Chapter 7

Institutional Change for Sustainable Development

7.1 Previous chapters of our Report have drawn up a substantial agenda for action by all parties concerned. We turn finally to the issue of how to develop appropriate institutions and policies for implementing these actions. In dealing with institutions we define these in their broadest sense, as the relationships, rules and frameworks which govern the daily management of society. In addressing environmental issues we view these within the context of sustainable development in terms of "an economy that is developing sustainably, adapts and improves in knowledge, organisation, technical efficiency and wisdom; and does this without consuming, coopting or diverting, beyond some point, an ever greater percentage of the matter and energy of the ecosystem, stopping at a scale at which the ecosystem can continue to function and renew itself year after year."[1]

7.2 The environment is an all-encompassing issue which calls into question the way in which its different facets are now handled. Currently, in many countries, national policies and institutions are generally too compartmentalised for a satisfactory treatment of environmental and developmental problems in an integrated manner. In Chapter 5 we noted, for example, how the need for coastal zone management and a coordinated response to sea-level rise cut across traditional organizational boundaries.

7.3 It has become a common chorus that sustainable development and environmental management are intersectoral in nature and require multidisciplinary and holistic approaches to problem-solving and programme development. Societies and their policy-makers are required to adopt a new *locus standi* if they are fully to integrate environmental concerns and development policies across all sectors and all levels of activity. The starting point,

we suggest, for bringing in the required institutional and social changes is devising and implementing National Strategies for Sustainable Development (NSSD) (also known as National Conservation Strategies (NCS) or Environmental Action Plans (EAP)).

7.4 NSSDs are invaluable in that they provide consistent guidelines on the balance between resource exploitation and conservation. They can thus be used not only to help identify the most serious environmental and other problems in following a path of sustainable development, and establish priorities for doing so, but also to make clear the interconnections between discrete problem areas (e.g. between land-use, deforestation and degradation of watersheds) which otherwise are often treated on a case-by-case basis. In small states and islands, for example, we observed in Chapter 5 that a single environmental problem, such as coastal pollution, might entail adjustments with ramifications throughout the economy. NSSDs can include capital projects and thereby give clearer indications of projects to potential investors, e.g. in resource industries. In that connection we note that a number of countries have begun to seek financing so as to develop environmental investment portfolios[2]. Some have also started to undertake long-term global prospective studies, whose findings, we suggest, should be integrated as far as possible into NSSDs.

7.5 To attain sustainable development, NSSDs should also take into account the social dimensions of development and the differential impact of policies and programmes upon groups within society. Gender-analysis techniques will provide an important tool for helping to achieve this, and so will participatory government and development processes.

7.6 The national institutional arrangements needed to address the environmental and other issues related to sustainable development should be directed by and evolve out of the National Strategy or Plan. They are therefore likely to vary according to the socio-economic characteristics and environmental concerns of individual countries. Box 7.1 on pages 126-127 provides details of one case—the Environmental Action Plan for Mauritius.

7.7 Governments should be primarily responsible for drawing up NSSDs, but they should be undertaken in consultation with the private sector, NGOs and the general public. Special efforts should be made to ensure that women and their organisations are involved in these consultations. We acknowledge that NGOs, many of which are active at the local level, are often very effective in environmental management, and we suggest that, where appropriate, governments might recognise or at least give greater recognition to their roles, while enabling them to retain their independent status. Environmental impact assessment of development projects should be undertaken with technical support from NGOs and the private sector where they have the relevant expertise.

Necessary Components for Developing and Managing National Strategies for Sustainable Development

7.8 We recognise that there are several possible routes to developing NSSDs, and that institutional needs will vary among countries, depending on factors such as levels of economic development, types of economic structure, geographical and population size, level of development of human resources, scale of environmental problems, and so on. However, general components of management to effect National Strategies would include certain arrangements which we discuss below.

Institutional arrangements

7.9 National institutional arrangements for sustainable development are still in great need of advancement in most countries. Formal arrangements are being complemented with less formal networking and ad hoc arrangements to deal with specific problems. We consider networking systems later (see paras.7.20-7.24).

7.10 The usual approach to effective environmental action is of establishing or extending formal institutional structures and mechanisms, within and outside government, to create and implement a comprehensive and integrated policy-making system for this purpose. Existing government structures vary greatly. Within central government, some countries have established major ministries of the environment, with responsibilities not only for policy, coordination and research, but also for management of environmental resources (water, air and land) as well as for environmental conservation and the management of certain major sectors of government related to the environment—such as health, housing and transport. Other countries have simply extended existing ministries, with broad responsibility for policy planning and coordination (including coordination between levels of government), but without any programme management responsibilities. Between the two, a wide variety of structures exist,[4] as can be seen from Box 7.2 on page 128 which outlines institutional arrangements for integrated development planning in Latin America.

7.11 One of the criticisms of formalised structures, is that they tend to treat environmental issues as separate and distinct, and lack the flexibility needed to deal with a variety of cross-sectoral issues. This has hindered the integration of environmental concerns into development programmes.

7.12 *In considering the establishment of a formal institutional framework, we feel that it would be desirable for countries which have not already done so, to consider setting up a Ministry of the Environment.* Because of the central importance of the subject and its multifaceted nature, we believe that such a Ministry should be headed by a Minister with a seat in the Cabinet.

Box 7.1

An Environmental Action Plan for Mauritius

Mauritius was among the earliest Commonwealth developing countries to develop an Environmental Action Plan (EAP). The quickening pace of industrial and tourist development in the early 1980s, and associated urbanisation, had started to exert noticeable pressure on the environment. Reports of environmental degradation in a prime tourist resort in the north of the island had made newspaper headlines. Evidence of damage to the marine ecosystem, including coral reefs and fish habitats, was growing. The problem was compounded by the diffusion of regulatory authority and the division of often overlapping responsibilities for environmental protection among several government ministries and departments, including independently-elected government bodies. An action-oriented EAP was clearly called for.

