and resources can be inimical for approaching sustainable development. Authoritarian exploitive local power structures may be reinforced. Resource poor communities can be left to "solve their own problems" with no authority or means for doing so. Organizations with concentrated economic power, such as some big TNCs, can have easier access to cheap local natural resources, labour and possibly emerging markets. With mere decentralization of central governments, in most contexts TNCs could better minimize threats of countervailing power mobilized by progressive national public agencies, labour confederations, consumer organizations, NGOs and political parties.

The challenge of achieving greater popular participation through democratic decentralization should be high on the sustainable development agenda. Greater emphasis should be placed, however, on this being an integral part of a much broader

process of policy and structural reforms at all levels. Climate change, biodiversity loss, observance of universal human rights, greater socioeconomic equity and sustainable production-consumption patterns, for example, are all global issues that should be integrated with those of decentralization. These issues all interact. They have to be confronted in a holistic meaner in local, national and international political arenas.

The Alternatives Committee of the International Forum on Globalization summary report devotes a chapter to "The Case for Subsidiarity: Bias away from the Global toward the Local" (Cavanagh et al. 2002). It calls for economic systems favouring local production and marketing. It also recommends democratic regulation of financial markets and explicit accounting for "natural capital".

These goals are fully supported by this review of research. The "Alternatives" report, however, pays insufficient attention to how this might be done in practice. What said forces could contribute in concrete situations? The report brushes aside some of the difficulties of decentralization discussed in earlier chapters of the present paper. It dismisses them as being criticisms that can be overcome in practice. The same summary report proposes sharply limiting corporate power, making economies more responsive to human needs. All this is necessary and desirable. But what social forces are going to be willing and able to attempt to take on these essential challenges?

C. Contesting Neoliberalism and Market Fundamentalism

An old saying tells us that markets make good servants but poor masters. This is consistent with the case studies and other research reviewed in this report. Market fundamentalists take the reverse viewpoint. World markets are deemed to be the best ultimate arbitrators in determining resource allocation and economic activities.

Many of those advocating liberalization of markets for goods, services and of capital movements would deny being market fundamentalists. They accept the need to regulate selectively international movements of people (immigration), and of capital movements. Many would accept policies to provide "temporary" protection for selected vital national industries. A few neoliberals also criticize granting monopoly rights for a couple of decades to the holders of trade-related intellectual property rights (TRIPS) when this leads to making needed drugs becoming unaffordable for the poor. They would also accept the need for selected "subsidies" and the usefulness of prudent deficit public spending during recessions and the prohibition of trade of narcotic drugs, for example.

Nevertheless, there is a tendency for neoliberals and even of some of their "social democratic" critics to fall back on market fundamentalist logic in defending or rationalizing many neoliberal policies. A good example would be "structural adjustment" programmes being pushed on many developing countries by IFIs and other creditors or donors. These almost invariably call for "liberalization", "privatization" and reduction of government deficit spending. As has been seen throughout this report, these policies have frequently led to socioeconomic impacts that were not supportive of sustainable development.

The research reviewed above suggests the need for a more pragmatic and nuanced approach to policy and institutional reforms. "Decision makers" should critically analyse proposed policies in specific contexts. Such analyses are required in order to assess their probable impacts of these "reforms" for diverse social groups and hence for the social, economic and environmental goals of sustainable development. There should be no dogmatic presupposition about these benefits and disadvantages being associated with particular ideological labels. Selected regulatory measures such as tariffs and subsidies to protect small food producers may be necessary in some situations but only a second best solution in others. One has to ask what are the consequences of alternative approaches to protection and subsidies in each specific case.

