

GLOBAL INSTITUTIONS FOR SUSTAINABILITY

by
NITIN DESAI¹

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In less than a year from now the United Nations will be observing the fortieth anniversary of the Stockholm Conference, the twentieth anniversary of the Rio Earth Summit and the tenth anniversary of the Johannesburg Summit. These three conferences mark a gradual progression in the global community's resolve to address the core issues of sustainable development starting with the environment at Stockholm, moving on to its links with development at Rio and focussing on partnerships for implementation at Johannesburg.

Our focus at this meeting and in this session is on the institutional development at the global level that accompanied this progression. So let me begin with a potted history of this institutional evolution:

- At Stockholm the world said that we have neglected our responsibility to protect the environment and we need institutions that will do this at the global and national level. That is when UNEP was born.
- At Rio the world recognised that the environment could not be protected if the compulsions of development are ignored and we need institutions that can connect the two. That is when the Commission on Sustainable Development was born.
- At Johannesburg the world regretted the failure to implement the promises of Rio and sought to energise action through public-private partnerships and coordinated programmes for water, energy, health, agriculture and bio-diversity (the so-called WEHAB quintet). That is when the CSD was restructured to provide space for reviewing partnerships.
- Throughout this process there was a steady accumulation of environmental conventions some under UNEP and a few outside UNEP and the parties to the conventions created a secretariat for each of them.
- These forty years also saw the emergence of large global NGO networks who have created a global community of concern and a capacity to support action comparable in scale to the UN.

The question that we need to ask is whether these institutions and the mechanisms for coordinating their actions are adequate for the challenge of sustainable development. The immediate answer is obvious-they are not because the world is not any closer to the path of sustainability than when we started this journey forty years ago. Yes there is some

¹ Mr. Nitin Desai was Under Secretary General for Economic and Social Affairs at the UN headquarters from 1993 to 2003. Before that he was Deputy Secretary General of the Rio Earth Summit and Adviser to the Brundtland Commission from 1985-87. Besides the Rio Summit, he was also responsible for the organisation of the Copenhagen Summit on Social Development (1995), the Monterrey Finance and Development Summit (2002), and the Johannesburg Sustainable Development Summit (2002). From 2003 to 2010 he was the UN Secretary-General's Special Adviser on Internet Governance. He has held senior positions in development planning and finance in the Government of India

advance in awareness amongst citizens, corporations and governments. There are some hopeful signs of change in the energy and material intensity of production and in green consumerism. But the world is still very far from accepting the fundamental changes in production and consumption that sustainable development requires. The core issues of finance and technology for sustainable development remain as contentious as they have always been. Clearly we need some significant institutional change at the global level and the task before you in this session is to prepare a blueprint for this that the governments meeting at Rio next year can consider.

Rio, Johannesburg, and the CSD provided a political space where governments, NGOs, corporates, and the scientific community could talk to each other. Above all, it was a space that was very visible publicly so that there was a high degree of media interest, strong interaction with the public, and therefore substantial achievement in terms of raising public awareness. One result of this is that it is now quite rare to come across a serious discussion of development that does not recognise the central importance of the need to conserve the natural resource base on which development depends, which does not recognize that the significant part of what we should be working towards for poverty eradication is the environmental quality of life that people experience (water, sanitation, air quality, among others). Similarly, on the environmental side, it is rarer now for environmental groups/activists to take a narrowly conservationist stand; even the purely conservationist groups have now recognised that their concerns about conservation of species and biosphere cannot be served unless development concerns of those who depend on these resources for a living are simultaneously addressed. This is an area where, in terms of changing mindsets of activists, our work over the past decade has been useful.

A much more important part of our work was the change in the nature of the discourse in intergovernmental discussions. Of course, we did that in Rio and Johannesburg—after all that was the purpose of that exercise and *Agenda 21* and the *Johannesburg Programme of Implementation* is the resultant road map for sustainability. The real test is how much of an impact we had outside the forums that deal with sustainable development. My summary assessment is that we have had a significant impact in the areas of environmental discourse. Some of the principles outlined in Rio—like the precautionary principle, polluter pays principle, common but differentiated responsibility principle—have found application in the environmental legislation that governments have negotiated. I am more sceptical about the extent to which the principles, policies and programmes agreed at Rio and Johannesburg have been reflected in the developmental discourse outside forums that deal directly with sustainable development. For instance, in trade forums like the WTO the link with environment does figure sometimes in the negotiations and the dispute settlement, but not the broader link with sustainable development.