The idea of tackling the emerging environmental problem head-on had already surfaced during regular consultations between the World Bank and Government in mid-1987. The country was then gradually emerging from its active adjustment phase supported by World Bank and IMF programmes, but the Government was sufficiently worried to pinpoint the environment as a major issue in its policy dialogue with the Bank. It sought Bank assistance outside the framework of any project or programme loan—not even the faintest contours of an environmental project were yet in sight—to make an inventory of all existing legislation pertaining to the environment and advise on institutional reform in the area. Subsequently, a National Environment Committee was set up to address the issue in a comprehensive manner, with a remit to identify weaknesses in the existing framework and make proposals for an action plan to address the critical environmental issues facing the nation.

UNDP provided financial support for a technical assistance team fielded by the World Bank to work closely with Mauritian nationals to develop an EAP, covering all sectors of the economy. By end-February 1988, the National Environment Committee had completed its work and produced a set of recommendations for enhancing the effectiveness of the institutional and legislative structure. These were incorporated in the comprehensive EAP document prepared by the technical assistance team under the title "Economic Development with Environmental Management: Studies for Mauritius".

The broad outline of the draft EAP received Government approval. But there was one major proviso. The details of the proposed EAP had first

to be discussed at a National Technical Seminar on the Environment to seek national consensus on its scope and contents to ensure that it reflected the views of all segments of Mauritian society. This was in keeping with the well-entrenched democratic traditions of Mauritius and was rooted in the belief that an EAP which had popular support stood a better chance of being implemented successfully.

Government also moved fast to reform the institutional mechanism. A National Environmental Commission (NEC), chaired by the Prime Minister, was set up to monitor the implementation of the EAP and resolve inter-ministerial and cross-sectoral problems. A Department of the Environment was set up, thereby putting an end to a certain amount of confusion that had characterised the earlier approach to environmental management problems. In parallel, work began on an Environmental Protection Bill to provide for a comprehensive legal framework and suitable operating mechanisms to protect the environment.

The National Technical Seminar on the Environment was held in September 1988. It brought together some 150 participants from both the public and the private sector, NGOs and international aid agency representatives. The national EAP was given its final form by a joint Government of Mauritius/World Bank team in the light of the seminar discussions and recommendations. A comprehensive Environmental Investment Programme was also formulated. It comprised the following main components: institutional strengthening; the preparation of a National Physical Development Plan and sectoral Master Plans for sewerage and solid waste management, respectively; the development of a programme to monitor pesticide and fertilizer use and its impact; and the conservation of the country's biodiversity.

The EAP, and the investment programme underlying it, were presented at a Donors' Meeting in Paris in early 1989. Several environmental management projects have since been initiated with the support of major donors and lending institutions, including some regional projects necessitating close cooperation with neighbouring islands, both Commonwealth and non-Commonwealth. To bolster the comprehensive approach enshrined in the EAP, the *Environmental Protection Act* was duly passed by the Legislative Assembly in June 1991. With these measures in place, economic development can continue apace without endangering the island's environment.

Source: based on material from Bheenick[3].

Box 7.2

Institutional Arrangements for Integrated Development Planning

A wealth of experience has been accumulated in Latin America on the subject of integrated development planning focused on natural resources. Some of the arrangements that have worked in a variety of settings are described below, with comments on their strengths and weaknesses.

- Setting up a task force of national agencies to prepare a plan and disbanding it when the plan is complete. This works well for planning, but obviously does not serve for implementation.

- Assigning the responsibility for preparing the plan to a major sectoral ministry or agency which will work under the aegis of the national planning agency. This assures better follow-up while the planning recommendations are being implemented, but its effectiveness is frequently constrained by the limits of the sectoral agency's mandate.

- Placing the responsibility for preparing the plan with an agency specialised in renewable natural resources or environment. Most such agencies in Latin America have a broad mandate and sometimes a spatial orientation comparable to a regional development organisation. However, few of them have financial or political power and some have legal mandates that put them at odds with other sectoral agencies.

- Designating a regional development corporation or a similar institution as the agency responsible for the integrated plan. When adequately funded, this can prove to be one of the best institutional arrangements. There are few such agencies, however.

- Establishing a national or regional study team (independently funded) that can evolve into a regional development or resource management institution when the study is completed. This usually involves an initiative by the national planning agency, a substantial budget commitment by government, and a tentative decision to establish a new institution. It has been successful in a few cases, though mounting a large institution-building effort during a planning study is difficult.

Source : based on Erocal.[5]

Only in this way could the Ministry be assured of effectiveness in dealing with those departments which either had access to greater funding or had more narrowly operational responsibilities. The Ministry would make policy and coordinate all issues having an environmental aspect. It might need to provide advice and facilitate coordination in introducing and administering economic instruments such as pollution charges and compensatory mechanisms. In this it would collaborate with legal, financial, and other relevant operational departments/ministries, responsible for such sectors as forestry, mining, industry and water, as well as with ministries of finance or economic development. The Ministry should also have a technical capability—preferably in-house, so as to assess the quality of consultants' work—to deal with standard-setting and monitoring. The latter activity is especially important, not only to maintain environmental standards, but to ensure that continued environmental evaluation is carried out after projects have been implemented.

7.13 We note that there is growing support for decentralised planning and implementation as a means of improving environmental management. Experience in Latin America indicates that approaches are better integrated and more practical when carried out at the local level. The planning units may be physical regions (such as river basins) or political units (such as provinces or municipalities). In these cases, a phased approach to integrative planning and systematic incorporation of environmental issues would begin with an initial overview of the region, within the context of the country's national development plan, followed by more detailed analysis of priority areas for development[6].

