Chapter VII

INSTITUTIONS AND SUSTAINABLE DEVELOPMENT

As the production base of the economy changes, institutional factors will be what determines the degree of equity and sustainability of development. Thus, in order to achieve environmentally sustainable development, the institutional framework will have to be adjusted.

1. The nature of institutional capital

Institutional capital is playing an increasingly crucial role in determining the sustainability of development. The term encompasses all those norms and relationships (i.e., decision-making systems) which make it possible to expedite and consolidate changes in production patterns while promoting greater social equity. In building a link between institutional and natural capital, consideration should be given to the following elements: the system of incentives, the organization of development, the management of the economy, the role of the State and of the private sector, and community participation.

The system of incentives includes instruments which have an effect in the market as well as those whose influence is felt outside the market. The characteristics of economic and social incentives were discussed in chapter III, which focused on market-based policies such as taxes, subsidies and prices. In the section on environmental policy, examples were given of extra-market incentives, such as property rights, production quotas and legislation. The present chapter will deal with the subject of environmental legislation, and reference will be made to some of the features unique to incentives which operate outside the market setting.

The organization of development influences the level of sustainability from two different angles: the capacity for policy-making and the capacity for policy implementation. An essential point which should be stressed at the very outset is that the spatial distribution of resources does not conform to geopolitical boundaries, and a special organizational scheme is therefore required in order to address resource-related issues. A case in point is that of river basins, whose management requires the involvement of a number of different public and private organizations. During the 1960s, and even earlier in some isolated cases, government agencies for the management of river basins began to be created in response to the demand that their development be carried out on an organized basis. The existence of these agencies has permitted co-ordinated action to be taken by the various ministries concerned (e.g., of public works, agriculture, etc.).

One of the challenges which the region has before it is to expand the traditional spheres of action of development-related institutions, since a sectoral division of economic activity is a very ill-suited structure for dealing with ecosystems. The persistence of outmoded organizations militates against the preservation of a nation's heritage and greatly reduces the economic efficiency of physical and financial capital.

The region does not yet have the unified approach and organizational stability needed for the execution of regional development projects or programmes. Indeed, the usual procedure is quite the reverse: hierarchical levels and structures are created outside the framework of existing mechanisms which tend to disappear soon after the flow of financing has ended. This course of action reveals a faulty understanding of the nature of institutions, and because of this misconception the tendency is to make the mistake of creating new organizations rather than strengthening existing national structures (particularly at the local level).

These new organizations disrupt the existing usage pattern of different forms of capital, thereby creating an unstable situation. If the mix of different forms of capital entailed by the new organization differs substantially from the pre-existing mix, then the new organization will survive only as long as the supply of resources used to create it remains available. If a country's capital portfolio is compared with the capital portfolio of these new organizations, it will be seen that these artificial structures function only if, for example, their supplies of human capital (consultants) and financial capital (loans) are permanently available. If either one of these forms of capital is alien to a country's overall economic projects, these organizations will disappear.

The improper *management* of economic and social activity –at the level of the economy as a whole, a sector or a specific natural resource– has begun to wreak havoc in some areas of the region.

The management of environmental problems is particularly complex when it calls for a joint effort on the part of a number of different institutions which are not accustomed to working within an interdisciplinary or inter-agency setting. For example, river basin management requires the efforts, on a co-ordinated and flexible basis, of various organizations in order to execute projects dealing with infrastructure works, farming, animal husbandry, vegetation and forests, waste management and pollution control, water and land management; and the control of silting. Each of these activities is usually carried out by a different organization.

The many different uses made of natural resources give rise to a variety of interactions within a single area whose boundaries are not clearly defined, and which cannot be drawn so as to conform to geopolitical boundaries. Therefore, in order to deal with such issues a special type of organization is needed, as in the above-mentioned case of river basins.

Many of the forms of interaction which, in theory, would appear to be conflictive are not necessarily so in practice. When such incompatibilities do arise, however, they are often the result of faulty planning or shortcomings as regards the formulation of criteria of sustainability.

The main types of incompatibility or potential conflicts which arise in connection with resource use include competition for space as such and the environmental degradation that results when adjacent activities have a detrimental effect on one another.

Interference between activities located in the same area may also spread to others, thereby giving rise to instances in which ecosystems come under the attack of distant activities as well. In addition, the interaction among different uses may change, since the use made of resources may vary over time. Yet another factor is that the use being made of a resource at the present time (or the degradation or destruction of a resource as a consequence of the use made of another) may preclude possible future uses. This complex sequence demands the establishment of institutional arrangements capable of coping with these variables.

Cases in which intra-governmental responsibilities pertaining to natural resource management and environmental protection are inadequately defined have arisen time and time again in the region. Jurisdictions almost invariably overlap, since most government units are organized on a functional/sectoral basis and horizontal inter-agency links are a rarity.

When an effort is made to plan and manage the development of natural resources in a way which will be conducive to sustainability, the various ecosystems should be regarded as a complex but integral whole while bearing in mind their limitations and those of their spatial context (see box VII-1).