A recent report by Oxfam entitled **Rigid Rules and Double Standards: Trade, Globalization and the Fight against Poverty** (Oxfam International 2002) illustrates the dangers of unintentionally accepting some market fundamentalist premises even by progressive and fierce critics of neoliberal policies. The Oxfam publication makes many excellent points. In particular, it criticizes protection by developed countries of their agricultural and textile markets at the cost of poor countries. Worst offenders include the European Union, Japan and the USA. High subsidies to domestic producers together with other measures restricting market competition from producers in developing countries are contradictory with neoliberal advocacy of "free trade". Moreover, high subsidies to producers in developed countries cannot possibly be countered by compensatory ones in poor countries. The Oxfam analysis recognizes the multiple complications and obstacles faced by developing country governments attempting to use trade as a powerful motor to reduce poverty. In this it is a very useful contribution. But it leaves unanswered the criticisms market fundamentalists often make of "soft" neoliberals willing to compromise doctrines of free trade with political realities. On the contrary, Oxfam seems to accept some market fundamentalist premises in condemning all protectionist regulations and subsidies inhibiting access by poor country exporters to rich country textile and agricultural markets.

By focusing principally on trade, Oxfam's report can give the impression that it also sees obstacles to trade as the principal ones faced by poor countries trying to eliminate poverty. It seems to suggest that barriers to agricultural and textile exports from poor to rich countries should be viewed as the central issue in the pursuit of sustainable development. This trends to legitimize powers given to the WTO to enforce the opening of developing country markets to competition from TNCs and other rich country-based suppliers of goods and services. In criticizing rich country selective protectionism and subsidies it implicitly seems to accept neoliberal premises in favour of free trade as a goal in itself. This would limit the policy options available to governments of all poor countries that are trying to develop coherent sustainable development strategies.

The Oxfam analysis could be maliciously interpreted by market fundamentalists as endorsing world market prices as the theoretical norm against which subsidies and other trade policies should be judged. World market prices are "real" and have to be taken into account. Similarly risks of war, corruption, mafias and the like are also real. This does not imply that they are somehow a metaphysical norm against which "price

distortions" and "subsidies" should be ultimately measured.[18] On the contrary, the world price system reflects existing power relations and distributions of wealth. It has to be regulated and tamed to become a good servant of sustainable development. This implies "good" protectionist measures and subsidies would have to be a component of many public policies that are strategically coherent with the goals of sustainable development.

A "level playing field" for poor and rich countries is unattainable in the existing world system. The big explicit "subsidies" rich countries customarily offer to their producers could easily be replaced by others that would be consistent with WTO rules if there was sufficient political pressure from special interest groups or other constituents. Poor countries will often have to use selective protectionist measures to advance towards sustainable development goals. There is no way that they could match the implicit and explicit subsidies and other support available to producers in rich countries.

D. Reconciling Property Rights with Sustainable Development

The research reviewed above highlights the central role of property rights in dealing with issues of sustainable development. This is virtually a definitional truism. Property rights comprise the rules regulating the terms of access by individuals, social groups and organizations to socially valued resources. They are often described as bundles of rights and duties associated with property ownership, tenure or usufruct. These rules have been institutionalised through custom and law in order to structure social behaviour in relatively predictable ways. They tend to reflect power relationships among diverse social groups in their access to resources.

Much confusion arises from oversimplification of the complex social relationship implied by property rights. Some careless observers tend to view property as primarily a relation between owners or other forms of access to property with the "property" instead of with other social actors. As was discussed in earlier chapters, dichotomies between "private" and "public" property can be highly misleading. In the modern nation state organized world system, there is necessarily an explicit or implicit state presence in all property relations. Property regimes, however, should be regarded as sub-systems of a broader society. Their practical implications of "state", "public", "private", "common" or other forms of property ownership, tenure or possession can differ widely from one context to another.

Economists tend to emphasize the importance of clear and secure property rights in order for economies to function at all predictably. Long-term contracts, investments and plans depend crucially on relatively secure property rights. Equally important for sustainable development, however, is a widespread perception of legitimacy and relative justice in dominant property regimes. Otherwise, social institutions regulating access to property are likely to become very instable, especially during periods of rapid social change. The demise of the institution of human slavery in Europe and the Americas during the nineteenth century is a good example.

[18] Walden Bello makes excellent critical comments on the Oxfam "campaign to make trade fair" in **Focus on Trade**, Numbers 77 and 78, 2002.

Inequitable and insecure rights to land and other resources contribute to the negative impacts of social processes inimical to sustainable development. Indigenous peoples, poor nomads, peasants, fisher folk and rural workers in developing countries frequently find the natural resources on which their livelihoods depend being alienated. They are directed towards other "development" priorities as seen by "modernizing" elites. Migrants to marginal lands attempting to survive without secure land rights are blamed for degradation of forests, soils and water. Urban shantytown squatters and slum dwellers usually have no legally recognized rights to land, shelter, food, water, sanitation or other necessities.

