

UNITED NATIONS

**ECONOMIC COMMISSION
FOR LATIN AMERICA
AND THE CARIBBEAN - ECLAC**



Distr.
GENERAL
LC/G.1944
18 March 1998
ENGLISH
ORIGINAL: SPANISH

**REFLECTIONS ON TERRITORIAL STRATEGIES FOR
SUSTAINABLE DEVELOPMENT***

* The present document was prepared by the Environment and Development Division of ECLAC for the Summit Conference on Sustainable Development, held at Santa Cruz, Bolivia, on 7 and 8 December 1996.

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SUMMARY

Since before the United Nations Conference on the Human Environment, held in Stockholm in 1972, the Economic Commission for Latin America and the Caribbean (ECLAC) has been providing considerable support to the countries of the region in their efforts to achieve sustainable development goals. In this respect, special mention should be made of the document entitled El desarrollo sustentable: transformación productiva, equidad y medio ambiente (Sustainable development: changing production patterns, equity and the environment), issued in 1991. With respect to the issue of water, energy and biodiversity, in particular, ECLAC has contributed numerous reports, promoted meetings and seminars, and supported training and research programmes.

ECLAC contributions in the thematic area of sustainable development take the form of proposals for integrating social, economic and environmental objectives, on the principle that it is vital that they be compatible if the goals implicit in this concept are to be achieved. The present contribution takes into account the territory where such sustainable development is to be generated.

As pointed out by Gabaldón (1994), “it is difficult to manage natural resources without paying due attention to their territorial context. Ecosystems are physical and biotic entities situated in specific geographic spaces, whose equilibrium can be disturbed by human action and/or by the action of nature itself”. As is apparent also from ECLAC reports, one of the principal attributes of natural capital is that it is situated in a specific, identifiable locality, unlike other forms of capital (human, financial and physical), which can and should dispense with such a link to locality. In spite of all the current technological advances, especially in the fields of communication and the information sciences, which attenuate the importance of place (the locus), ecosystems set inescapable physical and biotic conditions for environmental management, because of the fixed nature of their territorial setting.

This study presents proposals for improving environmental management at the territorial level, including practical suggestions for shaping strategies. Environmental management incorporates a wide range of measures affecting extensive geographic zones. It should therefore preferably be implemented through decentralized systems, in order to generate the local management capacity necessary to ensure that the measures adopted are put into practice effectively and are long-lasting. The private and public institutions that participate in this process should perform in a transparent way in order to ensure that the implementation of national policies receives the support of the entire community and that there is no conflict of responsibility with respect to the tasks assigned to the various agents in each area of management.

I. CONCEPTS AND COMMITMENTS FOR SUSTAINABLE DEVELOPMENT

Although the issue of sustainable development dominates policy debates in the countries of the region, it is still only rarely given priority by the political administrative and territorial organs at the local, regional and national levels. Moreover, in spite of the fact that the environmental concepts which determine the needs and establish territorial limits to sustainability are widely recognized in the sphere of production, there is no overwhelming evidence that they are being taken into consideration in production processes.

The lack of concrete measures to achieve sustainable development goals has three specific causes. The *first* of these is the lack of consensus on the definition of the concept described by the term “sustainable development” (see box 1), which is subject to multiple interpretations and disagreement. Thus, a first step would consist in adopting a common definition, at least at the national level. Ambiguous use of the concept is most frequent among economists and ecologists, although varying definitions are also used in other branches of science.

The *second* factor, related to the first, is the difficulty Governments encounter in obtaining the political commitment to arrive at a balance between economic, social and environmental goals. Independently of how sustainable development is conceptualized, achieving it in practice requires sweeping changes in institutional structures, in the distribution of wealth and also in the management of natural resources, which in turn require modification of the consumption patterns of the population and of styles of development in general.

As has been pointed out in various studies, the concept of sustainable development, which is accepted unequivocally on initial approach, would be much less easily accepted in the political arena if the most prosperous citizens of both developing and developed countries were to understand the lifestyle and development sacrifices that this concept implies. Even in its least drastic manifestation, the concept calls for restricting the exploitation of natural resources until such time as there is fuller awareness of how the ecosystems involved function, and for much greater investment in administering them properly. It is also necessary to change present consumption and production patterns that involve excessive exploitation of natural resources.