7.14 In addition to developing expertise in the public sector, we propose that governments should encourage private (and public) financing institutions in particular, and the private sector in general, to set up within enterprises 'environmental cells' of people with knowledge of environmental issues, and especially of environmental impact assessment, to ensure that environmental considerations are built into investment decisions. In addition, private enterprises should be persuaded to undertake environmental audits, and to provide information on the environmental consequences of their activities to government environmental management and planning bodies.

Coordinating mechanisms

7.15 Whatever institutional approach a country adopts, we believe mechanisms will be needed to improve coordination:

- between government ministries, departments and statutory agencies;

- between the above and local authorities (which frequently play a crucial role in environmental management in such areas as land-use planning, water resource management and environmental health);

– between all levels of government, the private sector, especially NGOs, and the public; and

– between regional authorities and institutions.

Countries without suitable regional organisations on which to base coordinating mechanisms might consider ways of establishing them.

7.16 A number of countries have already established coordinating mechanisms at various levels of government. These include Cabinet committees, inter-departmental committees of senior officials concerned with environmental matters, and standing and ad hoc advisory groups to consider specific problems or programmes. The last of these is an effective way of involving the private sector and NGOs in environmental policy-making.

7.17 Government departments, NGOs and other agencies working in the community should explore suitable coordinating mechanisms between themselves. People operating in the urban informal sector and with small and marginal farmers and pastoralists in the rural sector can influence day-to-day activities which have a large aggregate impact on the environment, but they usually remain beyond the reach of existing institutional arrangements. NGOs and other community groups can help bridge this gap. Public media and agencies delivering informal education and training can also reach some of these target groups; so can agricultural and technological extension services.

7.18 Every country has its own customs and practices which influence the openness of governmental processes and the degree of access to public information. Access to relevant information, at the earliest possible stage of planning, is a prerequisite for effective participation by the public and NGOs in the development of environmental policy and the assessment of the environmental implications of proposed policies and projects. The same applies to freedom for the general public and NGOs to monitor performance, through access to published assessments and audits. More generally, the mass media could be used to help increase public awareness of environmental issues. *Commonwealth governments, national media, educational institutions and relevant NGOs should do more, and cooperate where possible, to inform the public in their countries of the facts relating to environmental problems, the rationale of public policy responses, and the actions citizens themselves might take to address them.*

7.19 Local community organisations (e.g. women's groups and farmer's cooperatives) need to be strengthened to enable them to have a more persuasive voice in influencing environmental policies made at higher levels. This will serve to increase the effectiveness and relevance of those policies to local needs and conditions. Where such organisations do not exist, it would

be important for assistance to be provided to help those concerned (including urban slum-dwellers) to form effective organisations. Boxes 7.3 and 7.4 on pages 132 and 133 indicate the way in which some community groups are being involved in development projects which are integrating environmental aspects.

Networking systems

7.20 The development of networking involves coordinating and bringing together the expertise in, and activities of, existing institutional structures, to address specific areas of environmental concern. Examples of such concerns would include land degradation; degradation and depletion of freshwater resources; destruction of natural habitats; and urban, industrial and agricultural pollution. An existing Commonwealth Secretariat programme, Institutional Development for Environmental Action (IDEA), which is part of the Commonwealth Consultative Group on Technology Management (CCGTM), is a good example of this approach in practice (see Box 7.5 on pages 134-135). It is developing such networks in some member countries to address a number of environmental problems of immediate concern.

7.21 Networking systems do not replace existing specialised management and administrative arrangements but they do augment them. They are not necessarily ad hoc but rely on particular components and processes which attempt to ensure that the network system is comprehensive, versatile and coordinative.

7.22 Criteria for an adequate networking system include the following:

- inclusion of policy-makers, agencies and services, non-governmental and community organisations, consumers of services, political interests and representatives of affected communities;
- promotion of fresh alliances between interest groups;
- inclusion of methods of conflict management and conflict resolution;
- respect for, and equitable consideration of, age, ethnicity and gender; and
- all interactions directed towards the mutual advantage of the parties concerned.

Figure 7.1 (page 136) represents the various stages of environmental management, the networking task appropriate to each, and the desired outcome.

Box 7.3

Nigeria: Community Action to Prevent Erosion and Improve Soil Fertility

In tackling the problem of 'sheet erosion' which decreases the productivity of local soils and is an early phase of deep erosion, the central theme was the involvement of the rural population and their recognition of environmental protection as a self-interest activity. The studies carried out by the project concerned the extent of local erosion, local eating habits, nutritional status of the population, market situation, traditional agricultural methods, and other socio-anthropological factors and phenomena. The results of these studies proved extremely important in both finding the best ways of communicating with the local farmers and developing the agricultural practices tested in the project. It should be stressed that indigenous farming systems in Africa offer a wealth of experience for ecologically-stable production.

The project promoted the organisation of 28 groups of farmers, and at its end, 17 of them had converted themselves into production cooperatives. The groups contained a good percentage of young people and women. Each group provided a field of about one hectare as a demonstration plot. Local extension officers, trained by expatriate technicians, demonstrated a variety of erosion-control techniques to the farmers. These included terracing, contour bunds, mulching, crop rotation, minimum tillage, cover cropping, etc. The officers also provided small incentives (for instance selected seed varieties, fertilisers and pesticides) to help spread the techniques in individual fields. The techniques proved useful in increasing production and maintaining soil fertility (as demonstrated by run-off plots). Some food processing technologies (cassava grating machines, maize shellers, palm kernel breakers) were also introduced. The crops used in the project were cassava, yams, maize, cowpeas and melons. The crop rotations and the soil conversion techniques promoted by the project diminished soil losses, improved soil structure, and increased water retention capacity, the pH content of organic material in the soil. On average, the yields obtained in the demonstration plots and in the fields of the private farmers who adopted the techniques were three times larger than those obtained using traditional methods. Eight hundred farmers participated actively in the activities and, at the end of the project, 2,000 more applications had to be left unanswered.