One should also look at whether our work has really changed the way development programmes and policies are formulated. The most important change that was required was to integrate environment with a people-centred approach to development. To put it more starkly, as I have said elsewhere, you cannot protect the savannah if you fail to

provide the Masai herdsman with a viable option for earning an income; equally the herdsman's livelihood cannot be assured unless the savannah is conserved and protected. Johannesburg in particular laid great stress on the anti-poverty dimension of Sustainable Development.

There is some evidence that this integration is better reflected in the work of global institutions in the field of agriculture and rural development. But I have felt that after Rio the world has slipped back to a narrower welfare view of people-centred development. For instance, in the MDGs, there is an immense focus on people-centred, anti-poverty goals such as halving poverty, infant and maternal mortality and school attendance. That is absolutely appropriate; but the goals are not connected with environment and resources. Gertrude Mongella, who was the Secretary General of the Beijing Conference on the Advancement of Women, used to tell me that, in her part of Africa, the provision of safe water locally did more to ensure that girls went to school, as they no longer had to go long distances to fetch it. Nutritionists in India have often argued that children's health status is affected more by water and sanitation than by supplemental feeding. The environmental sustainability goals in the seventh MDG are almost an afterthought. There is not enough recognition that unless you address that goal you will not be able to address the issues of health, poverty, and even education.

Sustainable development has had a greater conceptual impact in the corporate sector and in the science and technology community. One of the areas of success I would identify is the fact that environmental excellence is today an expectation of how a soundly managed corporation should be run. Combine this with the social concerns that were the staple of earlier approaches to corporate social responsibility and one gets closer to the ideas of sustainable development. This task has been greatly assisted by the high interest of corporate leaders and scientists in climate change, a problem that virtually compels a sustainability approach.

The fact is that we have not overcome the political barriers to the operationalisation of sustainable development. One, sustainable development, by its very nature, is cross-sectoral and requires a high degree of connection across organisations, ministries, and departments and it suffers because any horizontal coordination is always difficult as power centres seek to protect their turf. Two, sustainability requires a focus on the long term and it is not that easy to get policy to focus on the long term, when short-term compulsions are so very strong in shaping democratic politics. (Dictatorships are always short-term in their orientation because their expectation of life is problematic!). Three, basically there will be gainers and losers as you switch development policy towards paths that are more sustainable; but we have no accepted principles for burden sharing that will allow us to handle issues about who does what when and who compensates whom for what.

The problems we have had in global climate discussions are a classic example. Everybody agrees that there is a problem. Everybody agrees that we need to change to make our energy systems more sustainable. Yet there is no agreement on who should do what because we have no principles for burden sharing. I also believe that this failure is a

critical barrier to sustainability as all other goals of sustainable development will become much more difficult to achieve if we fail to avert the risks of catastrophic climate change.

We can do better if we have a clearer idea of why and how sustainable development entered the global policy agenda. So forgive me a brief autobiographical digression. As some of you know I was brought into the Brundtland Commission staff in mid-1985 basically to help draft its report. I did not come to the Commission with any sort of environmental credential but as a development specialist who appreciated the importance of resource conservation for development. The Commission was divided between the post-Stockholm environmentalists who sought to give priority to pollution prevention and conservation in a narrow sense and others for whom development and growth was the priority and who saw the demands of environmentalists as a constraint on this. At the national level this clash between growth and environmental lobbies is a daily reality for policy makers in developing countries.

At this fractious point in the deliberations of the Brundtland Commission, the idea of sustainable development was introduced in a paper drafted by me that someone described as the birth certificate of sustainable development! (A copy of my note is attached to this address). The paper contains the famous definition about meeting the needs of the present without compromising the ability of future generations to do the same. Note that the definition studiously avoids using either the word 'environment' or the word 'development'. It was designed to provide a framework for a conversation between two groups who saw each other as a threat to their respective agendas. And as a framework it succeeded, helped by the Chairperson's commitment and drive. Before the Brundtland Commission ended its work die-hard environmentalists were talking about the crucial importance of solving the debt problem and the development set was talking about forest conservation.