Highly inequitable property rights stimulate the destructive exploitation of soils, forests, water, mines, petroleum and other resources for the profits, political power and social status of relatively small elites. These in turn depend on support by clienteles and allies who also benefit to some extent. Social polarization increases, often accompanied by deepening poverty by some low-income groups together with at least marginal gains by others. At the same time, the concentration of wealth and power at national and international levels continues. So too do global processes of environmental degradation together with the spread of wasteful non-sustainable production-consumption patterns.

Reforming property rights to become more supportive of sustainable development cannot by itself reverse these processes. The global processes of environmental degradation are driven by interacting systemic forces of which property rights are only one component. Moreover, feasible and needed reforms will be somewhat different in each specific local and national context.

In many of the situations looked at earlier, mere respect of customary usufruct rights by the state to land and water could help slow land alienation. Even where customary rights were inequitable, respecting them could contribute to the poor obtaining some kind of compensation providing alternative livelihoods. In rural settings in which control of land and other resources are highly concentrated, comprehensive redistributive agrarian reforms may be required. Urban squatters would benefit from acquiring secure rights to their assets.

In the contexts of most developing countries, such reforms of property rights are extremely difficult. In localities where they are most needed local power structures reflect the vested interests of propertied elites and not those of low-income majorities. National legislation and the state are theoretically the ultimate arbitrators of disputes over property. The state, however, depends on crucial support from well-organized foreign and domestic propertied interest groups. Its autonomy is always constrained even when undertaking popularly based strategies with widespread public support.

Where progressive political coalitions presumably representing the interests of the weak and poor gain political control of the state, popularly based development strategies in support of sustainable development becomes more feasible. But they are frequently soon diverted or corrupted under pressures from still powerful domestic interest groups supported by foreign investors, TNCs and governments. Moreover, even where the political "will" exists, the state may lack the trained personnel, organizations and resources required to carry out smoothly complex reforms of

property rights such as agrarian reforms, urban renewal benefiting the poor and progressive tax systems.

A coherent international strategy in support of sustainable development would have to take into account the centrality of property issues. It has to recognize the difficulties and dilemmas faced by states and other organizations attempting to reform them. Like other development issues, each specific case is different. A coherent global strategy has to be extremely flexible, emphasizing common goals including respect for universal human rights and democratic decentralized participation.

The growing polarization of wealth, income, control of new technologies and political power have somehow to be checked and reversed. This necessarily implies reforming the rules regulating access to property. It also requires democratic regulation of economic activities more generally. In the present world context, this requires popularly based state initiated or sanctioned reforms at all levels. These in turn require a supportive strategy by international organizations.

True corporate social and environmental responsibility by TNCs can only be attained in a regulatory framework that provides them with the necessary incentives and penalties. A genuine "triple bottom line" implies profound systemic reforms at all levels in economic and financial organization, accountability, objectives and performance norms. But such reforms affecting only TNCs and other big business enterprises would be insufficient to support sustainable development. There would have to be complementary reforms in macroeconomic and social policies and institutions. The World Summit on Sustainable Development should recognize the need for a coherent global strategy to encourage popularly based national and subnational policies in support of common sustainable development goals. Such policies, however, would have to be adapted to the exigencies of highly diverse contexts of time and place.

At global levels, attempts should be abandoned to impose similar policies and institutions everywhere that would support the so-called "Washington Consensus" or "Post-Washington Consensus". A high priority, however, should be placed on the encouragement of production and provision of so-called "public goods" required for sustainable development. Universal access to adequate food, clean water, shelter, health services, education, a non-polluted environment and other "basic needs" should be made available for all irrespective of income or status. For example, trade related intellectual property rights (TRIPS) that hamper access to vital medicines and the like for the poor have to be reformed.

The World Summit on Sustainable Development cannot spell out how this could be done in diverse contexts. It could, however, recognize the need to evaluate policies and institutions in terms of their observable positive or negative impacts on diverse social groups in relation to these goals.

