

Executive Summary and Major Recommendations

Abstract

The crux of our Report is a belief that in the long term, the future of life on Earth depends on caring for and conserving the environment—the natural resources of the planet, its land, air, water, biodiversity, forests and other life-support systems. This will only be possible if all countries, which means governments and their peoples, adopt and maintain policies and practices conducive to sustainable development.

2. Neither environmental conservation nor sustainable development practices will come free, or even in all cases cheaply. In aggregate, both will demand considerable additional resources which developing countries, whose full participation in the process is vital, do not possess. Our first major recommendation therefore has to be for additional financing, and on a net basis. This is needed to help developing countries in the many actions they will have to undertake to conserve the environment and follow sustainable development practices. Actions to adopt energy-efficient technologies, to practise sustainable forestry, to conserve biodiversity, to reduce and then reverse soil erosion on hillsides and desertification of drylands, are four examples of what we have in mind. Novel sources of funding, such as an international tax on the consumption of hydrocarbon fuels, adapted to take account of the developing countries' crucial need for economic growth, would buttress more conventional sources.

3. Another intrinsic part of the process concerns the transfer and development of environmentally benign technologies. This is especially important in such areas as renewable energy development. Our second recommendation is therefore directed to means to facilitate the acquisition, absorption, development and utilisation of technologies relevant to the adoption of sustainable development practices in developing countries.

4. The two recommendations above will both require a significant shift of

policy at the international level. Our third recommendation, therefore, is for a high-level deliberative process to be established, in the United Nations system, which will bring together, in an integrated way, concerns of both environment and development. Other changes in international institutions are required to facilitate operational effectiveness and integrated approaches. Institutions such as the World Bank, UNDP and UNEP, which are concerned with assisting developing countries to achieve sustainable development, should be strengthened and given more resources to carry out programmes on the environment and sustainable development.

5. There are many facets to environmental degradation but one of the most universal and fundamental is obviously climate change as a result of global warming. This could have results which would be cataclysmic for island small states and low lying coastal areas. It should be minimised at almost all costs. Our fourth recommendation therefore is the need for the international community to take all measures necessary to encourage all countries—especially in the developing world—to participate in the negotiations and reach early agreement on a framework convention on climate change; also to provide additional assistance to enable those countries particularly at risk to prepare for and be able to respond to the floods and other natural disasters which would result from climate change.

6. Small islands are particularly vulnerable to such hazards, and these and other small states are another of our special areas of focus. The coastal regions and offshore exclusive economic zones (EEZs) are especially important for these states. Our fifth recommendation concerns the need for greater technical assistance to enable them to develop, manage and, in the case of EEZs, police these areas; also to participate more effectively in international negotiations on issues affecting their interests.

7. We recognise that women are not merely victims of environmental degradation. As producers and managers of natural resources, they play a vital role in environmental conservation and sustainable development. But we are aware that their role is not always recognised in society, in the economy or in government. Our sixth recommendation concerns the need to take urgent action to enable women to play a greater role in decisions which affect sustainable development. Many facets are involved, and greater and more secure access to education and training and to productive resources (especially land) are two among many.

8. Finally, having already drawn attention to the changes in international institutional arrangements needed to effect the above actions, we recognise that parallel changes are required at a national level. Our last major recommendation is that all countries should establish a central ministry in government to coordinate the environmental aspects of all policy-related issues and to do so at such a level that effective action is assured. They should also

encourage and facilitate community-oriented approaches such as networking arrangements which bring together all the parties concerned—official and non-official—to address particular issues like the need for primary environmental care.

Introduction

9. In carrying out our remit we have come to recognise more than ever the crucial importance of certain elements in any consideration of sustainable development. Several themes therefore run through our Report. The first is that the awareness of the major environmental threats facing humanity is leading to an appreciation of the need to integrate environment and development, and of the growing interdependence between developed and developing countries and the imperative of international cooperation to ensure sustainable development, worldwide. Progress in taking effective action is still very slow however and the issue is becoming increasingly urgent. The Commonwealth, with its tradition of cooperation, should play a leading role to put world development on a sustainable basis. We hope that our Report and the concurrent one on “Change for the Better: Global Change and Economic Development” will provide a special opportunity for the Commonwealth to contribute in these vital areas.

10. The second theme is that the agenda of environmental concerns of vital interest to most Commonwealth members includes subjects which are usually not in the international spotlight. While problems such as ozone depletion, global warming, and loss of biodiversity tend to dominate international attention, the solution of everyday occurrences such as soil erosion, water sharing and pollution, shortages of fuelwood, and overfishing, among others, is perceived to be more urgent by many countries, especially in the developing world. We give them attention here.