Source: based on Borrini[7].

Box 7.4

Reaching Community Groups

The Environment Liaison Centre International (ELCI), which facilitates collaboration between the UN and some 6,000 NGOs, has initiated a Local Initiative Support Fund designed to provide direct links with community groups and to strengthen them in their efforts towards securing sustainable livelihoods. ELCI has realised that answers to environmentally sustainable livelihoods and development lie as much with grassroots people as with other actors. Yet, these groups are often left unassisted because of their isolation and, in the financial context in particular, outside of what is called the 'donor culture'. They cannot write proposals either because they are illiterate or the formats prove too complicated for them. On the other hand, donors who may wish to assist such groups find it inefficient and cumbersome to deal with many small requests. ELCI took the responsibility on behalf of these important members of its constituency.

A workshop attended by a number of NGOs and local people discussed the Fund and suggested the best way of operationalising it was to consider providing grants to initiatives if they : make a clearly defined attempt to incorporate environmental considerations, in order to produce sustainable benefits; allow the development of experience useful to others and contain elements that could be replicated by groups and NGOs elsewhere; involve women in planning and implementation, and pay attention to the impact on women of the activities to be undertaken; use (or attempt to use) indigenous knowledge or introduce new technologies to local communities in a way that is sensitive to local culture and controlled by the local community; and are aimed at or initiated by disadvantaged groups (especially women and youth).

The NGOs through whom operations are to be carried out on behalf of ELCI have to be based in the countries where communities will be supported; and build on local knowledge and resources.

Each NGO receives an agreed amount of between $10,000 and $20,000 which is distributed as grants to communities, the largest grant not exceeding $3000; the communities, in turn, inform ELCI of the use to which the funds have been put, ELCI being accountable to the donors. So far eleven intermediaries from Africa, Asia/Pacific and Latin America are each reaching 10-15 communities.

Source: based on material from Muntemba[8].

Box 7.5

Institutional Development for Environmental Action

The importance of technical assistance at this time of environmental stress cannot be overstated. There is a world shortage of expertise in environmental problem-solving in developing countries. Many developed countries have considerable skills in finding solutions to industrial and urban pollution; or using high-technology systems for baseline data and monitoring. Not only are many of these problems irrelevant to developing countries (depending as they do on natural resource exploitation, and agrarian systems), but there is both a lack of funds to pay for high-technology and a shortage of skilled manpower to execute such systems. The immediate solution is to use alternative techniques for baseline studies, EIA, environmental management and pollution control. The long-term objective must be the development of training systems suitable for the countries concerned.

In this area, the exchange of information becomes extremely important. The Commonwealth has taken an initiative in this respect, and this now needs to be extended and refined. The creation of the Commonwealth Consultative Group on Technology Management (CCGTM) as a result of a decision at the Commonwealth Heads of Government meeting in Kuala Lumpur (1989), provides a system by which appropriate technical assistance can be provided between Commonwealth members. CCGTM operates a Commonwealth network comprising senior managers and scientists who are prepared to give part of their time to share their experience with other Commonwealth members. In the environmental field this assistance comes under the general programme on Institutional Development for Environmental Action (IDEA).

The IDEA Programme, which is funded by the UK Overseas Development Administration, consists of five components: management and action projects, research methodology, networking and information services, environmental advisory services, and training. It emphasises an integrated network approach in dealing with environmental problems through concerted action in each of these areas. Activities under IDEA currently include projects in watershed management (in Ghana, Zambia and Zimbabwe); waste management (Malaysia and Nigeria); and natural resources management (Guyana and

Mauritius). Core project teams have been set up, led by experts from countries undertaking the projects. Through technical workshops and information-sharing these experts act as a catalyst for an expanding network of environmental expertise. Project teams are backed up by a small, but geographically broad-based and inter-disciplinary, support team. IDEA projects emphasise a 'hands-on', practical approach to environmental management. In addition, networking provides a system of communication between individuals without organising them into an inflexible hierarchical structure; it also enables a variety of perspectives and a diversity of expertise to be brought to bear on a particular problem.

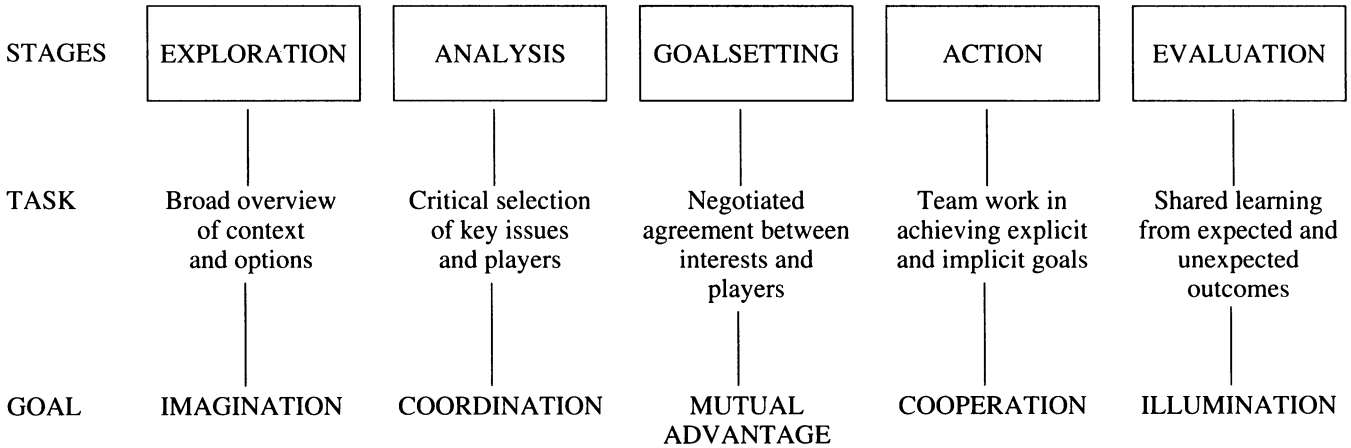
Although many developing countries face environmental problems of enormous magnitude, the IDEA teams have found little practical value in beginning on a grand scale in those countries where management capability is limited. IDEA projects therefore initiate action at the managerial/scientific level, gradually building up management capability and confidence. They are neither 'top-down' nor 'bottom-up', but combine both approaches in ways that are relevant to a country's and a project team's task. The major areas of integration addressed in the projects are between : all levels of government; public and private sectors; government and the university/scientific community; and the policy-making level and the community level, particularly small scale, 'backyard' businesses and pastoralists, for example. IDEA projects also offer the possibility of involving women's groups and other community-based NGOs in actions to address local environmental problems. As well as overcoming the specific problem addressed, projects are also intended to serve as models for use elsewhere.