The subsequent history of this in the UN system is more mixed. In fact the GA resolution setting up the Rio Conference does not mention the phrase. This resolution defined the agenda for the conference largely in environmental terms and spoke about deforestation, land degradation, pollution and so on. The change came at the first prepcom when a vague reference to development was spun out into a broader resolution that brought issues of finance, technology, trade, sustainable consumption and population into the agenda. That is why Agenda21 turned out to be a programme that addressed virtually every aspect of development. In this way sustainable development as a concept moved much beyond the bridge role that brought it into the Brundtland Report.

Should we be thinking of sustainable development as an overarching concept that subsumes all other notions of development? If so we would then look for an apex institution that can infuse the basic ideas of sustainable development into the agenda of all developmental and environmental bodies. This is perhaps why some people argued at Rio that the responsibility for the follow-up of UNCED should rest with ECOSOC. But recognising the risk that the issue would get lost on the sprawling remit of the ECOSOC they argued for a special session. If however we think of sustainable development as a bridge concept designed to facilitate a dialogue between those whose primary concerns

relate to the environment and those who see their role as promoting growth and development then we need a different type of institution. It has to be something that is not seen as threat to the separate environmental and development agendas and yet capable, through dialogue, to modify both. This perhaps was the thinking that led to the creation of the Commission for Sustainable Development.

Clearly a bridge to connect separated communities of discourse is not enough. People come, talk and go away and do exactly what they have always done. If we want results we will have to give institutional expression to sustainable development as an umbrella concept that sits over all notions of development that guide the work of global institutions. In particular we need to ensure that sustainable development does not remain an environmental programme in disguise and that the development agencies are as committed to the implementation of Agenda 21, the Johannesburg Programme and whatever comes out of Rio+20.

In doing this we must also recognise that the global development dialogue has new elements that were not present at Rio. I would emphasise two—the Millennium Development Goals and the Monterrey Consensus on Finance for Development. Both of these have their own arrangements for intergovernmental review, coordination and programme development.

The ECOSOC is central to the task of linking sustainable development, the MDGs and Finance for Development. Its role in macro economic matters has been strengthened and it is well placed as the forum of choice for an integrated view of the commitments made at all Conferences. But it must go beyond reviewing the decisions of subsidiary bodies. It should undertake thematic reviews organised around the relevant decisions of all Global Conferences, including UNCTAD and of its own subsidiary bodies. If these are planned ahead of time then the subsidiary bodies can prepare their reviews as an input to the ECOSOC process. None of this is actually new. It was envisaged many years ago when the ECOSOC discussed the coordinated follow-up to UN Conferences. Hopefully this time there will be some closure to this never ending quest for coherence.

The institutional expression of sustainable development as an umbrella concept need not take place only in the ECOSOC. There is some talk of a Sustainable Development Council directly reporting to the GA on the lines of the Human Rights Council. This Council would have a remit that extends to all three pillars of sustainable development—the environmental, the economic and the social. A question that will need to be addressed is the placing of the subsidiary bodies of ECOSOC that deal with one or the other of the three pillars.

The CSD would clearly need to be reoriented if such an apex arrangement is set up. One role that I can see for a CSD type arrangement is as an open space for policy dialogue and exchange of best practices amongst the many organisations who now have a substantial political, intellectual and operational presence in this field. This would include donor agencies, large global NGOs, local authorities, scientific bodies and even interested governments – a sort of Davos for Sustainability.

I have been involved for the past several years in the Internet Governance Forum which is a multistakeholder meeting where all stakeholders participate as equals. It has worked well because, as Vincent Cerf, one of the inventors of the Internet Protocol, said, the participants can meet and listen to people they would not otherwise meet in the course of their work. Can CSD become a forum like this bringing together diverse actors in a space designed for listening rather than talking, for dialogue rather than confrontational negotiations?

This brings me to the vexed issue of coordination. UN agencies, programmes and departments need to be brought together not just for servicing intergovernmental bodies but for programme planning and implementation.

Coordination is a vague word and it is helpful to deconstruct it a little so as to identify what is important. The degree to which UN entities are coordinated can be looked at along three dimensions:

First the depth of coordination:

1. Is it limited to the exchange of information?
2. Does it involve the sharing of resources/ services?
3. Does it amount to joint programming with clearly defined tasks for each partner?