Box VII-1
THE ENVIRONMENTAL SANITATION TECHNOLOGIES COMPANY (CETESB)

The Environmental Sanitation Technologies Company (CETESB) is a mixed public-private enterprise carrying out functions delegated by the government of the state of São Paulo for pollution control and environmental conservation. The government of the state of São Paulo owns 99.8% of the shares; the management and the members of the Board of Directors own the rest. The Company operates independently in all legal and financial matters and, as regards its substantive operations, is linked to the Department of the Environment of the state of São Paulo. It is empowered to grant environmental licenses for urban development, industrial projects and automobile engines. It is also responsible for monitoring environmental pollution in the area of Cubatão, where its performance has been recognized as successful.

CETESB can be regarded as an *avant garde* organization in the environmental field, not only in the state of São Paulo but in the entire country, since it provides technical co-operation and assistance to various national institutions, including the Brazilian Environment Institute (IBAMA).

Following a recent reorganization exercise, the research work of CETESB has now been decentralized and is conducted in units scattered among various sectors. Although CETESB has fewer resources than in the past, it has continued to perform a variety of tasks, mainly in the fields referred to below.

In the field of water quality, CETESB carried out an important study for the development of large deep-water deposits discovered eight years earlier during oil prospecting in the western part of the state of São Paulo. These waters have a very high level of fluorine and were treated through an activated alumina process. The study was conducted in association with Aluminio Nordeste S.A. (an ALCOA subsidiary), which also financed the construction of the pilot plant. The process has been duly registered and is now being incorporated into equipment manufactured in the United States.

With regard to reforestation, CETESB research made it possible to introduce a new technique for producing seeds compacted in pellets, the use of which resulted in a considerable rise in the yield from the area sown from aircraft and helicopters, which finally reached an average of two trees per square metre.

With regard to liquid effluents, most of the studies were aimed at finding ways of adapting exogenous techniques to conditions in Brazil. The technological advances made in this regard were applied to the production of sugar and alcohol, cellulose and paper, citric fruit juices, instant coffee, chocolates, and other products.

The main instruments and processes developed in this field included the anaerobic filter, the upflow anaerobic digestor, and a system used in Metropolitan São Paulo in which the activated sludge process was adopted in order to obtain optional parameters and remove certain nutrients, such as nitrogen and phosphorous.

In connection with solid effluvia, CETESB research resulted in some entirely new methods, including the following:

- Successful use of a by-product of the production of sugar cane alcohol as a fertilizer.
- Dissemination of a process which makes it possible to treat residue from petroleum refining by applying a special technique known as "land-farming".
- Special processes for eliminating sludge emanating from galvanoplastics industries, for adjusting the pH balance in certain chemical and metallurgical processes, and for doing away with toxic heavy metals and hospital waste.
- Treatment of urban and industrial waste through a procedure, selected from among various alternatives, in which upflow aerobic digestors are used in combination with activated sludge.

In the agroindustrial sector, a method of selective collection and recycling, which was awarded a prize by the Government of Japan, was designed and put into practice. Important advances were also achieved in the cultivation of earthworms for the production of humus and of algae for feeding microcrustaceans and ornamental fish.

In another kind of initiative, CETESB worked with the National Industrial Property Institute (INPI) in putting together a full inventory of technological inventions related to the environment. The company also publishes a periodic report which lists all new patents and requests for patents relating to environmental sanitation registered throughout the world.

The Cubatão project

A noteworthy project which CETESB has been implementing for a number of years is aimed at restoring the environment of the industrial zone of the Municipality of Cubatão. This operation, which receives financing from the World Bank, and is an example of a successful exercise and also provides a good illustration of how costly it can be not to undertake timely, preventive action in the planning and installation phases of the construction of an industrial complex in which pollution is a risk.

The Cubatão industrial park, which covers 100 square kilometres, is located in a region where unfavourable climatic conditions, from an environmental standpoint, prevail. The park was located in this Municipality largely because a Petróleo Brasileiro (PETROBRAS) refinery was already operating in the same area. In 1985 that area

generated 3% of Brazil's gross domestic product while at the same time releasing nearly 1 000 tons of pollutants daily, 25% of them in their solid state.

In 1984, a five-year programme for controlling environmental pollution went into effect under CETESB management. The programme's resources, provided by the World Bank, were received by the government of São Paulo, and transferred through the pollution control programme (PROCOP) to the industries located in the industrial park. For their part, those industries have together contributed close to US$400 million to the execution of the project.

The success of the project is evident. Since 1986 no emergency situation due to air pollution has arisen in the Municipality, and states of alert declined steadily until 1989, when none were declared.

In complete fulfilment of the targets set, air and water pollution have been reduced by almost 90%, and soil pollution has disappeared altogether. At the same time, 286 sources of pollution, representing 75% of the total number of such sources are under systematic observation.

A hillside stabilization project was also implemented to shore up the slopes at Serra do Mar, which had been badly damaged by erosion resulting from deterioration of the forest cover. By sowing a total of 3 billion seeds, from the air, it was possible to cover 60 square kilometres of slopes with trees.

The United Nations Environment Programme (UNEP) now believes that the Cubatão experience should be repeated in other regions of the world affected by similar problems.