11. A third theme is that action is required of both developed and developing countries, according to their respective resources and circumstances, in a strengthened system of global cooperation. But developed countries bear the primary responsibility for redressing the global environmental problems which they have largely created and are continuing to perpetuate. On the other hand, the solution of many environmental problems in developing countries lies primarily in local and national actions. However, the international community can assist them through sharing experiences and technology, and providing new and additional financial resources, complementing their actions with appropriate changes in trade and aid policies. Developing countries have an obligation to contribute to global solutions; but they need incentives and support to enhance their capability to pursue sustainable development and resist short-term pressures.

12. Our fourth theme is a belief that economic growth and development

(including human resource development) should be compatible with sustaining the environment. We reject the notion that, because present patterns may be unsustainable, growth and development should be slowed, arrested or even put into reverse. This would increase the vast international disparities in income and wealth, and would fail to provide the incomes and jobs needed by expanding populations. It would keep the poor and disadvantaged groups trapped in poverty. The challenge is to select patterns of growth and development which are sustainable—which respect and nurture the environment while delivering the economic benefits. Global capabilities in terms of capital and human resources and technological potential make this a possibility.

13. Fifthly, we indicate the important position of women in all countries in the achievement of sustainable development. Their crucial roles in households, in natural resource management, in other sectors of the economy and in human resource development, put them in a central position in helping to achieve sustainable development. Recognising this, we believe that all initiatives on sustainable development should include a gender perspective.

14. Sixthly, we find that small states are particularly exposed to some environmental problems, especially sea-level rise and degradation and pollution in coastal zones which inevitably form a substantial part of their habitat. But despite this exposure, these states are badly placed in getting their interests represented in international negotiations.

15. Finally we call for a transformation of economic perspectives in order to address sustainable development with the required urgency. This has major implications for policies on financing development, for fiscal and regulatory action to encourage sustainable practices, and for technology development and transfer to assist poorer communities. To take just one example, at present most industrial countries provide many price supports and grant many subsidies whose effects are to degrade the local and global environment. The excessive burning of fossil fuels is a case in point.

16. In the remainder of this chapter we summarise our conclusions and major recommendations on how we believe this challenge should be met. We start with the pursuit of sustainable development, dealing initially with some general principles and then concentrating on the vital areas. This is followed by chapters which focus on the possible effects of climate change, the special problems of small states, and the particular environmental concerns of women. We conclude with some comments and recommendations on the institutional changes needed nationally and internationally to ensure sustainable development.

Sustainable Development : Some General Considerations

17. There is broad agreement that the essence of sustainable development

is to keep choices open for future generations. Current economic growth and development must not be at the expense of future prospects. This requires marked changes in life-styles for some people and in ways of doing things for almost everyone. We set out six principles for sustainable development. First, that critical environmental assets be left intact and where there is doubt, the precautionary principle should apply. Secondly, that renewable resources be used in general only up to their sustainable yield levels. Thirdly, that national accounting systems be based on a full valuation of all activities and assets and reflect the depreciation of environmental assets, and that project assessments include environmental and social costs. Fourthly, that finite natural resources in plentiful supply be exploited subject to environmental appraisal and equity considerations, but that scarce ones be managed and substitutes sought assiduously. Fifthly, that the relationship between a community and its environment be considered an integral part of sustainable development. And sixthly, that considerations of equity (within and between countries) be taken into account in all decisions concerning environment and development.

18. The challenge is to translate these principles into policy and practice. This is not always straightforward. It will call on the judgement and resourcefulness of all those involved in managing development. *We recommend all governments to take early steps to translate these principles of sustainable development into practical policies appropriate to their particular environmental and developmental circumstances. This calls for a major change in economic perspectives. The Commonwealth should help its members in this transformation, which would require the evolution of a qualitative change in functional cooperation among its members.*

19. Industrialisation and the affluence which has accompanied it have been the cause of excessive rates of consumption of natural resources. They are also responsible for most of the world's environmental degradation, e.g. air and water pollution, ozone depletion, carbon emissions from fossil fuels, excessive logging of tropical timber, and the loss of rare animal and plant species. Since affluent societies have alternatives and resources available to make the necessary adjustments to their life-styles, most of these problems are more soluble than those stemming from poverty. Given political will it is possible for these societies to move to sustainable development. Getting the affluent to reduce their consumption and waste of many natural resources is vital.

20. At the other extreme, poverty is a major cause of environmental degradation in developing countries. Many poor people are compelled to take a short-term attitude towards the use of their resources, and lack access to the capital and credit necessary to conserve their assets. In some cases their consumption takes place at the expense of economic assets and therefore future living standards. High population density and growth against a back-

ground of an inequitable distribution of productive assets make sustainable development more difficult to achieve. Poor communities also tend to rely disproportionately on common property resources such as forests and pasture, which tend to become degraded. For such reasons, poverty worsens pressures on the environment. Its rapid alleviation is essential to reduce environmental stresses. We recognise that some communities have lived in harmony with their habitats for centuries and have evolved sustainable practices. But we are also aware that this harmony can be upset by natural and human events, such as droughts, wars, refugee movements, unsupportable population growth or a pace of change which is difficult to manage.