Second the timing of coordination- does it take place

1. During implementation
2. At the work-planning stage
3. At the “pre-feasibility” stage

Third the scope of coordination-is it organised around

1. Sectoral clusters
2. Global goals
3. Country programmes

The depth and timing of coordination is crucial. To avoid duplication we have to be at least at level 2 in terms of depth and timing i.e. coordination should take place at the work-planning stage and must involve the sharing of resources. To ensure coherence of concepts and purpose we have to be at level 3 in terms of depth and timing i.e. the coordination must take place at the pre-feasibility stage and amount to joint programming with clearly defined tasks for all partners. The scope of coordination is most important for the image that the UN projects and has to be organised around global goals and country programmes if the idea of a single UN is to be projected.

The focus on implementation will require more than just routine coordination amongst secretariats. It must involve funding organisations, including bilaterals and all implementation partners including NGOs. The Joint Programme on AIDs and the CGIAR mechanism and some of the arrangements in the field of humanitarian assistance provide models for this type of coordination that leads to a good mix of centrally managed coherence and flexibility at the edges.

In the context of Agenda 21 and the Johannesburg outcomes as a start such a joint programme can be considered for water and energy which do not have a well defined home in the UN. The other three in the WEHAB quintet, health agriculture and biodiversity do have a home and the concerned organisations, WHO, FAO and UNEP can be encouraged to do the same within their structure. I would also add a similar programme for S & T for Sustainability, possibly with UNESCO taking the lead. But for these strongly coordinated programmes to be effective the donor organisations must also play by the same rules and channel their funding appropriately.

There are other dimensions that one can talk about. One that is important is the lack of a focal point for sustainable development at the national level which is what turned the CSD into a body run by environment ministries. This cannot be corrected too easily except by encouraging national planning bodies or economic ministries, where they exist, to become the focal point for national reporting and national action on the sustainable development agenda. Judging by the national response to the MDG follow-up, if UN country programmes are organised around the outcomes of the sustainable development conferences this engagement with the national economic coordination set-up will become much easier.

The plethora of institutions, particularly on the environmental side have led to demands for a World Environment Organisation. The multiplicity of secretariats is not a very strong argument. After all, on that type of argument about multiple overlapping agencies one could ask for a World Development Organisation!

Do we really need a WEO for enforcement? Is that the real gap? Or will it elevate one dimension of sustainable development above others? The analogy with the World Trade Organisation (WTO) is quite unfortunate because it immediately raises the fear of trade conditionality. Moreover do remember that the WTO came after many decades of implementation of a treaty based trade system. In some ways the World Intellectual Property Organisation (WIPO) provides a better analogy as it handles a multiplicity of conventions with differing membership. But it too emerged after many decades of implementation of treaties. In the environmental field we have a long way to go before we have a proper treaty based regime that covers the full range of issues that concern us. A unified mechanism to manage the reporting, review and dispute settlement processes must wait till these processes themselves are agreed.

The struggle to get the idea of sustainability factored into development decisions may soon seem rather strange. If we take a long historical view one can see how the driving forces of global growth have changed.

The 19th century is one where growth was driven by a revolutionary change in the mode and magnitude of production. A snapshot of how cloth or steel was produced at the beginning and end of the nineteenth century will show this clearly. The emblematic technologies of this revolution in production are the railway, the Bessemer converter and the textile mill.

The 20th century saw growth driven by the rapid spread of mass consumption. Consider for instance the vast difference in the number of persons who owned a watch or a telephone or motorised transport at the beginning and end of this century. The emblematic technologies of this century of consumption growth are electricity, the telephone and the motor car.

What will drive growth in the 20th century? May I suggest that it will be resource conservation? Take energy for instance. According to the IPCC the world has to halve carbon emissions by 2050 if we are to keep the probable temperature increase to 2° C or less. Global GDP may expand by a factor of five or so. That amounts to a ten-fold increase in carbon productivity. This is comparable to the increase in labour productivity over the industrial revolution and may have as profound an impact on economy, society and polity as that earlier economic revolution did.

So if growth in the 19th century was driven by production and in the 20th by consumption, growth in the 21st century will be driven by dramatic reductions in the material and energy intensity of production. The emblematic technologies of this century could be the internet, solar energy and biotechnology.

Nowhere is the challenge of resource efficiency greater than in the fast growing countries of Asia, notably the two giants, China and India, who account for a third of humanity. They do not have any margin of unexploited resources at home or the option of colonising some distant, sparsely populated part of the earth. They have to and will pursue the path of production and consumption growth. But they have no option but to do this in a manner that pushes resource efficiency as far as it will go. In fact out of necessity they may well emerge as the prime source of the new technologies that the 21st century path of resource conservation will require.