Source: ECLAC, "Tecnología, competitividad y sustentabilidad" (LC/L.608). Santiago, Chile, January 1991. (Document prepared by the Joint ECLAC/UNIDO Industry and Technology Division.)

Institutional mechanisms are unquestionably the primary tool for ensuring the success of the above approach, and the interrelationships which exist in terms of institutional areas of responsibility therefore play a vital role in efficient environmental management. Thus, an effort to seek out co-ordination mechanisms which do not involve the creation of additional institutions or an over-concentration of administrative power and which are flexible, versatile, and do not create bureaucratic stumbling blocks appears to offer a means of ensuring that the State and other organizations will truly place themselves at the service of the quest to change the region's production patterns while promoting social equity and environmental sustainability (see box VII-2).

The roles of the public and private sectors in the accomplishment of development tasks have been the subject of an ongoing debate in the region and have been heavily influenced by the countries' political structures, processes of democratization and prevailing development goals. Regardless of the outcome of this debate, however, it is important to realize that public and environmental policies will not achieve their objectives unless the State undergoes a transformation and the private sector improves its management capacity.

The new approaches called for in order to change the region's production patterns with social equity and environmental sustainability cannot exclude either the public or the private sector.[1] The active participation of the private sector is a crucial factor in controlling and managing the environment. By the same token, strategies for achieving sustainable development cannot be implemented by an atrophied public sector. Many externalities which have already been discussed in chapter III attest to the need for an effective and lasting form of State intervention The countries' institutional structures therefore need to be such as to reinforce their democracies and their political and social coalitions within a context of stability, and a national and regional consensus is essential in order to make this possible.

Organized, timely community participation significantly increases the economic effectiveness of physical and financial capital. In order to achieve an environmentally sustainable form of development, the people and the communities which are the subject of that development must be incorporated into the

Box VII-2
INSTITUTIONAL REFORMS IN COLOMBIA

The environmental profile of Colombia prepared between 1988 and 1990 assesses the ecology of the country and sets forth a series of proposals relating, in particular, to institutional aspects of the situation. In addition to fulfilling its original objectives, this initiative has had a number of spinoff effects which reflect the increasing attention being devoted to environmental issues in Colombia and the importance which is consequently accorded to institutional reforms in this field. Specifically, three activities which had not originally been programmed were conducted in the course of the preparation of this national environmental profile: a) the drafting of a bill of law concerning the reorganization of environmental management activities, b) the preparation of a regional environmental profile which was modelled on the national profile; and c) the creation of an environmental unit within one of the country's regional planning agencies.

a) *Draft legislation concerning the reorganization of environmental management activities*

Following extensive discussions which focused on the advantages and disadvantages associated with the concentration of decision-making and decentralization, during the second half of 1990 a decision was reached to submit a bill of law focusing on the local and regional management of environmental matters. The key provisions of the bill call for: i) the continuation of the system of shared responsibility for environmental management, coupled with the differentiation of various levels of responsibility and action and the reinforcement of co-ordination among them; and ii) the creation of a national environmental system in which the Administrative Department of Natural Resources and the Environment (DANAR) would be given a leading role and regional institutions would be placed in charge of local co-ordination.

b) *Regional environmental profile*

Each of Colombia's five planning regions has a Regional Council on Economic and Social Planning (CORPES) which formulates regional plans, prepares investment programmes and co-ordinates and supervises the activities of various sectoral agencies. The preparation of the national environmental profile prompted the CORPES for the Atlantic Coast, which serves the Caribbean region of Colombia, to ask that a regional environmental profile be prepared in order to fulfil a number of objectives: the compilation of more detailed information on the region; the preparation of manuals for the formulation of environmental management plans concerning matters relating to conservation, prevention, reclamation, promotion and risk; and the provision of common guidelines for use by all the regional institutions having responsibilities in the area of natural or cultural resources.

c) *Creation of a regional environmental unit*

The environmental management proposal contained in the national profile made it clear that the CORPES were the best-qualified institutions for co-ordinating and supervising environmental action at the regional level for the following reasons: i) their technical committees include representatives of most of the organizations involved in the management of natural resources and the environment; and ii) because they are attached to the National Planning Department, the CORPES have a certain degree of decision-making power as regards the allocation of regional budgetary resources. With a view to ensuring the preparation of the regional profile and the implementation of the proposals made in regard to environmental management, an environmental unit was set up within the CORPES for the Atlantic Coast. The creation of similar units in other CORPES is planned.

Financial constraints

It was regarded as highly important that the preparation of the national environmental profile should be the result of a joint effort on the part of the various public and private organizations concerned with environmental matters. Financial constraints limited the ability of these institutions to supply staff to work on the project, however, and the profile therefore had to be prepared primarily by personnel financed through contributions from international co-operation agencies.

decision-making process. Furthermore, the various forms of community participation are vital in order to prevent the plunder of natural resources, particularly in cases where public or private property rights are not clearly delineated and rationally exercised.