Operating within the wider CCGTM network, the IDEA network has the potential to assist member countries, on request, in several ways, especially in the areas of environmental information systems, improved techniques for environmental monitoring and assessment, and the acquisition and application of clean technologies. There is much to be said for using informal processes to prepare the ground for relatively novel approaches, before they are enshrined in formal structures, which may prove difficult to adapt.

Source: based on material from CCGTM[9].

Figure 7.1

Networking in Environmental Management: Stages and Tasks



Source: Brown, et al.[10]

7.23 *Primary Environment Care* is an environmental management strategy through which local communities, with or without external support, organise themselves and strengthen, enrich and apply their own means and capacities. Projects in Nigeria, Sri Lanka and northern Italy have followed the steps of environmental management in Figure 7.1. These have enabled communities to develop a capacity to:

- organise and combine into an environmental team;
- influence development priorities, in partnership with national authorities and funding agencies;
- integrate expertise, local knowledge and local environmental values; and
- gain access to resources, including their own natural resources, financial resources and environmentally sound technologies.

Projects have included agro-forestry, health, urban development, disaster prevention, and community water and sanitation projects. The skills required for successful projects include negotiation with agencies and authorities; mediation between conflicting interests and groups; and monitoring and evaluating projects by both communities and agencies. Examples of networking in health services, at the sub-regional level in the Caribbean and in city services among urban communities are given in Boxes 7.6 below and 7.7 overleaf.

Box 7.6

Sub-Regional Institutional Arrangements in the Caribbean Community (CARICOM)

In recognition of the similarities of environmental problems facing CARICOM and its neighbouring States, the Caribbean Community established the Caribbean Environmental Health Institute for the purpose of providing technical and advisory services to member states in all areas of environmental monitoring, research and management.

In order to fulfil effectively and optimally its mandate, the Institute has set up environmental monitoring units in each of its member states. It implements its work programmes through formal focal points and working with functional nodes. In order not to duplicate existing capacity in the region, the Institute has set up a collaborative institutional network through which it accesses necessary and available expertise.

Source: based on material by Singh[11].

Box 7.7

The Healthy Cities Global Network

Healthy Cities is a global network of 300 communities worldwide, including urban and rural communities. The focus is on the integration and coordination of fragmented city services and their orientation towards the communities' goals. The network is based on cities helping each other to achieve five management goals, viz. an integrated policy including education, housing, welfare and economic aspects; an enhanced social and physical environment, publicly monitored to evaluate progress; strengthened contributions from all community groups; development of individual skills in advocacy, mediation and negotiation; and agencies and services re-oriented towards prevention, rather than remedy, of environmental degradation.

Source: Brown[12].

7.24 We recognise advantages and disadvantages in the network approach. On the positive side, it largely avoids the problems of administrative rigidity and duplication existing in some of those developed countries which initially responded to environmental problems by creating formal structures. It also enables countries to focus efforts and resources on high-priority problem areas, without having to undertake country-wide environmental assessments. On the negative side, there is a risk that coverage might be fragmentary. It will be essential for networks to be comprehensively integrated into the NSSD. For small states and other less-developed countries, it is appropriate to begin to address environmental problems through the route of network-systems. By building up expertise in relevant areas, these countries can gradually develop a more permanent, integrated institutional framework, capable of devising and implementing reactive and curative policy measures as well as anticipatory and preventative ones. For developed countries, incorporating networking into the governance of sustainable development allows for synthesising of existing fragmented and even competing agencies and interests.

Environmental accounting and impact assessment

7.25 An important task of environmental ministries or departments is to promote the reform of national accounting systems to take account of resource depletion and the full social costs resulting from environmental damage. We noted in Chapter 3 the importance of having data on national economic performance which take into account environmental costs. In most

national accounting systems, only that which has a monetary value, because it is capable of being bought and sold, tends to be recognised as having an economic value. However, prudent economic management requires that environmental capital (such as land, forests and water resources) should not be run down, to the detriment of a country's future economic growth. *We strongly urge that all national accounting systems should aim to reflect the depletion and degradation of natural resources.*

7.26 We believe it important for countries to stay abreast of developments in natural resource and social accounting (especially ongoing work by the UN Statistical Office on the UN System of National Accounts) relevant to their circumstances. We commend the United Nations, notably the UNDP, for its efforts to develop better methods of measuring human progress, and the World Bank for its work in developing an index of sustainable economic welfare. *We recommend that countries with expertise in natural resource and social accounting techniques share their knowledge and resources with others.*

7.27 We also noted in Chapter 2 the importance of attaching economic values to the environmental effects arising from individual projects. The use of environmental impact assessment (EIA) and risk analysis techniques should improve the quality of decision-making. *We recommend that environmental agencies take steps to promulgate the use of these techniques in planning and spending departments.*