Sustainable Development: Some Critical Areas

21. Of the many areas relevant to devising sustainable development strategies, we have chosen half a dozen for closer attention. They are energy, land and agriculture, biodiversity, water, oceans, and forests. We appreciate there are many others, but consider these to be of fundamental importance to both the environment and development.

Energy resources and use

22. The achievement of sustainable development faces its sternest task in meeting the world's energy needs in ways which do not destroy local and global environments. Given the tremendous disparities existing in energy consumption and the pressing needs to relieve poverty through more rapid economic growth, developing countries will obviously have a growing demand for energy. But the present pattern and growth of world demand for commercial energy cannot continue without causing unacceptable pressures on the environment. Industrial countries, which consume a disproportionate share of the world's fossil fuels, account for around three-quarters of the carbon dioxide (CO₂) emissions which are the largest single contributor to global warming. Atmospheric concentrations of CO₂ could be stabilised at about 50 per cent above pre-industrial concentrations by the middle of the next century if continuous reductions of global net emissions of CO₂ at a rate of 1-2 per cent a year were initiated now. This will require swift and comprehensive action by industrial countries to reduce energy consumption, conserve energy and develop more energy-efficient technologies. Developing countries, too, for both financial and environmental reasons, will need to increase the efficiency with which they use fuel and power. They will require more capital and greater access to the relevant technologies to bring this about. The development of renewable energy resources needs to be accelerated world-wide. Subsidies for fossil fuels should be reduced. The market share of technologies to produce energy based on solar, wind, ocean, biomass and mini-hydro sources should be increased by changes in pricing policies and intensified research and development. Many of these sources would

bring particular benefits to women and some are especially suitable for small states.

23. *We therefore recommend a four-pronged attack on the global energy problem:*

- industrial countries should use fiscal and other means to restrain their own use of energy, encourage its conservation, develop energy-efficient technologies and facilitate their transfer to developing countries. This last item should be an important priority in Commonwealth functional cooperation;*
- developing countries should also improve their energy-efficiency through appropriate changes in policy, institutional structures and pricing. Their capacity to absorb, adapt and develop energy-efficient technologies should be strengthened;*
- the development and use of renewable sources of energy should be encouraged by all countries through pricing policies (influenced by fiscal means), pilot projects, information exchanges, ‘twinning’ arrangements (with energy utilities in other countries), and aid policies; and*
- an international tax on carbon emissions should be considered as one way not only of curbing the use of fossil fuels but also of providing resources to facilitate the achievement of sustainable development in developing countries.*

Land use and degradation

24. A high proportion of the world’s productive land is subject to various degrees of degradation. In addition to their more general environmental costs, soil erosion and reduced fertility pose a clear threat to future food supplies. Even the maintenance of present levels of food production will be difficult in some regions. Modern systems of agricultural production, which were major contributors in solving the food problem for the present generation, are demanding in environmental management. Chemicals used in modern agriculture are a major source of environmental damage.

25. The causes of land degradation, as well as its solutions, vary according to circumstances, but there are three typical situations. The degradation of watersheds, which potentially affects half the world’s population, can be traced most directly to unsuitable cultivation practices or deforestation; but its fundamental causes may be population growth, inequitable distribution of productive resources, especially land, economic decline and greater poverty, and farm policies that encourage soil-eroding crops. Some of these factors

are easier to change than others, but in general, governments have a wider range of powers at their disposal than is commonly realised.

26. The loss of fertility of many irrigated areas, because of salination and waterlogging, is especially serious in view of the fact that they account for one-third of the world's food production. Major increases in irrigated areas may not be feasible in future. Hence increasing existing yields through sustainable practices is vital. Current problems are caused by a mixture of factors, including the design and operational practices of the schemes, neglect of drainage and maintenance, and excessive use of water due to a failure to charge enough for it. Solutions lie in the realms of rehabilitation, redesign, better maintenance, improved financial and fiscal arrangements, and more effective management in general. It is especially important that all future irrigation schemes include adequate measures to stop salination.

27. Drylands, where some of the world's poorest people live, are particularly fragile environments. They are especially at risk from global climate change. Localised degradation can be attributed to overgrazing, the collection of fuelwood and the inappropriate encouragement of commercial farming. The breakdown of traditional methods of conservation and adaptive husbandry is an aggravating factor. Government projects in drylands, with or without aid, have a chequered record and we urge caution. The choice and design of projects, the creation of off-farm jobs, and the encouragement of alternatives to fuelwood need careful attention.