History will favour those who recognise this and build from now the competencies required for riding these waves of change. That is why, I believe, that, in time, the idea of sustainability will seem a natural part of development thinking.

Hence, when, towards the end of this century, Indonesia hosts a meeting to prepare for the centenary of the Rio Summit the keynote speaker then may well say that. Looking back at the 21st century, there was a clear transition in the driving force of the global economy and technology development— from production in the 19th century to consumption in the 20th and to resource efficiency in the 21st. This is my expectation.

My hope is that the keynote speaker will also be able to say that in the early part of the century, at Durban in 2011 and at Rio in 2012, the nations of the world got their act together and put together an effective cooperative programme to avert the worst risks of climate change and set up the institutions needed to make sustainable development a reality. Your task is to work towards this hope and lay out a challenging agenda of institutional development for the governments to consider at Rio next year.

Annex: Nitin Desai's Note to Brundtland Commission on Sustainable Development..

My handwritten notes on the discussion are transcribed in italics in the text reproduced below: Nitin Desai

TO: All Commissioners
FROM: Nitin Desai
DATE: 27 June 1986
RE: NOTE ON THE CONCEPT OF SUSTAINABLE DEVELOPMENT

I am sending with this a very preliminary and tentative note on the Concept of Sustainable Development. The primary purpose of the note is to provide a starting point for discussion on the definition and description of a concept that is central to the Commission's report. Ultimately, the definition and description will form the first part of Chapter III "Towards Sustainable Development". The second part of Chapter III will elaborate the critical implications of the concept for basic needs, agriculture, energy etc.

I would be most grateful for your comments on this note. Given the tight time schedule that we are working to send these by about 15 July?

W0027D/ND/es

THE CONCEPT OF SUSTAINABLE DEVELOPMENT

1. The connection between patterns of development and environmental conditions is now so direct and observable that the issue is no longer one of promoting development or protecting the environment. Both objectives have to be pursued simultaneously and success in one will *(Handwritten note: delete 'can', insert 'will')* reinforce the possibility of success in the other. Existing approaches do not *(Handwritten note: insert 'adequately')* recognise this identity *(Handwritten note: delete 'identity', insert 'compatibility')* of environmental and developmental compulsions and the dominant attitude is one of aiming at a revival of the growth patterns that prevailed in the years preceding the current economic crisis. Such a revival cannot be sustained for long and the world will be confronted by ecological, economic and social crisis of deepening intensity. It is therefore essential that development policy, in the broadest sense and environmental policy be integrated in a common framework. The concept of 'sustainable development' can provide the basis for such an integration.

2. A development path is sustainable if it meets needs of the present without compromising the ability to do the same in future. There are three crucial elements in this short statement. The first is the concept of needs, the second is the ability to meet these needs and the third is the link between the present and future capacity to satisfy needs. Each of these three elements needs further elaboration.

3. The satisfaction of human needs is clearly a major objective of development. In practice there are vast numbers whose basic needs for food, clothing, shelter, (cultural activity and social interaction) are not being, met. *(Handwritten note, referring to bracketed terms in previous sentence: 'These two have no ceiling')*. The greater part of this deprivation is to be found in the developing countries. A world in which poverty is widespread will always be prone to crisis and, sustainable development requires that the basic needs of all persons should be met.

4. How should such needs be defined? Needs are socially and culturally determined and the only definition that is sustainable is one which is accepted by the people themselves. This is one sense in which sustainable development is not merely for the people but is defined by the people. For the majority of people on earth living standards are so low that their aspirations are modest: an opportunity to earn a living, enough to eat and wear, clean water to drink, a place to live, sanitary surroundings, access to education and health care and some opportunity for cultural expression. Sustainable development requires that these elements of a dignified life should be available to all.

5. The satisfaction of needs does not have to be restricted to the basic minimum. As the sustainable productive potential of societies increases living standards can and should increase. There are, however, two important qualifications which need to be noted. The first is that lifestyles which may be sustainable in one society act as models for others where they may not be as readily sustained. The existence of vast inequalities in consumption standards between and within nations and the growing reach of modern communications greatly increases the possibility of such an impact. The second qualification is that the dynamics of consumerism are such that aspirations grow and consumption standards rise without any regard for long-term sustainability. The massive expansion in motor-car ownership and household energy use in the developed countries is one example of this. Hence sustainable development requires that the affluent everywhere aim at consumption standards which, in time if not immediately, can be reached by everyone and which are within the bounds of the ecological possible. (*Handwritten note, in margin against previous sentence: 'Modify'*).