7.28 Even if a central environmental department or ministry is set up, this does not derogate from the importance of having environmental awareness permeate all policy-making and spending departments. Undertaking an EIA is especially vital for those dealing with land-use, agriculture, forestry, fishing, industry, technology, energy and health, as well as those responsible for framing overall macro-economic policy. EIAs have to be incorporated in project planning at an early stage. Sustainable development requires that they should not be 'added on' when a project is nearing completion or is already in operation. In addition this is likely to render modification both difficult and costly. *We suggest that all projects should be screened to establish whether EIAs are needed, that impact assessments be carried out in all cases where this has been deemed necessary, and that they are followed up by regular monitoring.*

7.29 EIA techniques developed in industrial countries may not always be appropriate for application in developing countries. They can also be very costly. In many cases although no formal baseline data are available to carry out EIA exercises, local communities often possess the knowledge to provide an accurate assessment of the initial ecological conditions prevailing in their localities. Greater use of this knowledge should be made in underaking EIAs, not only by national authorities but also when they are being done by exter-

nal agencies. This would help to build a more accurate picture of local environmental conditions and develop a pool of expertise at the grass roots which could continue to monitor subsequent effects.

7.30 *We suggest that one mechanism for undertaking regular EIAs would be to establish on a national (or in the case of small economies, on a sub-regional) basis, multi-disciplinary teams to screen projects and to carry out assessments as they are required by governments and investors. We further suggest that any necessary environmental corrective measures be stated in the original contract as part of the investor's legal responsibility, although it is likely their continuous monitoring by government would be necessary to ensure that these were fully implemented and maintained. In this regard a useful role for the Commonwealth Secretariat could be to build up a pool of consultants, drawn from such teams, and to act as a clearing-house in responding to requests by member governments for assistance in this area.* However, it is suggested that where appropriate, whenever external consultants are provided, local counterparts are involved to ensure that local conditions are taken into account. The expertise being developed under the Secretariat's IDEA programme (outlined in Box 7.5 on page 134-135) could include undertaking EIAs, on request.

Information brokerage

7.31 There is considerable scope for information exchange among Commonwealth countries on a wide variety of issues relating to management of the environment. Some of these are referred to below, under the section on Commonwealth Cooperation. However, in addition, we believe there is considerable potential for savings among Commonwealth countries faced with similar environmental problems, through the exchange of studies and reports on environmental impact assessment and environmental projects, particularly those undertaken in the public domain or where information does not necessitate confidentially. *We recommend the setting up of a mechanism within the Secretariat—perhaps in the CCGTM—to act as a clearing house to facilitate such exchanges within the Commonwealth.*

Education, training and R&D

7.32 Lack of appropriate training is a particular problem in tackling the intersectoral, interdisciplinary problems of the environment, especially in developing countries. Technical personnel trained in one engineering or scientific discipline are frequently unable to cope with managing these multi-faceted problems. To address them, an integrated academic discipline on sustainable development is needed. This should embrace many subjects. They might include : the economic system; the ecosystem, the laws of thermodynamics, general systems theory, information science, cybernetics, ecological economics, politics of planning, management of uncertainty,

theory of democracy, history and meaning of development, and science of human behaviour. Appropriately tailored study of these subjects could form the theoretical part of an academic programme on sustainable development. Some techniques would need to be developed or refined to utilise the theoretical knowledge gained in order to solve real problems and offer opportunities for the development of policy objectives and timely interventions. These techniques would include environmental impact assessment, environmental accounting (physical and monetary approaches), and environmental cost-benefit analysis (i.e. integrating sustainability into these analyses).

7.33 To complement this type of training, considerable research is currently being undertaken in universities and elsewhere to devise methods to enable all decision-making bodies concerned with the environment and/or sustainable development to make an integrative approach which links specialist fields, professions, community interests and government agencies.

7.34 *It would be valuable if the Commonwealth Secretariat could assist developing countries in this specialised area by facilitating or promoting : the provision of short-term training courses, perhaps through the Fellowships and Training Programme; the establishment of new integrative teaching and research departments or faculties; and the setting up of new centres of research and development into environmental management which aim to demonstrate and teach integrative methods.*

International Issues

7.35 So far in this chapter, we have been concerned mainly with institutional development (and related issues) in the national context. Elsewhere in our Report we have stressed the importance of regional cooperation, especially among smaller countries and island small states, in facilitating coastal zone management, river basin and sea management, and research and development to introduce environmentally sound technologies. In this context, regional integration movements like those in the Commonwealth Caribbean could be helpful in tackling some of these problems.

7.36 UNCED provides a great opportunity to review global institutions in the light of the increased salience that must be given to the environment and the need for integration between environment and development issues. This, of course, will be vital to the implementation of Agenda 21 which UNCED is expected to adopt. Since 'substance should determine form', we do not propose to speculate on the details, but confine ourselves to noting the need for some important general changes.

7.37 Environment and development issues must be merged, both at the deliberative and at the operational level. We recognise therefore the strong need for an appropriate deliberative forum for regular discussion of these

issues, i.e. of sustainable development, in an integrated way and at a high level in the UN system.