28. *We recommend that governments, especially of developing countries, should:*

- stem the degradation of watersheds and hillsides by undertaking land conservation schemes, encouraging off-farm employment, providing incentives and resources for land conservation, improving security of tenure, and modifying pricing and other policies (e.g. input subsidies and tax incentives) to minimise adverse effects on the environment;*
- enable irrigation schemes to produce at nearer their full capacity and arrest the decline in soil fertility by improving these schemes' design, strengthening their financial arrangements, improving their maintenance, and promoting the use of natural methods of pest control; and*
- improve the welfare of those living on drylands, by diversifying employment opportunities for marginal farmers, developing credit programmes bearing in mind the specific needs of women, and designing projects (including aid projects) which give more emphasis to community-initiated, controlled and managed schemes (e.g. for irrigation and social forestry).*

Biodiversity

29. Biodiversity is important for sustainable development for several reasons. We stress two of them—its resilience to environmental shocks and its value in food production. Genetic manipulation is replacing selective breeding, and the patenting of organisms produced by this method should be limited by international measures. Developing countries should be assisted in carrying out their own plant and animal breeding.

30. Tropical forests and other habitats in developing countries are a great store-house of biological resources. Since conservation has costs, international cooperation and assistance is very important for the preservation of species. Biotechnology, which is not always very costly, should be supported in developing countries in order that the comparative advantage many of them possess in terms of biological resources could be used to their advantage.

31. *We recommend that governments should participate in the negotiations on an international convention to conserve biodiversity; increase international funding for this purpose; and intensify research to clarify priorities and assess the costs of restraining particular uses of biological resources. Assistance to developing countries could be very helpful in their development of biotechnology.*

Water resources

32. The supply and use of water will be a dominant issue in development in the 1990s. The problem of misuse and pollution is universal, though it has different facets. Water is becoming increasingly scarce and conflicts are emerging between countries and different kinds of users. Growing cities are able to satisfy their water needs only at increasing cost, and with greater environmental damage. The pollution of water by industrial effluents, untreated sewage, and agricultural run-off etc., is both a health risk and reduces the scope for recycling. Global warming is likely to aggravate the problems of managing water resources.

33. The water problem has three layers. The first is that a sizeable part of the present global population has an unsatisfactory water supply and inadequate sanitation. Improving their lot was the task of the UN International Decade for Drinking Water Supply and Sanitation. Despite progress, the task is unfinished. The second layer of the problem is to reform water consumption habits in order to make them more sustainable, and avoid the environmental costs which are so evident. The third is to assure water supplies for the future, when populations will be larger and needs greater.

34. There is great scope for reducing the waste of water which now occurs

in all sectors, such as agriculture, households, industry and municipal supply systems. This could be realised by a combination of physical investment, improved management, education, and exhortation, regulation and the greater use of the price mechanism. Pollution can likewise be reduced by a mixture of regulation, investment in abatement and treatment facilities, and price incentives.

35. *We recommend that all governments should develop comprehensive long-term plans for the integrated management and conservation of water resources. High priority should be given to improving water supply and sanitation, especially in rural areas, and the development of appropriate technologies, particularly for waste management. Changes in the level and structure of water charges should be pursued to promote conservation and more efficient use, and appropriate sanctions should be levied to deter pollution. Water management should be viewed in a comprehensive and integrated way, and greater attention given to institutional development to resolve the urgent problems involved. Consideration should be given to the international institutional aspects, and one possibility might be to set up an International Water Council within the UN system, as a means for global coordination, assessment and action.*

Oceans and coastal areas

36. Oceans play a critical role in weather patterns and provide a livelihood as well as food for many coastal peoples. Their resources should not be destroyed by wasteful exploitation and over-utilisation when humanity has so much more to learn about them. They are especially important for small island states, under which heading we consider them in more detail.

37. Coastal zones are significant areas of economic activity in all countries bordering the sea but they are especially important to island small states and to those low-lying countries which would be susceptible to sea-level rise or storm surges as a result of climate change.

Forests

38. Forests benefit the environment in many ways. They help regulate the climate, protect watersheds, supply subsistence and commercial products, and maintain biodiversity, to name but some. Deforestation is having grave effects, both globally and locally. Forests are the home of millions of people, and satisfy many of their needs. We emphasise the importance of sustainable management of forests for the welfare of local people and the benefit of national governments and the world at large. The removal of trees to accommodate population pressures and the expansion of subsistence agriculture are deep-seated problems in many countries. In some areas, especially semi-arid zones, deforestation is aggravated by the use of fuelwood and an extension of cattle ranching. In other regions, commercial logging and expanding cultiva-

tion are the major causes. There is a need to reassess a complex of policies covering land tenure, pricing and credit, and international trade in timber products. Commonwealth and wider international cooperation and assistance are vital to facilitate conservation and sustainable use, especially since deforestation has global consequences in relation to protecting world climate and conserving its biological resources.