In the short term, the countries of the region need to lay the institutional foundations for a joint form of management by the private sector, the State and the community. This is where non-governmental organizations (NGOs) have an important role to play, since they enjoy comparative advantages within the sphere of community organization and especially at the level of family-centered programmes. These NGOs, acting on the basis of agreements with the national governments, can make a significant contribution to institutional change.

Finally, reference should be made to the subject of cultural capital or heritage. Culture, as an expression of the lives and activities of the people, is not unrelated to the question of sustainable development strategies. There are many human settlements whose cultural survival hinges upon the management of natural resources. Indeed, some indigenous settlements have been subject to extremely misguided forms of interference, and the absence of suitable protective institutions encourages economic agents to despoil the very resources on which they depend.

2. Organizing for sustainable development

Since the end of the Second World War, the way in which public institutions have evolved has largely been determined by the approaches to development which have prevailed at any given time. Thus, at least four major stages can be identified in this process of organizational change. The first corresponds to the period during which it was thought that physical and financial capital were the scarcest forms of capital and natural capital the most abundant. Consequently, economic growth was equated with construction and infrastructure projects, and the civil services of the region were modified accordingly. This was the period that saw the creation of ministries of public works as well as large State construction and national service enterprises. In addition, as a logical complement of this strategy, financial institutions were founded to promote development.

The second stage is associated with the period during which development was largely viewed in terms of the need to overcome the problem of poverty. The participation of the potential beneficiaries of development was regarded as an integral part of the process of change. During this stage there was a shift in the objectives of a number of ministries and regional and local bodies, as well as various community organizations. The most prominent programmes during this time were those concerned with integrated rural development, public services, food self-sufficiency, and other efforts to alleviate poverty. These forms of organization were complex and fragile, however, owing to the difficulty of devising effective participatory structures, and this was compounded by the sociopolitical instability of many governments.

This was succeeded by a third stage when macroeconomic management became the chief focus of attention of the development effort. As the region entered into a stage of broad-spectrum economic management involving structural and sectoral adjustment programmes, the institutional apparatus began to undergo sweeping changes: a reduction in the size of the civil service, privatizations and an increase in the relative importance of government units and levels concerned with finances and with monetary and financial policy.

The fourth stage represents a return, although within a new context, to the issues of growth and social equity, but these elements are now combined with considerations of environmental sustainability. This is the stage which is now beginning, and various countries in the region have been entering into this stage since the end of the 1980s. The challenges now being faced by the region call for organizational structures which correspond to the three objectives entailed by this conceptual framework.

The region has a wealth of past experience in this connection which should help to guide future organizational reforms. The first lesson to be drawn from these experiences concerns the need for a sufficient awareness of the importance of carrying out reforms within a framework of stability, participation and progress, overcoming the old "either-or" propositions, such as that which at one time characterized the view taken of private versus State efforts. The nature of the fulcrum for these reforms will depend upon the way in which each country resolves such questions as those of participation, association, concerted action and consensus-building for development.

The second lesson refers to the need to set in motion processes of organizational reform within a reasonable period of time. Hasty action could, as in the past, result in social costs that outweigh the expected benefits. Experience has shown that the most successful organizational reforms have been based on an awareness of the fact that strong,

effective organizations cannot be built overnight. Institutional modifications conducive to sustainable development should be a long-term goal. There are no instant recipes or formulas for organizational changes, especially when they involve changing the population's behaviour patterns.

3. Environmental administration and management

Efficient institution-building with a view to the achievement of an environmentally sustainable and socially equitable form of natural resource management entails a process involving the following steps:

Substantially increasing the pool of information needed for decision-making purposes. Today, decisions relating to natural-resource and environmental management are taken on the basis of inaccurate or insufficient information –or, at times, simply no information at all. Information as an input for development will play a pivotal role in determining the extent of the countries' bargaining power. The governments will have need of greater bargaining power as environmental restrictions –and the standards that go along with them– inexorably become an increasingly integral part of the world of international trade and development financing. Furthermore, this pool of information will become a crucial factor in enabling the countries to capitalize upon their comparative advantages *vis-à-vis* the international market.

Upgrading capabilities for assessing and executing regional development programmes. The spatial dimension of resources and of the environment makes it necessary to stress the territorial dimension of development when undertaking the institutional modifications required to improve such capabilities, which will therefore involve a redefinition of units of analysis or of geopolitical and administrative units. This means that the countries will have to increase the responsibilities of environmental and natural-resource development agencies and delegate greater powers to regional development offices and corporations.

Strengthening educational, training and research institutions. The chief aim in this regard is the provision of training for civil servants involved in environmental matters. The research effort, for its part, should become a pivotal element in the accumulation of knowledge, technological change, and the protection of the natural heritage.

4. The international and regional legal framework

An analysis of the international legal framework in respect of environmental issues and an in-depth examination of the regional and subregional situation in this respect have been set forth in other studies recently published by ECLAC.[2] For the sake of brevity, this section will confine itself to the presentation of a synoptic overview of the legal instruments which have been approved or signed, as well as those already in force which govern the relationships between development and environment at the international and regional level.