E. Who Could Bring about Needed Reforms?

The biggest challenge for the World Summit on Sustainable Development is mobilizing effective political support for approaching its goals. What social forces would be willing and capable of initiating required policy and institutional reforms? Highly motivated interest groups and effective broad coalitions in support of sustainable development goals differ widely from one context to another. Effective pro-sustainable development social forces will have to include the rural and urban poor as active participants. Simplistic class analyses have frequently been misleading as a guide to policy in the past. They tend to neglect social fragmentation and the conflicting interests among and within peasants, urban workers and other groups constituting the poor. But broad common interests still exist among the rural and urban poor. Their class-based organizations such as trade and industrial unions, peasant leagues and the like have been crucial in struggles to reform policies and institutions to benefit the poor. They still are everywhere. Recent research in developing countries brings out sharply some of the opportunities they offer and constraints they face (e.g., Tornquist 2002).

The World Summit on Sustainable Development should give top priority to the challenge of political mobilization to support sustainable development, in particular the fundamental issue of property rights. In the present world context, the Summit will not be able to come up with any politically acceptable recommendations questioning the foundations of the present "neoliberal" dominated world system. It might, however, be able to highlight some of its contradictions with the goals of sustainable development.

Bibliography

Allen, Adriana. 2001. "Urban sustainability under threat: The restructuring of the fishing industry in Mar del Plata, Argentina." **Development in Practice**, Vol. 11, No. 2/3, pp. 152–173.

Anderson, Sarah and John Cavanagh. 2000.**Top 200: The Rise of Corporate Global Power**, Institute for Policy Studies, Washington.

Bandyopadhyay, J. and V. Shiva. 1988. "Political economy of ecological movements." **Economic and Political Weekly**, Vol. 23, No. 24, 11 June, pp. 1953–1958.

Barnett, Tim P., David W. Pierce and Reiner Schnur. 2001. "Detection of anthropogenic climate change in the world's oceans." **Science**, Vol. 292, No. 5515, 13 April, pp. 270–274.

Barraclough, Solon L. 1999a. "Protecting social achievements during economic crisis in Cuba." In Dharam Ghai (ed.), **Social Development and Public Policy: A Study of Some Successful Experiences**. Macmillan, London.

Barraclough, Solon L. 1999b. **Land Reform in Developing Countries: The Role of the State and Other Actors**. Discussion Paper No. 101, UNRISD, Geneva.

Barraclough, Solon L. 2000. **Meanings of Sustainable Agriculture: Some Issues for the South**. South Centre, Geneva.

Barraclough, Solon L. 2001. **Toward Integrated and Sustainable Development?** Overarching Concerns, Programme Paper No. 1, UNRISD, Geneva..

Barraclough, Solon L. and A. Finger-Stich. 1996. **Some Ecological and Social Implications of Commercial Shrimp Farming in Asia**. Discussion Paper No. 74, UNRISD, Geneva, March.

Barraclough, Solon L. and Krishna B. Ghimire. 1995. **Forests and Livihoods: The Social Dynamics of Deforestation in Developing Countries**. Macmillan Press Ltd., London.

Barraclough, Solon L. and Krishna B. Ghimire. 2000. **Agricultural Expansion and Tropical Deforestation**. Earthscan, London.

Bello, Walden. 2002. "What's wrong with the Oxfam Trade Campaign?", **Focus on Trade**, No. 77, April; "The Oxfam debate: From controversy to common strategy", **Focus on Trade**, No. 78, May, http://focusweb.org.

Blaikie, Piers and Sally Jeanrenaud. 1996. **Biodiversity and Human Welfare**. Discussion Paper No. 72, UNRISD, Geneva, February.

Cavanagh, John et al. 2002. **A Better World is Possible! Alternatives to Economic Globalization**. Summary of an upcoming report by the Alternatives Committee of the International Forum on Globalization, San Francisco, CA.

Coase, Ronald H. 1988. **The Firm, the Market, and the Law**. University of Chicago Press, Chicago.

Diegues, Antonio Carlos. 1992. **The Social Dynamics of Deforestation in the Brazilian Amazon: An Overview.** Discussion Paper No. 36, UNRISD; Geneva.