39. *We recommend that:*

- *governments should seek to maintain a regularly updated audit of their forest resources and attempt to estimate the minimum viable limit below which forest cover should not be allowed to fall; undertake reforestation and afforestation programmes where necessary; estimate the many values of forests and bring them into play in all decisions on converting forests for other uses; review the terms of logging concessions and ensure that they reflect fully all environmental costs;*
- *governments of developed countries should reduce the escalation of tariffs and other barriers on imports of timber products, in order that the countries of origin can exploit smaller areas of forest but obtain at least the same return. They should also make additional resources available to timber conservation projects which confer important international benefits to the environment, and recognise that this may require new and additional financial mechanisms; and*
- *Commonwealth governments should exchange information on experiences in sustainable management of forests, and mobilise adequate resources to support the implementation of the Commonwealth-Government of Guyana Programme for Sustainable Tropical Forestry.*

Climate Change

40. Climate change due to global warming has potentially far-reaching consequences for all countries. Some changes, like sea-level rise, pose particularly serious dangers to island small states and countries with low-lying areas, which constitute a majority of the Commonwealth's membership. Developments during the past two years have generally confirmed the validity and relevance of the conclusions and recommendations of the 1989 Commonwealth Expert Group Report, "Climate Change—Meeting the Challenge" and the Langkawi Declaration adopted by Commonwealth Heads of Government the same year. There is now a broader scientific consensus, reflected in the conclusions of the Intergovernmental Panel on Climate Change and the Second World Climate Conference, that the problem of global warming is real. Should global emissions of greenhouse gases continue to increase at existing rates, the world would probably be 2°C—5°C warmer, and sea-levels 30cm—100cm higher, by the end of the next century.

41. There are still doubts on the timing, magnitude and, especially, regional patterns of climate change. Expanded research and monitoring are needed to reduce these uncertainties. But the world cannot afford to wait until all of them are resolved. The precautionary principle justifies action now, both to reduce emissions and to adapt to possible changes in climate, as urged by the 1989 Commonwealth Action Plan. An acceleration of the time-schedule for phasing out ozone-depleting chlorofluorocarbons would also help to slow down global warming.

42. We are pleased to note that industrial countries in the Commonwealth and elsewhere have announced targets for stabilising, and in some cases reducing, emissions of the major greenhouse gas, carbon dioxide. This is an important step towards developing an international response to global warming. Coordinated action is however needed and is being achieved through the UN Intergovernmental Negotiating Committee for a Framework Convention on Climate Change. The burden of measures to reduce greenhouse gas emissions will fall overwhelmingly on the industrialised world, which is currently responsible for three-quarters of the total and an even larger proportion on a historically cumulative basis. But, over time, restraints on emissions by developing countries—especially by those whose emissions are increasing at fast rates—will be essential for an effective global response. Actions by developing countries should be facilitated by greater flows of capital, information and transfers of technology, to enable them to move to more efficient energy-use.

43. Climate forecasting is currently hampered by the lack of data in many regions of the world, especially in the southern hemisphere. Many Commonwealth and other developing countries currently lack the capacity to make proper assessments of their national net emissions of greenhouse gases. This constrains their capacity to plan response strategies and impedes the development of an internationally accepted data base on greenhouse gas sources and sinks. Improved mechanisms for co-operation in monitoring, research and evaluation of climate change and its possible impacts are needed to reduce uncertainties, particularly at regional and national levels.

44. Both the Commonwealth Report and the IPCC's First Assessment Report have provided insights into possible impacts of climate change, on agriculture and forestry, on natural terrestrial ecosystems, on water resources, on human settlements and infrastructure, and on oceans and coastal zones. Each underscores the need to begin planning adaptation strategies, some of which are in any case required for other reasons. The possible impacts of climate change on small island and low-lying states are of particular concern.

45. The threat of sea-level rise necessitates the development of comprehensive plans for managing coastal zones. The possible increased frequency of extreme events like tropical storms calls for the strengthening of disaster

preparedness and response mechanisms in many countries. Most Commonwealth economies depend heavily on the agricultural sector, which makes the potential impacts of climate change a matter of serious concern. Though there is at present insufficient knowledge about how the phenomenon will affect the frequency of extreme events, an increase in the risk of drought is potentially the most serious impact on agriculture at both global and regional levels. Potential impacts on human health are also a matter of concern. Global warming may result in a poleward spread of diseases currently confined to tropical zones.