The *third* cause relates to management capability and the institutional structure, meaning the necessary collective agreements to carry out policies intended to promote sustainable development. It is not merely sufficient to have laws and regulations for this purpose; the effective participation of society is also necessary, in addition to a reliable organizational infrastructure. In this respect, it is essential to set up organs that have responsibility for managing ecosystems, provided that they are able to coordinate their activities with the political and administrative authorities, such as the municipalities, that are already in place.

Box 1**TOWARDS REGIONAL CONSENSUS ON THE MEANING OF SUSTAINABLE DEVELOPMENT**

The concept of sustainable development relates to *the possibility of maintaining a balance associated with a certain level of human development*. This level, always transitory and constantly evolving, should be achieved over the long term within the limits of "sustainability" of human life on Earth.

Sustainable development has the following characteristics:

- It has steps or levels;
- It has a territorial dimension;
- It is dynamic;
- Its trend is towards globalization.

It is a concept that is linked to territory and to social, environmental and economic exchanges. Its dynamics are characterized by constant change and can affect different levels or categories of human well-being.

From the point of view of management, it is the result of a

set of decisions and processes which must be carried out by generations of human beings for their own well-being in living conditions that are constantly changing and with information that is usually scarce or incomplete. In its most elemental version, it would have to reconcile - in each territory concerned - economic growth, environmental sustainability and equity, especially over the long term.

In formulating strategies, it should also be borne in mind that this is a concept that necessarily involves different categories or levels. That is to say, there are variations of sustainable development associated with different living conditions.

Consequently, every development strategy should establish the desirable level progressively to be reached. If these steps are not taken into consideration strategies may be proposed that are unrealizable or unacceptable by many peoples in their current living conditions.

Source: CEPAL, *Conceptualización, modelaje y operacionalización del desarrollo sustentable: ¿tarea factible?* (Conceptualizing, modelling and operationalizing sustainable development: a feasible task?) (LC/R.1620), Santiago, Chile, January 1996.

The democratization of the decision-making processes, particularly by adopting management methods to achieve the goals of sustainable development through social participation, is a basic requirement for responding to and negotiating concerning the needs of the formal and informal sectors that make up the population in the large majority of the countries of the region. It is fundamental that policies based on purely economic measures,¹ which to a large extent concern the formal sector, are harmonized with measures such as incentives, subsidies and the provision of education, which are oriented towards the informal sector - the majority sector in our countries, especially in rural areas and in marginalized urban zones.

II. PROPOSALS FOR ACTION TO ACHIEVE SUSTAINABILITY

Sustainable development strategies should provide feasible ways of attaining pre-established goals that are consistent with the situation and resources of each territory. ***One of the purposes of such strategies is to channel society's efforts to meet previously agreed established goals for economic growth, equity and environmental sustainability, while achieving a balance between the different styles of development adopted by the countries of the region.***

¹ Examples of such measures are economic environmental management instruments, the obligation to carry out environmental impact studies, assessment of the economic value of natural resources and the management of national natural heritage accounts.

The strategies should permit, motivate and promote the participation of people in their own development. Otherwise the goals referred to above cannot be achieved. Thus sustainable development should from the outset seek to improve the human capital (see box 2), to ensure the collaboration of the civil society in implementing these goals.

Box 2	
THE UNITED NATIONS DEVELOPMENT PROGRAMME PROPOSAL (Sustainable human development)	
<p>In the context of sustainable human development social capital, that is to say, the voluntary forms of social regulation, is particularly important.</p> <p>Economic growth is necessary for human development, and the aim of development is to help people to live longer, more productive and more satisfying lives. But this simple and vitally important fact is usually overlooked in the search for material and financial wealth. Economic growth that does not place the human being at its centre is development without a soul.</p> <p>The key to resolving this problem is to approach traditional models of economic growth from the point of view of people; this requires answers to the following questions:</p> <ul style="list-style-type: none"> • Do people really participate in and benefit from economic growth? 	<ul style="list-style-type: none"> • Do new technologies increase or reduce human options? • Does economic expansion lead to employment-led growth or growth without employment? • Can budgets be balanced without unbalancing the lives of individuals? <p>Sustainable human development has the following characteristics:</p> <ul style="list-style-type: none"> • It enables human talents to be realized, with the conscious objective, at the same time, of subordinating the interests and ambitions of some to the needs of others, either living now or future generations. • It can be defined as the amplification of individual choices and talents through the formation of social capital, in order to satisfy the needs of present generations without compromising those of future generations.
<p>Source: United Nations Development Programme (UNDP), <i>Human Development Report 1995</i>, New York, Oxford University Press, 1995.</p>	