6. Needs or aspirations are only one side of the equation. The other side is the ability of a society to meet these needs. One element in this is the productive potential of the economic system which depends on a variety of factors like the level of technological development, the skill with which resources are managed, the accumulation of capital. the nature of economic organisation and the

position in the international, economy. But a high productive potential is not enough. The manner in which the product is distributed is as important. When there are great inequalities in the access to resources and livelihood opportunities, high levels of production and widespread poverty can coexist.. Hence sustainable development requires that a society's ability to meet basic needs be maximized both by building up its sustainable productive potential and by institutional arrangements which offer a more equitable access to resources and livelihood opportunities.

7. Development is clearly not a static concept. It implies changes in the definition of needs and in the ability to meet them. A society may meet today's needs by over-exploiting its own or someone else's resources. The direction of technological developments may solve today's problems but lead to even greater ones in future. Institutional changes meant to increase productive potential may marginalise large sections of the population and make it more difficult for them to meet their basic needs. In these and other ways a society may compromise its ability to meet the basic needs of its people in future. This need not happen. Sustainable development is a process of change in which the exploitation of resources, the direction of investments, the orientation of technological and institutional change enhance not merely the current but the future potential to meet basic needs.

8. Sustainable development clearly requires economic growth in communities where basic needs are not yet satisfied. *(Handwritten note in margin: 'Elaborate this in terms of avoiding widening the gap)*. Even in others it is consistent with economic growth provided the content of growth reflects the broad principles of sustainability and non-exploitation of others.

9. Sustainable development can be pursued more easily if population growth is contained. The growth of human populations is culturally determined and the process of development can itself moderate fertility. However in areas where deprivation is widespread and in poor households an expansion in numbers increases the pressure on resources and slows down the rise in

living standards. The issue is not merely one of population size but the balance between numbers and access to resources particularly in poor households. Thus, sustainable development can be pursued more easily if fertility control policies are combined with measures to improve the access of poor households to education, health and livelihood opportunities. (*Handwritten note :delete 'fertility control' insert 'population' instead*).

10. The limits to development are not absolute. They arise the operation of certain natural processes (e.g. the hydrological cycle) or from social and biological compulsions (e.g. against overcrowding) and the pattern of development can be oriented to work with rather than against these processes and compulsions.

11. The world is still far from its limits of sustainable production. However this potential is very unequally distributed and there are many areas where the limits are much closer. Moreover there is no unique limit defined in terms of population or resource use with sustainability on one side and ecological disaster on the other. There are many different limits for energy use, for material demands, for land requirements, etc. Some of these will be approached faster than others. Many of these will manifest themselves in the form of rising cost and diminishing returns rather than any sudden loss of a resource base. But (*Handwritten note: insert 'ultimate'*) limits there are and sustainability requires that long before these limits are reached the concerned community should (a) ensure equitable access to the constrained resource and (b) reorient its technological efforts to relieve the pressure on the constraint.

12. Development necessarily implies interventions in natural and social systems. Sustainability requires that these interventions be designed in a manner that does not endanger the essential features (*Handwritten note; insert 'and the viability'*) of these systems. The most important natural systems for humankind are those that support the very existence of life on earth - the atmosphere, the hydrosphere and the geosphere and the biomass that these systems sustain. Settled agriculture, the diversion of water courses, the extraction of minerals

from the earth's crust, the emission of heat and noxious gases into the atmosphere, manmade forests, genetic manipulation are examples of how human beings intervene in natural systems in the course of development. Until recently these interventions were small in scale and limited in their impact except in some localised situations. Today the interventions are more drastic in their scale and impact and the risk to life support systems is more evident in many areas and, in certain respects, even globally. Sustainable development requires that the elements in natural systems critical for the maintenance of life be identified and all human activities be oriented so as to avoid endangering these elements locally, regionally or globally.

13. The resource base for development is not a simple addition of individual elements. There are systemic interactions between different resources which affect their productive potential. For instance forest cover, water regimes and land quality are interlinked and the pattern of use of any one affects the usefulness of the other. There are other such examples and sustainable development requires a systemic approach to resource utilisation.