46. *We believe the 1989 Commonwealth Action Plan should continue to guide the actions of Commonwealth governments. In particular, we recommend that:*

- the Commonwealth should continue to emphasise its support for early agreement on a global convention that is both effective in reducing global warming and equitable in distributing the burden of international response. International taxes on carbon emissions should be considered as a means both of curbing emissions and of mobilising additional resources to provide financial assistance and facilitate technology transfers on affordable terms to help developing countries to take appropriate action in this regard;*
- priority should be given to strengthening national capacities—especially in small island and other low-lying countries—to monitor climate change and sea-level rise. Industrial countries in the Commonwealth and elsewhere which have not already done so, should contribute to the Special Fund for Climate and Atmospheric Environmental Studies of the WMO. All Commonwealth countries should participate in the new Global Climate Observing System;*
- Commonwealth countries which have expertise in monitoring climate change and sea-level rise, and in assessing their resultant impacts, should provide more assistance to those developing countries most at risk; and*
- within the framework of the UN International Decade for Natural Disaster Reduction, all Commonwealth countries, by the year 2000, should have in place: national assessments of disaster risks; national/local plans for reducing vulnerability to, and mitigating the impact of, disasters; and access to early-warning systems.*

Small States: Environment and Development

47. The particular physical, geographical and economic circumstances of Commonwealth small states, most of which are islands, make them especially susceptible to certain environmental problems. In island small states,

the extensive interface between land and sea increases the fragility of coastal ecosystems and the demands of coastal management. Consideration of small states as a microcosm indicates unique opportunities for research in environmental protection and conservation. For instance, the geographical situation of many small island states makes them ideal locations for establishing stations to observe and monitor global warming and climate change. However, these countries do not have the technical capacity and financial resources to undertake these activities themselves. But since by doing so they would be serving the whole of humanity, financing should be recognised as a global responsibility.

48. Climate change poses potentially serious threats to small states. In addition to the greater incidence of flooding from sea-level rise and storm surges, the dangers they face range from loss of land area—already in short supply—to increased exposure of freshwater and agriculture to salination. Agriculture and tourism, two important activities in small states, are especially vulnerable. With international assistance, these states need to begin to plan suitable strategies to adapt to their changing situations. Such strategies include construction of low-cost sea defences; stabilisation of natural hurricane banks and conservation of natural defences like mangroves; diversification of agriculture; redesign and relocation of vulnerable infrastructure; and conservation of water resources.

49. Coastal zones are usually the most productive parts of small states bordering the sea. But they are also areas of high environmental degradation, arising from both land-based and offshore sources of pollution. Yet many of the states concerned do not have the technical capacity to deal with the complexities of coastal zone management, nor with the even more demanding task of managing and protecting their 200 mile Exclusive Economic Zones (EEZs). The UN Convention on the Law of the Sea provides for a comprehensive enforceable framework for these and other purposes, and its early entry into force is vital for these states. Greater regional cooperation could also help them in these areas. The development of a worldwide network of protected coastal and marine areas, similar to that for terrestrial areas, would serve to replenish marine resources and maintain genetic diversity of key species. In many islands, rare and fragile coastal ecosystems are subject to a variety of hazards, which they cannot overcome without international assistance.

50. Good management is crucial in preventing over-exploitation of fisheries—a large source of income and a vital source of food in many small states. It is clearly in the interest of local communities that inshore fisheries are managed sustainably. Vesting exclusive user rights with local fishing communities would provide them with an incentive to manage fisheries sustainably and police them against outside encroachment. In respect of fisheries within small islands' EEZs, arrangements to lease fishing rights to

foreign vessels need to be carefully policed. International assistance to set up satellite surveillance systems for monitoring would make this task easier. Harmful practices like drift-net fishing hurt small islands, and need to be controlled through international conventions.

51. Pollution of freshwater supplies is a major problem in most small islands, which have few or no permanent streams or lakes. Lenses of freshwater are often small and easily depleted and contaminated. Groundwater and streams are readily polluted by mining, agriculture and manufacturing activities. Because of porous soils, the leaching of wastes into the groundwater lens has occurred in some atolls. Improving waste management and conserving water resources are major priorities.

52. The international movement of hazardous wastes for disposal is of particular concern to small states, especially to islands whose ecosystems can be irreversibly damaged by careless dumping—including dumping in the high-seas beyond EEZs. These states need international assistance to protect themselves against illegal dumping of wastes, and to make informed and cautious choices about whether they should import such wastes.

53. To determine the potential effects of environmental degradation on their development, and to design and implement appropriate mitigation measures, small states need better access to the relevant scientific and other technical information. They could be assisted in this by the establishment of facilities for data storage, retrieval and dissemination through regional institutions.

54. Above all, small states need help in improving the articulation and representation of their interests in international forums, and more opportunities to share experiences in evolving their environmental policies.

55. *We recommend that:*

- *natural hazard management in small states be made an integral part of planning in all sectors of government, and that mechanisms for early warning and disaster response be strengthened, through regional cooperation where appropriate;*
- *regional cooperation among island small states should be strengthened, with Commonwealth and other international support in coastal zone management and protection of EEZs (through joint surveillance mechanisms, for instance);*
- *the Commonwealth Secretariat organise meetings and provide technical and financial support to assist small states in their preparations for both the UNCED and the negotiating sessions of the UN Intergovernmental*

Negotiating Committee (for a climate change convention); and

- *small states increasingly avail themselves of the technical assistance on environmental issues which can be provided by the Commonwealth Fund for Technical Cooperation; these and other technical assistance services for small states in the environmental field should be expanded.*

Women, Environment and Development

56. What women do in their roles of producers and resource managers is central to the sustainability of the resource base, and thus to development. They have been playing a major role in environmental management, but this has often not been recognised or included in policy development and decision-making. Much of our analysis underscores the fundamental need to increase and support women's involvement at all levels of decision-making on environment and development issues.