This will require, among other things:

- Adopting management models or styles of development which lead to ***the achievement of levels of sustainability within each territory*** in which an organized society is to be found.
- ***Emphasizing the ethical and moral*** dimension that should influence the choice of development styles, particularly with respect to social, environmental and economic equity.
- ***Integrated analysis of the ecological, economic and social aspects***, complementing and establishing relationships between the variables which define them in each territory.
- ***Investing a significant percentage of the economic resources resulting from the exploitation of renewable and non-renewable natural resources*** in research into how the ecosystems of each region function.
- ***Differentiating clearly the formal economic and production sectors from the informal*** in order to select and implement appropriate strategies for each.
- ***Determining clearly the links that exist between economic, social and environmental goals*** and the means for reconciling them, identifying policy and regulatory gaps and

gearing processes towards reducing the conflict between development and the environment, and between the formal and informal sectors of the population.²

- **Identifying the priority topics**, which could include legal reforms, economic instruments and institutional development and strengthening, in order to meet the economic, social and environmental goals.
- Perfecting the decision-making process through *sustainable development management* procedures that make better use of information gathering and dissemination.
- **Allowing the largest possible number of actors, both formal and informal, to participate in the adoption of decisions**, in order to promote understanding and consensus concerning the environmental issues that require strong social commitment.
- **Significantly increasing investment in monitoring of and research into the functioning of ecosystems** affected by human activities.
- With regard to the supply of natural resources, **identifying and implementing management practices that sustain the natural resource base** on which to a large extent the economy of a country is built.
- **Assigning priority to the task of recovering degraded natural resources**, making use of them in accordance with their potential and preventing future conflicts.
- With regard to the demand for resources, adopting or strengthening the **implementation of legislation for the efficient multiple use of natural resources such as water**.

With respect to the practical implementation of the above-mentioned strategies, the following is recommended:

- **Attaching greater importance to formulating land-use management plans**, from the level of private plots to that of complex ecosystems. To harmonize plans for managing the use of resources with those for the human occupation of the territory and with municipal and other regulations, and legitimize plans elaborated on a participatory basis, following clear approval procedures.
- **Strengthening environmental management activities at the municipal level** and in wider areas, such as regions or river basins, in which various levels of management interact.
- **Seeking ways of harmonizing** the activities of the informal and formal production sectors, in order to reduce conflicts between them.
- **Setting up organizational structures for the management of complex ecosystems**, such as lakes, wetlands and coastal zones, as well as of urban areas, in the form of permanent, coordinated institutions.
- **To harmonize the activities of the management authorities at levels and in areas determined by political and administrative factors with those of the authorities responsible for environmental management** of zones defined by the natural context, such as a lake, river basin or ecosystem.

² For example, for the *formal* sector, there is a need for environmental impact studies, requests for contributions, or principles (for example, “polluter pays”). For the *informal* sector, mechanisms, such as training, need to be established that allow the population to participate.

- . *To implement information systems and set up information centres* to facilitate communication and decision-making in order to promote ecosystems management at the level of river basins and municipalities by their inhabitants.³

The strategies should be designed in such a way that they can be implemented gradually, allowing limited resources to be allocated and administered efficiently and funding sources to increase little by little as the benefits of good environmental management by both the State and the private sector become apparent.

III. STRATEGIES THAT HAVE PROVED SUCCESSFUL

The *first* group of strategies which have proved the most successful, were aimed at improving firstly the management capability of users of the environment *at the rural and urban community levels*. The organization of users' capability to manage a site continuously in a knowledgeable, participatory way has been the basis for the success of programmes that have made the greatest contribution to promoting economic growth and environmental sustainability and equilibrium.

The *second* group of environmental strategies which have had positive results, in particular through their capacity to match large investments with local needs, is that related to the functioning of *bodies responsible for managing complex ecosystems*. As has been pointed out in ECLAC reports, the singular nature of natural resources and the environment requires that special attention be paid to the territorial dimension of development by introducing the necessary institutional changes, redefining research units or matching the environmental management units with the political and administrative units. This means assigning more functions and greater responsibility to the agencies that manage natural resources and allowing them to coordinate their activities with those of the political and administrative authorities.