14. Renewable resources need not be depleted by use provided the rate of use is within the limits of regeneration and natural growth. Forest products and fish are typical examples. Sustainable yield is that which can be extracted/used without depleting the stock of the resource. Renewable resources are generally a part of a complex and interlinked ecosystem and sustainable yield has to be defined after taking into account systemic effects. Growth and development will involve changes in the physical ecosystem. Every biome everywhere cannot be preserved intact. What is required is conservation and protection in an overall sense and sustainability has to be defined at a suitable level of geographical aggregation for each type of resource. A forest may be depleted in one part of a watershed and extended elsewhere. This is not necessarily bad provided systemic effects on soil erosion and water regimes have been taken into account. Thus sustainable development requires that all renewable resources should be exploited in a manner which does not deplete the stock for future generations though changes in the location and composition of the resource may well take place.

15. The use of non-renewable resources necessarily reduces the stock available for future generations. Yet this does not imply that the resource should not be used at all. For if that principle were to be applied by every generation the resource would lie unused by anybody. Sustainable development requires that the rate of depletion of a non-renewable resource should take into account the criticality of that resource for the sustenance of human life and society, the availability of technologies for minimising depletion and the likelihood of substitute resources being available in the future. Land, for all practical purposes, is a non-renewable resource, critical for all human activities and will continue to remain as such. Hence sustainable development requires that land is not depleted through degradation. Minerals and fossil fuels are a different case. The possibility of substitution is present and the rate of depletion, the emphasis on recycling and economy of use should be calibrated to ensure that the resource does not run out before acceptable and economic substitutes are available. In a broad sense sustainable development requires that the rate of depletion of non-renewable resources should foreclose as few options for future generations as is possible.

16. There is a tendency to restrict the use of the term resources to only some of the inputs used in the production process and, at the output end, the focus is on saleable products. From the point of view of sustainable development the conception of the production process has to be extended to include not merely paid inputs and marketed outputs but also so-called free goods like air or water, used or affected by the production process. It must also include all by-products and side-effects which may affect others. In this sense problems of resource use and problems of pollution are integrated in one framework since both sets of problems arise from the same activity. Sustainable development requires that the basic principles of resource-use outlined earlier should apply to all resources used or affected by the processes of production and consumption, not just those which, at present, have a market value. (Handwritten note: 'Put the negative impact clearly. There will be neg. impact. Minimise')

17. The processes of production generate hazards in the form of pollution, unforeseen side-effects, dangerous accidents, etc. The impact of such hazards is widening both in space and time and this is not reflected in present modalities for decision-making and enforcement of legal liability. Sustainable development requires the effective enforcement of responsibility for all environmental effects arising from any decision. This will require an adequate legal and institutional framework, nationally and internationally. Decision making systems for projects, programmes, policies and plans must reflect the wider concept of responsibility and the interlinkages between sectors of economic activity. *(Handwritten note in margin: 'Need to maintain diversity')*

(Handwritten note in margin: 'Para on technology development for sust. develop.)

18. In today's world the broad orientation of development and environment policy is determined at the national level. But the nations of the world are linked together in a web of physical, cultural, political and economic interactions, a phenomenon that can be summarised in the term 'interdependence'. In many developing countries the nature of the involvement in the international economy has determined a style of development that causes the degradation of ecosystems and the impoverishment of large sections of the population. The impact of the world system is established through the mediation of local groups who share in the benefits and pass on the growing social and environmental costs to the majority of the population. The debt-crisis of the eighties exemplifies the developmental and environmental consequences of this approach: The issue is not so much the sufficiency of natural resources but the manner in which they are handled and the incorporation of technological patterns based on a dependent, centralized and standardised pattern of development. Sustainable development requires a framework of international cooperation that avoids exploitative relationships, reduces vulnerability and maximises the options available for sustainable development in each nation.

19. One aspect of international cooperation is central for

sustainable development. This is the promotion of peace and a security environment that reduces the waste of vast military expenditures and the suspicions that make cooperation difficult in other fields. Today the link between military security and economic security is widely recognised. Sustainable development requires that the concept of security be widened further to cover basic developmental objectives and environmental protection.

20. To summarise, sustainable development is a type of (Handwritten note: insert 'environmentally sound') development that aims at equity in access to (Handwritten note: insert 'and use') the earth's resources now and in the future; it makes the present generation responsible for the welfare of future generations; it seeks to conserve and enhance the potential value of resources; it focuses attention on systemic features of the interaction between man, society and nature; it enforces responsibility in decision making for all effects, intended and unintended.

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