The United Nations Conference on Environment and Development will be held within the broader context of an ongoing debate in many multilateral forums concerning the restructuring of the legal framework for international economic relations. This framework includes instruments which were formulated quite some time ago but whose tenets nonetheless continue to be of concern to the international community, such as the resolutions issued by the General Assembly at its sixth special session in 1974,[3] as well as more recent ones, such as the Declaration on International Economic Co-operation, in particular the Revitalization of Economic Growth and Development of the Developing Countries, which was adopted in 1990 by the General Assembly at its eighteenth special session,[4] the declaration issued by the World Summit for Children,[5] and the International Development Strategy (IDS) for the Fourth United Nations Development Decade which was adopted by the General Assembly.[6]

All these instruments have a common denominator. They emphasize the need to promote economic and social development through international co-operation; to revitalize the economic growth and progress of the developing countries; to promote international economic co-operation for sustained growth of the world economy; to realize the basic right of all human beings to a life free from hunger, poverty, ignorance, disease and fear; and to work for fruitful results at, among other forums, the United Nations Conference on Environment and Development, to be held in 1992.

4.1 *International instruments*

Some of the instruments cited below are already in force while others have been signed but are not yet in effect; still others have as yet only been approved. It is essential that the countries of Latin America and the Caribbean should analyse the relevance of their full adherence to each of these instruments, since despite the weaknesses from which some of the texts may suffer, they are in general the product of a delicate, negotiated balance whose objectives can be realized only through the active participation of the countries of the region in the mechanisms for which they provide.

The categories into which these instruments are grouped generally correspond to those used in the provisional agenda set forth in the report of the Preparatory Committee for the United Nations Conference on Environment and Development. In each case the most important legislative sources are listed. This presentation has been prepared for the purpose of providing background information for use by the countries in forthcoming negotiations.

a) *Protection of the atmosphere: Climate change, ozone depletion, and transboundary air pollution*

The Vienna Convention for the Protection of the Ozone Layer was adopted on 22 March 1985 and entered into force on 22 September 1988. It establishes the obligation of States to co-operate by means of systematic observations in the assessment of the effects of human activities on the ozone layer; to adopt legislative or administrative measures in that respect; and to harmonize policies to control, limit, reduce or prevent activities under their jurisdiction or control which have adverse effects on the atmosphere.

The Montreal Protocol on Substances that Deplete the Ozone Layer was adopted on 16 September 1987 and entered into force on 1 January 1989. It institutes a freeze on the production of three halons (chemicals required to produce fire extinguishers) and the five most destructive chlorofluorocarbons (CFCs). It was further agreed that the consumption of CFCs would be reduced by 50% by 1998.

The Helsinki Declaration on the Protection of the Ozone Layer, which was adopted in May 1989 at the first meeting of the parties to the Vienna Convention and the Montreal Protocol, calls upon all States to accede to the Vienna Convention and the Montreal Protocol. The signatory countries also agreed to phase out the production and consumption of the CFCs designated as controlled substances in the Montreal Protocol. The targets outlined therein are to be met as soon as possible but in no case later than the year 2000.

At the Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer held towards the end of June 1990 in London, 122 countries pledged to put an end to the use and production of halons and chlorofluorocarbons (CFCs) by the year 2000, as well as setting sequential targets for their reduction: 50% by 1995 and 85% by 1997. As a parallel step, the industrialized countries created a fund of US$160 million to permit third world countries to gain access to substitutes for these propellants.

The United Nations General Assembly recently decided to consolidate the negotiations concerning climate change by establishing an intergovernmental negotiating committee, which is open to all member countries and is supported by UNEP and the World Meteorological Organization (WMO).[7] The committee is to prepare a framework convention, and related instruments, containing appropriate commitments concerning which an agreement may be reached. In drafting the convention, the committee will take into account the proposals made by States participating in the negotiations,

the work of the Intergovernmental Panel on Climate Change, and the results of various international meetings on the subject, including the Second World Climate Conference.

It is hoped that the negotiations regarding the framework convention and related instruments will be completed before the United Nations Conference on Environment and Development, to be held in June 1992, so that the convention may be opened for signature by States at that time.

The General Assembly also decided to establish a voluntary fund for the purpose of supporting developing countries, in particular the least developed among them and small island countries, in participating fully and effectively in the negotiations, and has invited Governments, regional economic integration organizations and other interested organizations to contribute generously to this fund.

Finally, as a means of reaffirming its fullest support for the consideration of this issue, the General Assembly also decided to include an item concerning the protection of global climate for present and future generations of humanity on the provisional agenda of its forty-sixth session.

b) ***Protection of the oceans and all kinds of seas, including enclosed and semi enclosed seas, and coastal areas; and the protection, rational use and development of their living resources***

The most important international instrument on this subject is the United Nations Convention on the Law of the Sea, which has not yet entered in force. It is considered to be one of the most important achievements of the United Nations since the signing of its Charter. This landmark instrument is the result of almost 10 years of negotiations which led to a balanced text that is an embodiment of international solidarity and of the interdependence of the nations of the world (see box VII-3). The Convention regulates every possible issue relating to the Law of the Sea, creates innovative institutions and sets forth economic and social concepts not usually found in instruments of this type. The Convention is especially meaningful for Latin America and the Caribbean because of the valuable contribution made by the countries of the region both in substantive terms and within the context of the corresponding negotiations. It has been signed by 156 States and has been ratified by 43 States. A total of 60 States must ratify the Convention in order for it to enter into effect.