The Economist**.** 2001a. "The truth about the environment." 4 August, pp. 63–65.

The Economist. 2001b. Book review of "The Skeptical Environmentalist: Measuring the Real State of the World." 8 September, pp. 97–98.

The Economist. 2002. "'The Skeptical Environmentalist': The litany and the heretic." 2 February, pp. 71–72.

Foster, John Bellamy. 2000. "Capitalism's environmental crisis—Is technology the answer?" **Monthly Review**, New York, Vol. 52, No. 7, December.
http://www.monthlyreview.org/1200jbf.htm.

Fukuyama, Francis. 2002. **Our Posthuman Future**: **Consequences of the Biotechnology Revolution**. Farrar, Straus and Giroux, New York.

Funes, Fernando, Luis García, Martin Bourque, Nilda Pérez, Peter Rosset. 2002. **Sustainable Agriculture and Resistance: Transforming Food Production in Cuba**. Food First Books, ACTAF and CEAS, Oakland, CA.

Gadgil, Madhav and Ramachandra Guha. 1995. **Ecology and Equity, The Use and Abuse of Nature in Contemporary India**. Routledge, London.

Grubb, Michael. 2001. "Relying on manna from heaven?" **Science**, American Association for the Advancement of Science, Vol. 294, Issue 5545, 9 November, pp. 1285–1287.

Haberl, Helmut, Fridolin Krausmann, Karl-Heinz Erb, Niels B. Schulz, Stuart Rojstaczer, Shannon M. Sterling and Nathan Moore. 2002. "Human appropriation of net primary production." **Science**, Vol. 296, 14 June, pp. 1968–1969.

Hawken, P., A. Lovins and L. H. Lovins. 1999. **Natural Capital: Creating the Next Industrial Revolution**. Little, Brown & Co., New York.

Hecht, S. and A. Cockburn. 1990. **The Fate of the Forest: Developers, Destroyers and Defenders of the Amazon**. Harper Perennial, New York.

Jackson, Jeremy B.C. et al. 2001."Historical overfishing and the recent collapse of coastal ecosystems." **Science**, Vol. 293, No. 5530, 27 July, pp 629–637.

Kurien, John. 1991. **Ruining the Commons and Responses of the Commoners: Coastal Overfishing and Fisherman's Actions in Kerala State, India**. Discussion Paper No. 23, UNRISD, Geneva, May.

Levitus, Sydney, J.I. Antonov, J. Wang, T.L. Delworth, K.W. Dixon and A.J. Broccoli. 2001. "Anthropogenic warming of Earth's climate system." **Science**, Vol. 292, No. 5515, 13 April, pp. 267–270.

Lomborg, Bjorn. 2001a. **The Skeptical Environmentalist**. Cambridge University Press, Cambridge.

Lomborg, Bjorn. 2001b. "The truth about the environment." **The Economist**, 4 August, pp. 63–65.

Lovett, Richard A. 2002. “Rain might be leading carbon sink factor.” **Science**, Vol. 296, Issue 5574, 7 June, p. 1787.

Lovins, Hunter and Walter Link. 2001. **Insurmountable Opportunities? Steps and Barriers to Implementing Sustainable Development.** Comments to the UN Regional Roundtable for Europe and North America (WSSD), Rocky Mountain Institute and Global Academy, June.

Lutz, Wolfgang, Warren Sanderson and Sergei Scherbov. 2001. “The end of world population growth.” **Nature,** Vol. 412, 2 August, pp. 543–545.

Mascarenhas, A. and F.P. Maganga. 1991. **Land Scarcity and Deforestation in the Western Usambaras**. Paper presented at UNRISD workshop on Social Dynamics of Deforestation in Developing Countries (Nanyuki, Kenya, 15–19 July).

McGranahan, Donald, Eduardo Pizarro and Claude Richard. 1985. **Measurement and Analysis of Socio-Economic Development: An Enquiry into International Indicators of Development and Quantitative Interrelations of Social and Economic Components of Development**. UNRISD, Geneva.