57. Women's daily work and activities in the rural areas of many developing countries brings them into direct contact with natural resources, in their roles as food producers, water collectors, and fuel gatherers. As a result women have indigenous knowledge and this must be utilised if methods of sustainable natural resource management are to be developed. In developing countries most food for subsistence is grown by women, as part of a customary division of labour, and their ability to invest in conservation activities should be supported by secure land tenure or title or access to land.

58. In the case of forests, as with many other resources, women are the carers and guardians of the environment. Rural women rely heavily on trees for fuelwood, fodder, fruit etc., and as a result they also understand and appreciate the value of the many products and services the forest can provide for themselves and their families. Likewise, women typically spend much of their time fetching water or using it for washing and cooking. They are the first to experience difficulties with its supply and they understand how to maintain its quality if circumstances allow them to do so.

59. Women's role as managers of household and natural resources needs to be supported for sustainable development. Greater access to education and training, the facilitation of exchanges between women, the availability of more information, and enhanced access to the decision-making processes will all help to empower women in managing natural resources. Women have a special interest in conserving the environment and there are many instances where their campaigns have led the way.

60. Local communities—and especially the women among them—already doing much to foster sustainable development. Many have indepen-

dently developed working models of primary environmental care from which others could gain.

61. *We recommend that governments and relevant agencies should:*

- recognise and build on the achievements of women and women's organisations in conserving the environment and the planet's natural resources, and thus in promoting sustainable development;*
- facilitate and encourage the involvement of women and communities in all aspects of project design, planning and policy making on environmental matters, especially where this is externally initiated. This will involve conducting gender analyses at the early stages of project design and training staff in gender-awareness;*
- take measures to secure women's (and men's) rights—traditional and other—to the use and ownership of resources, especially through security of land tenure or title;*
- make good use of women's knowledge of local eco-systems and trees when planning or implementing reforestation or afforestation programmes;*
- make a firm commitment to support women's efforts in resource management in developing countries, e.g. by allocating a proportion of their budgets to community initiatives for the rehabilitation and enhancement of the resource base;*
- give special attention to providing women with education and training to support their roles in the community and in natural resources management—including the provision of exchange-based learning opportunities for women with other groups on a South-South, North-South and North-North basis; and*
- disseminate more information on environmental pollutants, some of which are particularly injurious to women's health.*

Institutional Change for Sustainable Development

62. To implement the substantial proposals we have made in this Report, as well as the enhanced Programme of Action under Agenda 21 that UNCED is likely to adopt, will require institutional change at the national and international levels. Changes will also be needed to reflect the new salience of environmental matters and the integration required between them and development policies.

63. We are not able to generalise about the ideal institutional framework a country should adopt. Needs will vary, depending on countries' individual objectives and circumstances. Whatever institutional solutions governments do adopt, we suggest that they should be derived from addressing the objectives of long-term National Strategies for Sustainable Development (also known as National Conservation Strategies or Environmental Action Plans), which integrate environmental policies into all social, financial and development planning. Such strategies would help identify the most serious problems and make clear the interconnections between discrete problem areas.

64. To carry out and coordinate these strategies we believe that in most cases, a Ministry of the Environment should be established where one does not exist already. This should be headed by a Minister with cabinet status in order to give it sufficient authority to be effective in dealing with other ministries. The Ministry would participate in policy formulation, deal with standard-setting and monitoring, and maintain close collaboration with ministries and departments responsible for sectors such as forestry, mining, industry and water, as well as with those concerned with finance and economic planning.

65. We appreciate that many countries already have such a Ministry and that its work has meant some advance in the way environmental issues are dealt with. But these ministries are not contributing much to the new emphasis on sustainable development. Their work needs reorienting so that it follows a more holistic approach and integrates environment policy with development policy. This will be necessary if development is to become sustainable.

66. In most countries new mechanisms of coordination are needed in the environmental field. These would strengthen linkages between different levels of government and between the government, the private sector, NGOs and the general public. Access to relevant information, at the earliest stage of planning, is a prerequisite for effective participation by the public and by NGOs, in the development of environmental policy, and in the assessment of the environmental implications of policies and projects. Local community organisations (e.g. women's groups and farmers' co-operatives) need to be strengthened to give them a more persuasive voice in influencing environmental policies made at high levels.

67. Complementing the formal institutional structure represented by a Ministry or as an alternative at early stages of institutional development are networking systems. These work through multi-disciplinary groups by coordinating expertise and activities to address specific problems of environmental concern. We attach great importance to these systems. They are being used with success to get more attention for and action on sustainable development issues.