Box VII-3
MEXICO: FEDERAL SEA ACT

Some of the major problems which hinder efforts to incorporate considerations relating to the oceans and seas into a national development strategy are the myriad areas of expertise involved in the utilization of marine resources, the erratic pattern in which jurisdiction over the relevant areas is distributed among government agencies and the difficulty of setting up appropriate mechanisms for consultation and co-ordination to avoid disputes and redundancies.

The activities of government bodies usually overlap because most State agencies are organized on a functional basis, and horizontal inter-agency links are rare.

Furthermore, since integrated management concepts have not yet come into general use, the various agencies conduct their activities as isolated undertakings, without having a grasp of the overall system of which they form a part.

The effort to avoid such failings often leads to extreme solutions, such as, for example, the creation of a "super-agency" which takes over complete responsibility for a given sectoral matter and which, in addition to demanding an extremely high level of fiscal expenditure, ultimately leads to more inefficiency and a greater lack of specialization.

Mexico, through its Federal Law of the Sea of 8 January 1986, has been able to avert these problems and to set up a coherent legislative/institutional system without resorting to the enactment of an inordinate number of legal provisions or the creation of new institutions that would place a burden on State finances.

This accomplishment was made possible by the gradual incorporation of the provisions of the United Nations Convention on the Law of the Sea into the country's legal system. Mexico gave material expression to its ratification of these provisions through the promulgation of statutes, many of which now form part of its body of constitutional law, and

through a relatively brief law known as the Federal Sea Act.

Mexico has thereby established a genuinely effective statute on the sea by modernizing and streamlining its national laws so as to improve the management of its natural resources without becoming embroiled in an arduous legislative process; it has spontaneously created effective co-ordination mechanisms and has promptly fulfilled its international obligations.

The Federal Sea Act states, for example, that the Federal Government shall apply the law of the sea through the various government units designated as competent national authorities in accordance with the powers granted to each, thereby creating an overall framework for the co-ordination of the relevant activities, whose implementation is entrusted to specific sectoral bodies.

The chapter of this act which concerns the protection and preservation of the marine environment provides that in the exercise of the nation's powers, rights, jurisdictions and prerogatives within the marine areas of Mexico, the nation shall apply the Federal Environmental Protection Act, the General Health Act and related regulations, the Federal Water Act and other statutes and regulations. The result is a comprehensive body of law governing the protection of the marine environment which optimizes the use of existing rules and regulations without resorting to additional legislation or new institutional structures.

Three States in the region have not signed the Convention. The specific obstacles which have prevented these countries from doing so do not detract from the outstanding contributions these same States made both to the shaping of many of the concepts set forth therein and to the negotiation of the instrument itself. The Convention introduces concepts and institutions which reaffirm the right of States to use their natural resources and provides mechanisms for exercising that right. Moreover, it opens up genuine opportunities for the integral development of seas adjacent to the coasts of signatory countries. Thus, the Convention introduces compelling socioeconomic concepts and definitively upholds the concept of integrated resource management as a sine qua non of environmental sustainability. Two related instruments should also be mentioned: i) the conventions concerning the protection of the marine environment adopted within the framework of the International Maritime Organization (IMO), and ii) General Assembly resolution 44/225, which was adopted on 22 December 1989, on large-scale pelagic driftnet fishing and its impacts on the living marine resources of the world's oceans and seas.

c) *Protection and management of land resources: Efforts to combat deforestation, soil loss, desertification and drought*

Many of the existing instruments in this area relate to matters which fall within the purview of the Food and Agriculture Organization of the United Nations (FAO), UNEP and, to a lesser degree, the United Nations Educational, Scientific and Cultural Organization (UNESCO). The main such instruments are the Programme of Action on Agrarian Reform and Rural Development, the Plan of Action to Combat Desertification, the Tropical Forestry Action Plan, the World Conservation Strategy, the World Soil Charter, and the UNESCO Programme on Man and the Biosphere.

d) *Conservation of biological diversity*

The instruments in this field are varied and represent an important basis for consultations since biological diversity is coming to be recognized as one of the chief tools of sustainable development. Although a detailed analysis of these documents would be beyond the scope of the present discussion, some of the main instruments in this area are: the World Charter for Nature; the portions of the World Conservation Strategy which concern the conservation of living resources for sustained development; the Convention on Wetlands of International Importance Especially as Waterfowl Habitat, which was signed at Ramsar in 1971 and the Protocol amending that convention, which was signed in Paris in 1982; the Convention concerning the Protection of the World Cultural and Natural Heritage, which was adopted in 1972 in Paris at the General Conference of UNESCO (see box VII-4); the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) of 1973; the Convention on the Conservation of Migratory Species of Wild Animals, of 1979; and the amended version of the 1946 International Convention for the Regulation of Whaling.