Mooney, Pat Roy (ed.). 1999. “The ECT Century: Erosion, Technological Transformation and Corporate Concentration in the 21st Century.” **Development Dialogue 1999: 1–2**. Published in co-operation with RAFI, Dag Hammarskjöld Foundation, Uppsala. http://www.dhf.uu.se/pdffiler/DD1999_1-2.pdf.

Murphy, David and Jem Bendell. 1999. **Partners in Time? Business, NGOs and Sustainable Development**. Discussion Paper No. 109, UNRISD, Geneva.

OECD. 2001. **OECD Environmental Outlook.** OECD Publications, Paris.

O'Neill, Kelly. 1999. **Internetworking for Social Change: Keeping the Spotlight on Corporate Responsibility**. Discussion Paper No. 111, UNRISD, Geneva.

O’Rourke, Kevin H. 2001. **Globalization and Inequality: Historical Trends**. NBER Working Paper Series, Working Paper 8339. National Bureau of Economic Research, Cambridge, Ma, June.

Oxfam International. 2002. **Rigged Rules and Double Standards: Trade, Globalisation and the Fight Against Poverty**. August. http://www.maketradefair.com.

Pacala, S.W., et al. 2001. “Consistent land- and atmosphere-based U.S. carbon sink estimates.” **Science**, Vol. 292, Issue 5525, 22 June, pp. 2316–2320.

Pearse, Andrew. 1980. **Seeds of Plenty, Seeds of Want**. Oxford University Press, New York; Clarendon Press, Oxford.

Postel, Sandra. 2001. “Growing more food with less water.” **Scientific American**, 18 February, pp 46–51.

Pretty, J. N. 1999. “Genetic-modification of crops: Partner or pariah for sustainable development?” **The Biochemist (The Biochemical Society)**, October, pp. 19–25.

Read, David et al. 2001. **The Role of Land Carbon Sinks in Mitigating Global Climate Change**. Policy document 10/01, prepared by the Royal Society Working Group on Land Carbon Sinks, The Royal Society, London, July. www.royalsoc.ac.uk/policy.

Richter, Judith. 2001. **Holding Corporations Accountable: Corporate Conduct, International Codes and Citizen Action**. Zed Books, London.

Rosset, P. 1998. "Alternative agriculture works: The case of Cuba." **Monthly Review** 50(3), pp. 137–146.

Rosset, P. 2000. "Cuba: A successful case study of sustainable agriculture." In Fred Magdoff, John Bellamy Foster and Frederick H. Buttel (eds.), **Hungry for Profit**. Monthly Review Press, New York.

Rosset, P. 2001. **Genetic Engineering of Food Crops for the Third World: An Appropriate Response to Poverty, Hunger and Lagging Productivity?** http://www.foodfirst.org/progs/global/ge/belgium-gmo.html 2001.

Satterthwaite, David. 2002. "Local governance and sustainable development." **Equity for a Small Planet**. IIED issue paper for the World Summit on Sustainable Development, IIED. http://www.iied.org/pdf/wssd_small_planet.pdf.

Scientific American. 2002. "Misleading math about the Earth." By Stephen Schneider, John P. Holdren, John Bongaarts and Thomas Lovejoy, 20 January.

Shiva, Vandana. 1992. **The Violence of the Green Revolution**. Zed Books, London.

Singh, Ajit. 2000. **Global Economic Trends and Social Development**. Geneva 2000 Occasional Paper No. 9, UNRISD, Geneva, June.

de Soto, Hernando. 2000. **The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else**. Basic Books, New York.

Speth, James Gustave. 1999. "The neglect of growing poverty poses a global threat." **International Herald Tribune**, 17–18 July, p. 6.

Tornquist, Olle. 2002. **Popular Development and Democracy: Case Studies with Rural Dimensions in the Philippines, Indonesia and Kerala**. UNRISD and University of Oslo, Norway.

United Nations. 1993. **Earth Summit Agenda 21**. United Nations Department of Public Information, New York.

United Nations. 1997. **Resolution Adopted by the General Assembly, S/19-2: Programme for the Further Implementation of Agenda 21**, A/RES/S-19/2, 19 September 1997.

United Nations Conference on Trade and Development (UNCTAD). 2000. **World Investment Report 2000**. UNCTAD, Geneva.