7.38 Increased coordination is also required between international institutions responsible for the environment and for development. These include not only institutions like UNEP and UNDP which are directly under the UN, but also the financial institutions such as the World Bank and Regional Development Banks. In some cases rationalisation is also required within the UN system and between it and other international organisations. *We believe all governments should support the goal of strengthening the mandate and capacity of the United Nations system to integrate environment and development issues and activities. UNEP has achieved major advances within its limited remit and resources. Its activities should be strengthened, adequately resourced (especially through increased funding for its Environment Fund) and more closely integrated with development.*

7.39 We also note that many important international agreements on the environment, under which programmes and activities are now carried out, have inadequate provisions for enforcement and implementation. They include the Montreal Protocol on Substances that Deplete the Ozone Layer (1987), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES, 1973), the Convention on Wetlands of International Importance, especially as Waterfowl Habitat (Ramsar, 1971), and the International Convention for the Regulation of Whaling (1946). *We urge governments to fulfil their agreed commitments and support efforts to strengthen existing international agreements and, where necessary, to do so in ways which secure wider acceptance of them.*

7.40 *In any event, governments should extend their full support for international efforts to ensure that effective institutional arrangements will be secured at a global level for the implementation of decisions agreed at UNCED.*

Financial Requirements

7.41 It is clear that in the past, in both developed and developing countries, action on development was in many cases not taken on a sustainable basis. All countries need to move to a sustainable development path. For the developed countries and some developing countries, given the political will, increasing awareness of environmental dangers, and possibilities for improved technologies, the capacity exists to put development on an environmentally sound basis. But many developing countries require increased financial inflows and greater effectiveness in aid utilisation to enable them to cope with their environmental problems.

7.42 Increased international provision is being made in some areas: $200

million (for an initial period of three years starting from 1991) has become available under the Interim Multilateral Fund for the Implementation of the Montreal Protocol to assist the adoption of CFC substitutes; $1.2-$1.5 billion in concessional financing has been made available under the Global Environment Facility (GEF) to assist in the resolution of global problems, e.g. global warming, deforestation and the loss of biodiversity; and greater attention is being given to sustainable development in the financial flows from the World Bank, Regional Development Banks and bilateral donor agencies. Yet compared with needs, these funds are comparatively small. *They should be strengthened.* Additional resources will also be required to support the conventions on climate change and on biodiversity, which are currently being negotiated.

7.43 For many developing countries the necessity for increased financial inflows is urgent, not only to tackle a backlog of massive domestic problems such as soil erosion, deforestation, water pollution and desertification, but also to enable these countries to contribute to alleviating global problems such as ozone depletion, global warming and marine pollution. For countries threatened with immediate survival problems, action for sustainable development may be impossible without incentives through increased provision of external resources.

7.44 The reality, however, is that aid as a proportion of the GNP of donor countries has on average been declining. Unless these and other resource transfers are increased significantly, there is a danger of environmental action being forced upon developing countries through the increasing adoption of unacceptable environmental conditionality. This would be contrary to the cooperation required between developed and developing countries in recognition of the increased awareness of interdependence, especially in relation to the need for sustainable development on a global basis. *We recommend that the opportunity current circumstances provide for focusing on the environment be taken to advance the cause of sustainable development. This will require a large increase in resource provision. Reduced military spending in both developed and developing countries may be one way of achieving it.*

7.45 *We believe that net transfers of resources to developing countries must again become positive if sustainable development is to be attained. This requires greater effort to reduce the burden of indebtedness. In this connection, we support early international adoption of the Trinidad and Tobago terms proposed by Britain and adopted at the Commonwealth Finance Ministers Meeting in 1990 in respect of the low-income debt-distressed countries. We recommend increasing use of debt-for-nature swaps. This has the advantages of both reducing indebtedness and contributing to environmental conservation.*

7.46 But international assistance with too great an emphasis on environ-

mental conservation can be at the expense of sustainable development if overall aid is not increased. Environmental conservation now requires a reconsideration of the quantum of aid, with a view to all donor countries reaching internationally agreed targets as soon as possible. The private sector must also be encouraged to contribute more, and this may be achieved through a mixture of incentives and regulatory action, with greater attention to environmentally benign technologies in R & D.

7.47 We also feel that perceptions of aid should change. For instance, in evaluating projects, donors should take into account their implications for human development and for community support systems, which in some societies are the principal responsibilities of women. Furthermore, development assistance programmes should take into account local realities and give consideration to indigenous solutions where appropriate.

Facilitating Technology Transfer

7.48 From a policy standpoint, questions of environmental conservation and sustainable development add to the complexity of technology transfer. There is need to reconcile the requirements for technologies which would maintain or enhance a country's international competitiveness with those which are environmentally benign. Such matters would have to be resolved on a country-specific basis. Sufficient data and expertise are required to make these decisions on an informed basis. Efforts should be made to reconcile these objectives in arranging technology transfers for all domestic and externally supported projects. Two aspects of technology transfer are specially worthy of consideration.

7.49 There are a number of advanced technologies (many of them very costly)—including electronics, biotechnology, and new materials—which are environment-friendly because of their low material-input and energy requirements, or their value in countering environmental damage. The use of genetically-engineered bacteria to treat waste and oil spillage is a case in point. In addition there are also relatively simple and less costly technologies (e.g. solar powered crop driers, biogas and more efficient wood-burning stoves). It is important to enhance the indigenous capability of developing countries to make informed decisions when choosing from among the environment-friendly technologies (especially foreign ones) on offer, and to absorb and apply them—in some cases after adaptation—effectively. *We recommend that donor governments should strengthen their assistance to developing countries in these areas. It would be particularly useful if they were to promote the dissemination of information on low-cost and low- or non-polluting technologies. Given the dominant role of the private sector in technology development, incentives need to be given to encourage technology transfers to those operating in developing countries.*

7.50 The second aspect concerns the need to facilitate developing countries' access to the more expensive technologies and related 'know-how' on terms which are affordable. Many developing countries take the view that they should have access to such technologies on a preferential, non-commercial basis and that appropriate bilateral and multilateral arrangements should be established for this purpose. This raises difficulties where technologies are not owned by governments. Many industrial countries believe that transfers should be on commercial terms. We recognise that reconciling conflicting views on this issue will be crucial to facilitating a successful outcome at the UNCED.