Natural resources management comprises a wide range of measures affecting large geographic zones. These measures should preferably encourage decentralization, the aim being to stimulate the necessary management capacity at the local level to ensure that the measures have lasting effect. The private and public agencies that participate in this process should work together in a clearly defined and transparent way so that the implementation of national policies has the support of the entire community and the activities of the various agents do not conflict (ECLAC, 1991). Although the importance of having specific bodies to manage ecosystems, such as river basins, is recognized, there are not many such bodies in the region, even in countries that have had successful ecosystem management programmes.

³ "Information Centers", like those established at the entrance to some national parks, are communication and data centers concerning the functioning of the ecosystem in question. They provide models, plans, libraries, videos and environmental monitoring systems. They can and should be established for river basins, and in municipalities and other areas where environmental management is being practised, in order to promote understanding by the population of how ecosystems function.

The *third* group of strategies relates to *policies at the national and international levels* to promote sustainable development (see box 3). These strategies should be geared towards the formal and informal production sectors. As far as the *informal* sectors are concerned, investments that provide producers with material security, trading facilities and access to credit and markets, training and technical support would allow them to develop their environmental management capability. For the *formal* sector, the possibility exists of using economic means, either incentives or sanctions. It is therefore useful to examine the effects that countries' current environmental policies are having on both types of producers.

Box 3

ENVIRONMENTAL MEASURES THAT COULD BE ADOPTED AT THE NATIONAL LEVEL

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| <ul style="list-style-type: none"> • Control of growth through better <i>a priori</i> environmental integration: "prevention is better than cure". • Introduction of new techniques to ensure the efficiency and quality of production with respect to its effect on the environment; increasing public and private environmental research fourfold. • Modernization of the State; creating territorial environment services. • Awakening general interest in the environment; increasing participation until it is general; delegation of responsibility. | <ul style="list-style-type: none"> • Establishing an equilibrium between science, expertise and democracy; providing scientific back-up to environmental management policies and promoting surveys for control purposes. • Increasing social justice; applying widely the principle of "polluter pays" and combating ecological imbalances. • Undertaking international commitments; maintaining the competitive position of eco-industry and strengthening solidarity. |
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Source: France, Ministry of the Environment, The French approach: from Stockholm to Rio, 20 years of the environment, based on Rapport national de la France pour la CNUED/Rio, Paris, 1992.

In order to provide assistance to the informal production sector it is essential to develop systems that extend the scope of activities to the maximum, that is to say, to cover wide areas and reach all the municipalities, and to generate viable alternative ways of achieving such goals based on training and the elaboration of methods and procedures that can be reproduced simultaneously throughout the territory of a country. It is important to involve local actors in carrying out this type of activity. Every municipality should have the capacity to implement some of the initiatives described above, for example by encouraging contributions from the private sector for environmental management purposes.

Consequently, the Governments of the region should not just be concerned with attracting large investments in mining, energy and oil production and harnessing water power by means of more facilities, franchises and guarantees. They should also try to identify the measures that need to be adopted to ensure that part of the income that such investment generates is invested in improving local rural and urban production while protecting the natural resources of production and the environment in general through production management plans. The challenge lies in

determining how the actors in production can complement one another in order to contribute to the sustainable development of an ecosystem (see box 4).⁴

Box 4

CONFLICTS AND COMPROMISES FOR SUSTAINABLE DEVELOPMENT

There is an ever-increasing duality of approach in styles of development in the region. The first originates outside the region and its trend is towards globalization, the use of advanced technology and large amounts of capital. The second is regional and based on traditional production and extraction systems, usually varied and relatively small-scale, that are not capital intensive.

To the above should be added the presence of formal and informal sectors - depending on the legality of their activities, their relationship with the State and the implementation of democratically adopted laws. The formal sector is more associated with technically advanced enterprises than the informal sector.

Generally speaking, the vast informal sector encompasses the poorest sectors of the population, in both rural areas and in marginalized urban zones.

Each country in the region and each political and administrative territory must play an appropriate role, seeking compromise formulas, in order to resolve conflicts that arise out of this ambivalence of approach.

Within the formal system, concern for the environment can be channelled by means of legislation and environmental impact studies, among other things. For the informal system, on the other hand, especially in sectors in a situation of poverty, the most important factors are incentives: education, opportunities and different life choices.