In pursuance of the aim of conserving biological diversity, it will be important for the countries of the region to monitor the activities of

Box VII-4
GUATEMALA: TIKAL NATIONAL PARK

Tikal National Park, which is discussed in *Our Own Agenda*, a document prepared by the Latin American and Caribbean Commission on Development and Environment, serves as another example of how international legal instruments, when suitably incorporated into a country's legal system, can support national efforts to achieve sustainable development.

Our Own Agenda cites Tikal as an example of a successful effort to establish and manage areas subject to special protective measures, a course of action whose ultimate aim is the protection of biodiversity.

Here we will consider the case of Tikal from a legal perspective, supplementing the analysis presented in the above-mentioned document with a review of the international legal instruments signed by Guatemala which directly or indirectly contribute to the preservation and sound management of the cultural and natural heritage of Tikal.

At Guatemala's request, Tikal has been placed on the World Natural and Cultural Heritage List under the terms of the Convention concerning the Protection of the World Cultural and Natural Heritage, which Guatemala signed in 1979. The country's position as a party to this international instrument has clearly been facilitated by the support for the cause of environmental protection which Guatemala had already exhibited in 1955 when it officially designated Tikal as a protected area.

By joining together the concepts of nature and culture, which had previously been regarded as separate or even opposing elements, the Convention permits a sound management of both the archeological heritage, which is the chief concern in this case, and the extremely valuable natural heritage of the area.

One of the main objectives of the Convention is to establish, by means of international contributions, a fund for the protection of the cultural and natural assets that have been placed on the World Heritage List. This fund will, *inter alia*, permit the countries concerned to secure technical assistance, provide them with access to expert assistance in pinpointing or combatting the causes of the degradation of these assets or in formulating protective measures, and contribute to the training of national specialists in conservation techniques.

The States parties undertake to incorporate the protection of these assets into comprehensive planning programmes, to establish facilities for their protection, to conduct scientific and technical studies and to adopt the necessary legal, administrative and financial measures for these purposes.

In addition, Guatemala is party to a wide range of other international instruments relating to the subject of biological diversity which also help to safeguard the heritage of Tikal. One such instrument is the Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere of 12 October 1940, whose signatories pledged to establish national parks and reserves. Another is the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) of 1973, which creates a system of protection based on import and export permits that can also be used to help safeguard the park's natural resources.

The example of Tikal illustrates how a dynamic interaction between international and national legal norms, whereby nations respond in a versatile manner to international mandates, can also be used as an effective tool for furthering the countries' efforts to achieve an environmentally sustainable management of their resources.

the special panel of experts on biodiversity convened by the United Nations Environment Programme, which has begun work on the preparation of a legal instrument on this subject.

e) *Environmentally sound management of wastes, particularly hazardous wastes, and prevention of illegal international traffic in toxic and dangerous products and wastes*

Some of the most noteworthy instruments on these subjects are the following:

General Assembly resolution 1653(XVI), entitled "Declaration on the prohibition of the use of nuclear and thermo-nuclear weapons" (1961).

Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and Under Water (1963).

Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space including the Moon and Other Celestial Bodies (1967).

Treaty on the Non-Proliferation of Nuclear Weapons (1968).

Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the

Sea-Bed and the Ocean Floor and in the Subsoil Thereof (1970).

General Assembly resolution 2936(XXVII), entitled "Non-Use of force in international relations and permanent prohibition of the use of nuclear weapons" (1972).

General Assembly resolution 3478(XXX), entitled "Conclusion of a treaty on the complete and general prohibition of nuclear weapon tests" (1975).

Convention on Early Notification of a Nuclear Accident (1986).

Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (1986).

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989).

The draft code concerning nuclear wastes approved by the International Atomic Energy Agency (IAEA) expert group, which establishes principles governing the international movement of nuclear wastes. The draft code was submitted to the General Conference of the IAEA in September 1990 in the course of negotiations playing a fundamental role in the effort to expand the coverage of the Basel Convention, which specifically excludes nuclear wastes.

4.2 *Regional instruments*

Two types of instruments are included in this category: those which refer specifically to natural resources and the environment, and general instruments which offer opportunities for promoting a better management of natural resources and environmental sustainability. Instruments in the first group include the following:

Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere (12 October 1940).

Agreement for the Establishment of a Latin American Forestry Research and Training Institute, under the sponsorship of FAO (18 November 1959).

Treaty for the Prohibition of Nuclear Weapons in Latin America (Treaty of Tlatelolco, 14 February 1967).

Convention for the Conservation and Management of the Vicuña (20 December 1979).

Treaty for Amazonian Co-operation (3 July 1978).

Recommendation concerning the formulation of an American declaration on the environment by the Organization of American States (OAS).

Instruments of a general nature include the following: the agreement concerning the institutional system for the River Plate basin; the Central American Commission on Environment and Development; the Andean Pact; the Caribbean Community (CARICOM); the Acapulco Commitment to Peace, Development and Democracy (29 November 1987) and subsequent declarations of the Group of Rio; and General Assembly resolution 41/11, "Zone of peace and co-operation of the South Atlantic" (27 October 1986).