United Nations Development Programme (UNDP). 1991. **Human Development Report 1991**. Oxford University Press, New York.

United Nations Development Programme (UNDP). 2000. **Human Development Report 2000**. Oxford University Press, New York.

United Nations Development Programme (UNDP). 2001. **Human Development Report 2001**. Oxford University Press, New York.

United Nations Environment Programme (UNEP). 1999. **Global Environmental Outlook 2000**. UNEP, Earthscan Publications Ltd., London.

United Nations Environment Programme (UNEP). 2001a. **Millenium Ecosystems**, http://www.ma-secretariat.org/en/index.htm (in preparation, 2001).

United Nations Environment Programme (UNEP). 2001b. "Threats to ozone layer persist as governments seek tighter controls." **UNEP News Release 01/102**. http://www.unep.org/Documents/Default.asp?DocumentID=219&ArticleID=2939.

United Nations Environment Programme (UNEP). 2002. **Global Environment Outlook 3 (GEO-3)**. UNEP, Earthscan Publications Ltd., London.

United Nations Research Institute for Social Development (UNRISD). 2000. **Visible Hands: Taking Responsibility for Social Development**. UNRISD, Geneva.

Utting, Peter. 1993. **Trees, People and Power: Social Dimensions of Deforestation and Forest Protection in Central America**. Earthscan, London.

Utting, Peter. 2000a. **Business Responsibility for Sustainable Development**. Geneva 2000 Occasional Paper No. 2, UNRISD, Geneva.

Utting, Peter. 2000b. **UN-Business Partnerships: Whose Agenda Counts?** UNRISD, Geneva, December.

Utting, Peter (ed.). 2002a. **The Greening of Business in Developing Countries: Rhetoric, Reality and Prospects**. UNRISD/Zed Books, London.

Utting, Peter. 2002b. "Regulating business via multistakeholder initiatives: A preliminary assessment." In NGLS/UNRISD, **Voluntary Approaches to Corporate Responsibility: Readings and a Resource Guide**. NGLS Development Dossiers, NGLS, Geneva.

Valenzuela de Pisano, Ileana. 1996. **Agricultura y bosque en Guatemala: Estudio de caso en Petén y Sierra de las Minas**. UNRISD and Universidad Rafael Landivar, Guatemala City.

Wade, Robert. 2001. "Global inequality: Winners and losers." **The Economist**, 28 April.

Westendorff, David and Deborah Eade (eds.). 2002. **Development and Cities**, UNRISD/Oxfam.

Wigley, T. M. L. and S. C. B. Raper. 2001. "Interpretation of high projections for global-mean warming." **Science**, 20 July, 293, pp. 451–454.

Wofsy, S.C. 2001. "Where has all the carbon gone?" **Science**, Vol. 292, No. 5525, pp. 2261—2263, Washington.

Wolf, Martin. 2002. "Comments and Analyses: Countries still rule the world. The notion that corporations wheel more power than governments rests on flawed calculations and conceptual confusion." **Financial Times**, 6 February.

Wolfe, Marshall. 1980. "IV. An Assessment by Marshall Wolfe." In UNRISD, **The Quest for a Unified Approach to Development**, UNRISD, Geneva.

The World Bank. 1987. **World Development Report 1987**. Oxford University Press, New York.

The World Bank. 1992. **World Development Report 1992**. Oxford University Press, New York.

The World Bank. 2000. **World Development Report 2000/1**. Oxford University Press, New York.

World Commission on Environment and Development (WCED). 1987. **Our Common Future**. World Commission on Environment and Development, Oxford University Press, Oxford.

World Rainforest Movement (WRM). 2002. **WRM Bulletin**. 57, April. http://www.wrm.org.uy/.

World Resources Institute (WRI). 2000. **People and Ecosystems: The Fraying Web of Life**. WRI, Washington.

World Wide Fund For Nature (WWF). 2001. **Yearbook of International Co-operation on Environment and Development 2001/2002**. (Olav Schram Stokke and Øystein B. Thommessen, eds.), Earthscan.

Zedillo, Ernesto et al. 2001. **Report of the UN High Level Panel for Financing Development**. June. http://www.un.org/reports/financing/.