Source: ECLAC, *Conflictos y conciliaciones de estilos de desarrollo en los Andes* (Conflicts and compromises in development styles in the Andes), paper presented at the Interregional Meeting on Sustainable Development in Mountainous Areas, Lima, Centro Internacional de la Papa en el Perú (CIP), 1 August 1995, unpublished.

IV. MEASURES AIMED AT ENVIRONMENTAL MANAGEMENT

There is no doubt that, given the scarcity of resources, it is necessary to address environmental issues step by step. The countries of Latin America and the Caribbean which generally accepted the global stance on the environment in 1972 were not at that time managing natural resources such as water, soil, fauna or native forests, nor did they have the organizational capacity to take on the management of complex ecosystems. In spite of the current concern about the ozone layer and global warming, it is still not known how the majority of the ecosystems that sustain the economies of the region function. It is not enough to know how many native forests there are, nor how much water or how many fish. It is necessary to know how they behave, in order to be able to intervene in natural processes without changing them irremediably or destroying them (see box 5).

The remainder of the 1990s should be devoted to creating the bases for managing natural resources and the environment effectively, a process that should be carried out jointly by the

⁴ It is most important to revise public policies that permit the withdrawal of water from a river basin - where it is generally used for agricultural purposes or to maintain minimum instream flows for ecological reasons - and its transfer to another river basin, for use in mineral processing, with the emphasis being only on temporary financial gain. At present, in some countries, the value of a mineral on the metals market is such that, in the competition for water rights, the larger income that is unquestionably generated by its use for mining purposes overrides the goal of maintaining ecosystems and cultures that have survived for thousands of years in desert zones.

State and the private sector. It is essential for this purpose to be aware of the current situation in each country and in each region. In that respect, privatization, opening up to the outside world and decentralization are - provided strategies are designed to that end - potentially excellent bases for involving formal and informal users in environmental management processes. The State should improve its promotion, support and legislative functions where necessary. The private sector should organize to assume new roles in management processes: its voluntary contributions to improving environmental management are even more essential than its obligatory duties. In order for it to make such a *contribution*, there must be understanding of environmental situations that affect the milieu in which the private sector operates.

Box 5

THE PRODUCTION BASE: NATURAL AND ARTIFICIAL PROCESSES

The production of goods involves both natural and artificial processes, or a combination of both.

Insufficient resources are allocated from national budgets for research into and evaluation of the natural processes involved in production before there is any intervention in such processes that alters the ecosystems which are veritable “natural factories” for products.

Scientific research into the ecosystems that make production and the extraction of natural resources possible has traditionally been assigned low priority in the region, in spite of

the fact that the countries’ economies depend to a large extent on the export of such resources.

It is therefore a matter of urgency that the countries allocate more resources to research into their ecosystems, strengthen their monitoring systems and dignify the work of scientists specializing in these areas.

In the production of goods that are of value to human beings, both nature and applied processes are involved. However, little is known of the processes and products generated by nature, in spite of the fact that they are intensely exploited.

Source: ECLAC, Los procesos naturales y artificiales en la transformacion de la estructura productiva (Natural and artificial processes involved in changing the production structure) (LC/R.1459), Santiago, Chile, October 1994.

The organizational goals for the management of ecosystems should be clear and even “modest”, but should be broad in range, if it is really wished to create a lasting system with sustainable financing (see box 6). An illustration of this is an extensive programme for the restoration of cultivation terraces in Peru and Bolivia. Implementation of such a programme can

Box 6

CRITERIA FOR FORMULATING NATIONAL STRATEGIES

Strategies should:

- seek to improve and maintain the well-being of people and ecosystems;
- promote sustainable development;
- include strategic and tactical objectives;
- provide for a process that is adaptive and cyclical;
- incorporate citizen participation in the planning process;
- rely on communication;

- include participatory planning and action processes;
- be integrative and intersectoral;
- promote capacity building; and
- international bodies should support the process without altering it or adopting a patronizing approach.

Strategies for sustainability are translated into action plans to improve and maintain the well-being of people and ecosystems. Such plans should serve a duly established territorial environmental management system.