4.3 *Some final observations*

Based on the above analysis and presentation, a number of observations may be made concerning two different aspects of the subject. Some of these observations refer exclusively to the question of internal organization or action at the regional or international level, while others specifically concern the strengthening of the region's bargaining power in world forums.

The region is aware of the need for concerted action to cope with many of the environmental conflicts which arise and for the definition of concepts relating to socially equitable and environmentally sustainable forms of integrated management. It is also felt that it will be possible to pinpoint the origin of many of the factors hindering the implementation of a sound form of natural resource management. Furthermore, the international and regional legal system assigns a pivotal role to the State, particularly as regards the task of formulating an environmental policy in keeping with the reorganization of the industrial structure and technological innovation.

Although, generally speaking, the existing conventions and agreements are appropriate in the sense that their provisions represent a suitable response to the situations they are intended to

regulate,[8] the fact they are relevant or appropriate does not necessarily mean that they can be implemented or put to use; their actual operability will depend on compliance with them, i.e., on the translation of their provisions into changes in the countries' internal legal systems and, hence, into concrete action on the part of States to fulfil the commitments they have made at the international, regional and subregional levels.

It is important to note that some international treaties, such as the United Nations Convention on the Law of the Sea, which have not yet entered into force have nonetheless had a very strong multiplier effect. Indeed, a multitude of legal provisions have been established at the national level which give expression to the principles contained in the Convention on the Law of the Sea within the internal legal systems of many countries (including some which are not parties to the Convention).

At the national level, the laws of each country need to be analysed in order to determine the extent to which they are conducive to the State's achievement of its objectives. The State should assume a more active role in the following areas:

a) The design of plans and strategies for the management and conservation of the physical environment, and the co-ordination of each of their components with other government policies;

b) The planning and co-ordination of baseline studies and inventories of environmental resources and sources of pollution, and the implementation of natural heritage accounting programmes;

c) The management, restoration and conservation of natural resources at the level of river basins, national parks and other integrated systems;

d) The adjustment of the legal framework for natural resource use and conservation in the light of technological advances and new scientific findings; and

e) The planning and construction of the infrastructure needed to monitor environmental performance, and the pursual of a national effort to internalize the commitments undertaken at the international and regional levels.

At the regional and international levels, steps need to be taken to organize and strengthen the present regulations governing environmental matters. Greater advantage should also be made of existing regional organizations. These topics are discussed further in chapter X.

In considering aspects of the subject relating specifically to the negotiations to be conducted during the preparatory stages and the 1992 conference itself, three points should be borne in mind. Firstly, the international context in which these negotiations on development and environment are to take place must be clearly defined. Clearly, the countries of the region cannot separate their endeavours in this regard from their efforts in such other forums as the General Agreement on Tariffs and Trade (GATT), the United Nations Conference on Trade and Development (UNCTAD) and the United Nations Conference on an International Code of Conduct on the Transfer of Technology. Secondly, past experiences should be exhaustively analysed in order to ensure that the forthcoming negotiations do not give rise to further disappointments. For example, the upcoming negotiations concerning an "Earth charter" call for a re-examination of the process which led up to the formulation of the 1982 World Charter for Nature. Finally, the countries of the region should seek greater co-operation with the countries of Africa and Asia within the framework of commitments made under existing instruments, such as the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, or the Vienna Convention for the Protection of the Ozone Layer and the corresponding Montreal Protocol.

Notes

[1] See ECLAC, *Changing Production Patterns with Social Equity*, *op. cit.*, pp. 149-153.

[2] See *La cuestión oceánica en América Latina frente a la Conferencia de las Naciones Unidas sobre el Medio Ambiente y el Desarrollo. Un espacio de análisis para las políticas de la región* (LC/R.911), 3 September 1990, and *Contexto jurídico internacional y regional vinculado al desarrollo, el medio ambiente y los recursos naturales* (LC/R.953), 18 December 1990.

[3] On that occasion the General Assembly adopted the Declaration and Programme of Action on the Establishment of a New International Economic Order (resolutions 3201(5-VI) and 3202 (5-VI)), whose principles were reaffirmed in resolution 3281 (XXIX), which contains the Charter of Economic Rights and Duties of States.

[4] See United Nations, *International Economic Co-operation, in particular the Revitalization of Economic Growth and Development of the Developing Countries* (A/S-18/14), 30 April 1990, especially the annex containing the corresponding declaration.

[5] See United Nations, *World Declaration on the Survival, Protection and Development of Children* and *Plan of Action for Implementing the World Declaration on the Survival, Protection and Development of Children in the 1990s*, New York, 30 September 1990.

[6] See United Nations, *Report of the Ad Hoc Committee of the Whole for the Preparation of the International Development Strategy for the Fourth United Nations Development Decade* (A/45/41), 11 October 1990.

[7] Forty-fifth session, Second Committee, agenda item 81, A/C.2/45/L.93, 11 December 1990.

[8] In respect to the relevance of these instruments, i.e., the extent to which their provisions provide suitable means of responding to social needs and of arriving at solutions for the problems they address, see *Contexto jurídico internacional...* (LC/R.953), *op. cit.*