7.51 A variety of innovative measures have been put forward to facilitate technology transfer. They include: the transfer of intellectual property rights of environmentally sound technologies (ESTs) to an international organisation which would allow access to developing countries on favourable terms for local production purposes; the creation of mechanisms for transferring ESTs which are in the public domain, e.g. in waste management and public transport (which should not be as difficult as those in the private domain); the provision of fiscal incentives to the private sector to facilitate the transfer of relevant environmental technologies to developing countries; and, possibly, the use of a proportion of carbon taxes levied in developed countries for subsidising the cost of transferring ESTs to developing countries.

7.52 Finally, we recognise that such innovative means for technology transfer may have high costs. This brings us back to the wider, and equally difficult, question of mobilising substantial additional financial resources to assist sustainable development in developing countries. We have already referred to this but have no hesitation in repeating it as it is, in our view, of critical importance to the future of the global environment.

Commonwealth Cooperation

7.53 In many of the areas discussed above, in addition to the potential of the IDEA network and the wider CCGTM network which could be further developed, there are other avenues for strengthening multilateral and bilateral cooperation among Commonwealth countries. *These should be explored. They include promoting, through workshops, seminars and study tours, exchanges of information and experience and training, especially on a South-South basis, on environmental management and planning in similar and different conditions. Specific areas which might be addressed include environmental evaluation and impact assessment; environmental monitoring and forecasting; natural resources accounting; and development and use of environmentally safe technologies.* These exchanges could involve policy makers, technical experts, and NGOs including women's and other community organisations operating at the grass roots. We welcome the fact that the Langkawi Scholarships Programme, funded by Canada and administered by

the CFTC, is supporting training-oriented programmes in environmental management.

7.54 *In addition, action should be taken to strengthen existing networks, or create new ones, for pooling and exchanging information between institutions in Commonwealth countries.* In this chapter we have already referred to information brokerage as a component of managing National Strategies for Sustainable Development, and in Chapter 5 we noted that international pooling of information is especially vital for small states, particularly in respect of planning strategies to adapt to sea-level rise. We note that the Commonwealth Secretariat and the Commonwealth Science Council are already active in creating such networks in different areas. For instance, the Commonwealth Science Council is facilitating information exchanges and coordination in the management and disposal of hazardous wastes through a network of six regional centres. The Secretariat has undertaken various studies on the environment[13] and related matters. For instance, its Economic Affairs Division has analysed the economic impact of natural disasters and the policy options for dealing with them[14].

7.55 Further action could include strengthening the existing capacity to provide technical assistance for environmental projects. We are aware that CFTC is becoming active in this field, particularly in terms of environmental assessment and the provision of experts in a wide range of related areas, including marine pollution, forest conservation and wildlife preservation. *We support the findings of the report commissioned on strengthening the CFTC's capacity to respond to requests of an environmental nature, that it could usefully develop its capacity to provide 'niche' services, e.g. assistance to small states or the development of environmental guidelines for small-scale industries, which could derive particular benefit from its ability to respond quickly and provide value-for-money.*

7.56 'Twinning' of institutions is a device that is growing in importance and is highly relevant to management of the environment. It offers a flexible and long-term partnership for the exchange of expertise and experience. In Chapter 3 we noted the usefulness of twinning between power and energy utilities to promote energy efficiency as one example among many. *We recommend that the Secretariat fosters arrangements to twin institutions which have environmental responsibilities and expertise. Exchanges should be arranged both among developing countries and between them and developed countries.*

7.57 We cannot over-emphasise the critical need (cutting across all environmental sectors) in many Commonwealth and other developing countries for adequate professional, scientific, technological and institutional capabilities to tackle environmental problems. These needs are especially acute in small states, which have difficulties in attracting and keeping specialised

Box 7.8

Technology Transfer

A recent study of Technology Transfer Opportunities for Reducing Greenhouse Gas Emissions, prepared for the Australian Department of Arts, Sport, Environment, Tourism and Territories, has identified a wide range of available technologies which can play a role in reducing greenhouse gas emissions.

The technologies can be divided into two broad categories, energy and non-energy related. The energy-related technologies fall into three groups:

- technologies for the more efficient extraction and transformation of fossil fuels;

- technologies for the supply of energy from non-fossil sources; and

- technologies for more efficient energy use.

A fourth group not generally used by developed countries but with special relevance to developing countries comprise technologies for the supply and use of cooking and heating energy in low-income households.

On a wider scale it is evident that several environmentally sound technologies, including those in the Australian study, which are available in many developed countries are not easily accessible to developing countries. To make them so would require international cooperation to ensure that environmentally sound technologies will be accessible to developing countries expeditiously and on a fair and favourable basis.

It is in this area of international cooperation that the Commonwealth Secretariat can play a vital role, through instituting mechanisms to:

- *identify opportunities for technology transfer through matching the source of technology generation within member countries with the locality for its application; and*

- *act as a broker between the interested parties to ensure the transfer of technology on equitable and affordable terms.*

Source: based on material from COFFEY and Trotz[15].

skills, and in financing research and development. Alleviating these constraints, which impinge on a country's capacity to participate in international environmental cooperation and to integrate environmental considerations into development policies and practices, should be an important priority in Commonwealth functional cooperation.

7.58 We have already emphasised the importance of technology transfer. *We believe that Commonwealth donor governments (and the industrially more advanced developing member countries) should consider establishing novel means for transferring environmentally-sound technologies to those developing countries with the greatest needs. These means might include using fiscal incentives to encourage private industries to make transfers, and/or governments, acting individually or in concert, subsidising the costs to developing countries of importing such technologies, perhaps by apportioning part of their own environmental tax revenues (e.g. from carbon taxes) for this purpose, where these exist or are contemplated.* As one example, we set out in Box 7.8 on page 147 proposals concerning Commonwealth action to assist in the transfer of technologies to reduce 'greenhouse' gas emissions in Commonwealth developing countries).

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