Source: Jeremy Carew-Reid and others, Strategies for National Sustainable Development: A Handbook for their Planning and Implementation, London, Earthscan Publications, 1994, p. 12.

be relatively less expensive per hectare in arid zones than an irrigation programme, but implementation is more complex if a system is not first put in place to manage such recovery over a wide area. The same is true for the administration of complex ecosystems such as high mountain zones, coastal zones, large lakes or wetlands, desert zones and river basins. Long-term preparation of the population concerning management measures is necessary, as well as long-term investment for research on the ecosystems affected by such intervention.

With regard to reforms in the use of energy resources, steps must also be taken to balance economic, social and environmental development, adopting an integrated approach in order to orient the energy sector's contribution towards sustainable development (see box 7).⁵

Energy intensity (energy consumed per unit of GDP) fell by about 10% between 1970 and 1980, rose slightly by 7% between 1980 and 1991, and remained constant from 1991 to 1995. This performance was influenced by the low level of energy efficiency attained in the majority of the countries of Latin America and the Caribbean and by the structural changes in certain energy intensive sectors in some countries.

Box 7

REFORM OF THE ENERGY SECTOR AND SUSTAINABLE DEVELOPMENT

Since the mid-1980s, the majority of the countries of Latin America and the Caribbean have been undertaking reforms of their energy sector in general and the electricity sector in particular. The objective of these reforms, at the macroeconomic level, has been to balance public sector accounts by eliminating State enterprise deficits and, at the sectoral level, to increase the reliability of energy systems, improve production efficiency, obtain financing from private sources and protect the interests of consumers.

It will be many years before the effects of these reforms and of private participation in the electricity sector can be fully evaluated. Nevertheless, from the standpoint of sustainability, some questions arise with regard to the three main axes of sustainable development:

- The **economic and financial** component. Since 1990 the financial indicators have improved (debt-capital ratio, domestic financing of projects, debt servicing payments, among others). This is largely accounted for by increases in tariffs, debt reduction and, in some countries, by the financial cleaning-up of public electricity companies before privatization.
- **Social equity**. The main effects of electricity reform can be summed up as follows: (i) adjustments in prices have

affected lower-income groups in varying ways; in some cases they have been negative, in others a system of cross-subsidies, from high-income to low-income groups, has been adopted; (ii) the reduction in the rate of rural electrification directly affects the satisfaction of the needs of people in rural areas and indirectly their productivity; and (iii) in some countries in the process of privatizing and rationalizing the public sector no mechanisms have been implemented to absorb laid-off manpower.

- The use of **natural resources**. It is noted that Governments have not been able or are not prepared to implement effective incentives for new or renewable sources of energy, except in a few countries which have adopted a limited approach consisting of formulating special programmes or legal provisions.

It can thus be argued that the insufficiencies of the reforms lie in the fact that they are promoting electricity generation structures that can have negative social and ecological effects. To overcome these insufficiencies, study should be made not only of the effects on financing and investment to ensure electricity supply, but also of the effects on the redistribution of income, ecological issues, national capabilities and human resource development.

Source: OLADE/CEPAL/GTZ, *Energy and Development in Latin America and the Caribbean project*, preliminary version, Quito, Ecuador, June 1996.

⁵ OLADE/ECLAC/GTZ, *Energy and Development in Latin America and the Caribbean project*, preliminary version, Quito, Ecuador, June 1996.

The aspects of equity associated with access to electricity are closely related to the characteristics of income distribution. It has been ascertained that the lowest-income sectors of the population (40% of households) do not have acceptable coverage of their basic energy needs, and that the effective energy consumption of the wealthiest sector of the population is almost seven times higher than that of the poorest.

The exploitation of natural resources has increased in parallel with the enormous external debt of the region. It is clear that the way in which natural resources are exploited has been influenced decisively by the rise in the price of crude oil, with the resulting continual increase since 1975 in the quantity of fossil resources extracted. If population growth is taken into account alongside such developments, the natural resource base per inhabitant in 1995 amounted at the most to 60% of that for 1970. The average level of emissions per capita in the region is significantly lower than in the industrialized countries. The share of Latin America and the Caribbean in total global CO₂ emissions is only 5%.

Appropriate management of the environment in Latin America and the Caribbean will continue to be merely Utopia as long as the population does not participate and there is no investment in research on how the environment functions. Contributions can obviously be made to alleviating global environmental conflicts concerning the ozone layer and climate warming, but this is not enough to overcome the more immediate environmental problems of the countries of the region.