68. A number of other management components are needed to effect the strategies. We suggest they should include the development of:

- natural resource accounting. This would enable national accounting systems to reflect the depletion or degradation of national environmental capital (such as land, forests and water resources) and, where appropriate, social costs; and it would also enable comprehensive screening mechanisms to cover all development projects and programmes to establish whether they require an environmental impact assessment (EIA) and, if so, to ensure that the EIAs are implemented and followed up by regular monitoring;
- information brokerage. There is a considerable potential for making savings in resources among countries by exchanging information on the environment, particularly that which is in the public domain;
- education and training. This is a vital area for helping to overcome the environmental problems of developing countries, and greater international cooperation is required for this purpose; and
- technology transfer. The need here is to strengthen the indigenous capability of developing countries to make informed decisions when choosing environment-friendly technologies (especially foreign ones) and to absorb and apply them—in some cases after adaptation—effectively. There is also a need to facilitate the access of these countries to the more expensive technologies and related ‘know-how’ on terms which are affordable. Novel schemes, involving the provision of fiscal incentives to the private sector and the subsidisation of costs (with revenues raised through environment taxes), could be introduced to facilitate transfers to countries with the greatest needs. The technology dimension of sustainable development is important and requires improved assessment capabilities by government.

69. *At the international level, institutions should be strengthened, both technically and financially. But here, again, the shift of emphasis to sustainable development requires greater coordination of operations among all international institutions concerned with environmental action. This would include not only UN technical institutions such as UNEP but also the international financial institutions like the World Bank.*

70. *Integration between environment and development is also needed at the level of international deliberations. New institutional arrangements are required, to function at a high level in the United Nations.*

71. *The issues of institutional change and technology transfer are linked with the need for additional financial support to assist developing countries to move to sustainable development policies. Faster movement to the use of*

environmentally sound technologies is urgently required, and provides an important part of the rationale for increased assistance to developing countries. Additionality would guard against the resort to environmental conditionality.

72. *The establishment of new funding mechanisms to deal with specific problems has been one way of encouraging additionality. This should continue but with enhanced efforts to secure coordination of management.*

73. *Commonwealth functional co-operation needs to be strengthened to meet the critical requirements of many of its member developing countries for adequate professional, scientific, technological and institutional capabilities to tackle environmental problems.*

74. We hope Commonwealth governments will be able to facilitate global consensus on the issues of increased financing for environment and development, and favourable conditions for technology transfer, which are critical to UNCED's success. Though our Report is concerned largely with institutional development in a national context, we stress the importance of the Commonwealth's full involvement in shaping institutional changes required at the global level to facilitate effective and concerted action on environmental problems, in the context of development.

75. *We recommend that:*

- all governments which have not yet done so, should seek to develop long-term National Strategies for Sustainable Development. These should integrate economic and environmental considerations and take account of inter-sectoral linkages, as well as recognise the varying nature of the institutional requirements concerned. In formulating such Strategies, governments should consult the private sector and relevant community organisations;*
- Ministries of Environment should be established, where this has not already been done, and assured of a strong role in coordinating environmental concerns and, in close collaboration with Finance and Economic Planning Ministries, integrating these with development. They should also play a major role in standard-setting and monitoring;*
- greater use should also be made of networking—bringing together multi-disciplinary groups to address specific problems, especially where a formal institutional structure is not yet in place;*
- more support should be given to implementing the concept of Primary Environmental Care. This requires additional help for community-based*

projects with integrated approaches to environmentally-sound development;

- special attention should be given to mobilising additional flows of official finance to developing countries so as to enable them to implement actions on environment and development agreed at the international level and to promote sustainable development domestically;*
- incentives and regulatory policies should be put in place to foster a greater flow of private resources, especially to developing countries, in support of ventures which are environmentally sound;*
- measures should be taken to promote the development and transfer to developing countries of environmentally-sound technologies. Apart from making available more information and modifying the treatment of intellectual property rights, this requires greater financial support;*
- Commonwealth governments, and where appropriate the Commonwealth Secretariat, should take action to facilitate:*
 - exchanges of information, especially on a South-South basis, in environmental management and planning, through workshops, seminars and study tours, and through environmental evaluation studies and reports;*
 - the establishment of training courses in environment and development and the setting up of centres for R&D into related issues; and*
 - the strengthening of existing, or the creation of new, networks among institutions in Commonwealth countries, for pooling and exchanging information in various other environmental fields, including evaluation and use of low-cost and low- or non-polluting technologies.*

In all three areas, special attention should be given to the needs of small states and women; and

- Commonwealth governments should extend their support to the establishment of effective global institutional arrangements for the implementation of decisions agreed at UNCED. They should support the establishment of a high-level, regular, deliberative process which integrates environmental and development issues; and the improved coordination of agencies including the international financial institutions, concerned with sustainable development programmes.*