A large number of the environmental problems that urgently require attention are not technically complex. It has been estimated that if the countries committed themselves to administering just one resource, water for example, to avoid its being contaminated, more than 50% of the most pressing environmental problems would be solved. However, in most cases the attainment of environmental objectives does not depend so much on the technical aspect as on the adoption of policy measures by existing organizations to put the necessary changes into effect (see box 8).

It is also essential to establish links between the biological factors and the legal and economic aspects,⁶ an issue to which specialists in the region are not yet paying sufficient attention. In the same way as engineering and biology have joined forces to meet new challenges, it is necessary for the juridical, environmental and economic aspects to be reconciled and

⁶ ECLAC reports have already pointed out the problems that arise in attempting to understand the relationship between economic and ecological system activities. Unfortunately, there is practically no information or research on this relationship, which means that there is a lack of knowledge of the real situation when decisions are being taken. From the investment point of view, the majority of economic approaches consider natural and environmental resources as consumer goods and not as investment; this situation encourages accelerated depreciation of the natural capital and is a significant indicator of the relationships between economic policies and natural resources, which require to be studied in depth. However, the region has no registry of information on this issue, both because of lack of research and because of the complexity of some of its ecosystems (ECLAC, 1991).

harmonized in order to meet coherent goals.⁷ The financing of action to strengthen sustainable development is obviously a key aspect (see box 9).

Box 8

CONDITIONS FOR THE FORMULATION OF SUSTAINABLE DEVELOPMENT STRATEGIES

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| <p>1. Wide understanding of the concepts of sustainable development and of strategy design, and the need to implement them at the relevant level (river basin, municipality or country).</p> <p>2. Clear economic, social and environmental objectives, together with a monitoring mechanism, so that the strategy continues to pursue them and is not diverted or misinterpreted. The objectives should be achieved with the help of popular participation. It should be possible to modify the initial objectives on a consensus basis.</p> <p>3. A structure for implementing the strategy, including well trained and experienced permanent staff. A body of people inside and outside government is needed to take responsibility for implementing the strategy.</p> | <p>4. Human resources. The minimum required is for a steering committee and a permanent secretariat to carry out core functions of policy review and development and of starting up training activities on environmental management in all municipalities.</p> <p>5. Effective communication enables those who implement the strategy to exchange information, reach agreement on the measures to be adopted, undertake actions to change or strengthen values and knowledge, and inform others about the strategy. Together with participation, communication is one of the key elements of a sustainable development strategy. A communication plan needs to be developed and implemented, covering modes and frequency of communication. This is very important in the formal and informal production sector.</p> |
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Source: Jeremy Carew-Reid and others, Strategies for National Sustainable Development: A Handbook for their Planning and Implementation, London, Earthscan Publications, 1994, pp. 44 and 45.

These are some aspects of the issue of sustainable development that should be addressed during the remainder of the current decade, if the difficult existing situation with regard to environmental management is to be improved. One of the first steps must be to establish both State and private sector structures for the management and administration of natural resources. Simple but effective tasks need to be carried out, on the necessary scale and with great priority being given to preventive measures, in order not to repeat errors that have been committed in the more developed countries, since correcting them is very costly.

There should also be clear awareness of the technical and institutional capacities that exist in the region, and the global, national and local environmental management agreements that have been adopted should be implemented (see annex). In the technical area, it is not necessary, for example, to use sophisticated equations to determine exactly how much soil erosion has occurred. The problems associated with erosion are known to have widespread effects and appropriate measures must therefore be taken to mitigate and halt the phenomenon. For this purpose good organization and a high level of participation are required in order to be able to act rapidly, on a broad front, and to provide services to a wide range of users. Technology is not sufficient in itself; good organization and the determination to apply the technology are also necessary.

⁷ This is particularly relevant for treaties on international trade; the management of shared river basins; water and land laws; the protection of fauna, flora, the sea bed and endangered species; and many other aspects that require in-depth knowledge of ecosystems, economic policy and legislation.

Box 9**FINANCING SUSTAINABLE DEVELOPMENT**

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| <p>1. In order to achieve sustainable development it is necessary to mobilize additional financial resources using innovative mechanisms at the local, national and global levels. Sustainable development cannot exist independently of financing.</p> <p>2. To this end it will be necessary to modify the existing incentive structure, to encourage the agents of production and the population to change their behaviour. This change must consist in eliminating subsidies and increasing taxes and charges on activities that are harmful to the environment. That is to say, fiscal reform is required, with conventional taxes being reduced and replaced by environmental taxes proportional to the damage caused (which mitigate market failures).</p> <p>3. Thus efficiency and growth can be encouraged, damage minimized and environmental assets conserved. At the same time, financial resources can be freed (reduced subsidies) and additional revenue (taxes and charges) generated in the fiscal budget. These funds can be channelled to human resource training, investment that benefits sustainable growth, and research and development to improve awareness of ecosystems and increase protection of river basins, biodiversity and the environment, with a resulting increase in employment in a sector that is usually marginalized.</p> | <p>4. The felling of native forests, the exploitation of minerals and the use of fossil fuels are examples of activities that should be taxed proportionately to their environmental cost to society. Reforestation with native species, pest control, soil conservation and the use of solar energy are examples of activities that deserve to be subsidized.</p> <p>5. Instead of extending the supply of resources (such as energy), the emphasis should be on managing demand properly and increasing the efficiency of existing management and conservation systems.</p> <p>6. In many countries, the rate of exploitation of natural resources is unsustainable, with the aggravating factor that the Governments collect only a very small part of the revenue generated, which could be reinvested in the protection and conservation of the ecosystems from which those resources are extracted. Another aggravating factor is that the fines currently imposed for contravening the norms for the exploitation of forests or fauna bear no relationship to the revenue generated. Moreover, responsibility for imposing such fines generally lies with the judicial authorities, who have no knowledge of the issue. The transition to sustainable development can be financed provided that a long-term approach is adopted and the necessary financial mechanisms put in place.</p> |
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Source: Theodore Panayotou, Aproximaciones innovadoras a la protección del medio ambiente y a la financiación del desarrollo sostenible (Innovative approaches to protecting the environment and financing sustainable development), Centro de Ecodesarrollo (CECODES) and Corporación Latinoamericana de Economía Internacional (CLADEI), El desarrollo sostenible en la economía de América Latina, (Sustainable development in the Latin American economy), M.E. Correa and J. Valencia (eds.), November 1995.

In the institutional area, it should be remembered that *sustainable development essentially consists in the management of conflicts between human beings*, which can only be resolved with adequate participation and knowledge. The countries of Latin America and the Caribbean have for long been exporting billions of dollars worth of natural resources. It would be sufficient to invest a minimum percentage of that income to have better knowledge of and to administer better the basis of their wealth and thus improve the management of the natural resources.

As long as, in our countries, we continue to think that solutions can only come from outside or that they can be reached without domestic commitment to improving environmental management systems, it will not be possible to achieve sustainability goals. Latin America and the Caribbean “export” environmental sustainability to other countries and import technology; the balance of trade has historically been unfavourable in several ways. Unfortunately, an insufficient percentage of the value of exports of natural resources is allocated to reinforcing the countries’ environmental management systems. It is essential therefore that part of the income that the countries of the region obtain from exports of natural resources should be devoted to

research into the functioning of the ecosystems from which their wealth comes. If corrective action of this sort is not taken in time there will be no capacity to ensure the conservation of the countries' natural production base.⁸

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⁸ It is estimated that the countries of the region allocate less than 1% of the product of the export of their natural resources to research into the ecosystems from which those resources are obtained. A major part of such research is currently funded by outside sources.

Annex

**CLASSIFICATION OF SELECTED ENVIRONMENTAL
AND DEVELOPMENT STRATEGIES**

Multisectoral	Sectoral or thematic
International	
<ul style="list-style-type: none"> • Action Plan of the United Nations Conference on the Human Environment • World Conservation Strategy • Report of the World Commission on Environment and Development (<u>Our Common Future</u>) • Report of Latin American and Caribbean Commission on Development and Environment (<u>Our Own Agenda</u>) • Caring for the Earth: a Strategy for Sustainable Living • Agenda 21 • Strategies for shared regions (UNEP Regional Seas Programme, river basin strategies, etc.) 	<ul style="list-style-type: none"> • Global Biodiversity Strategy • Tropical Forestry Action Programme • Den Bosch Declaration and Agenda for Action on Sustainable Agriculture and Rural Development • Global Strategy for Health of All by the Year 2000 • Plan of Action to Combat Desertification • World Population Action Plan • International Environmental Education Programme • Vancouver Action Plan for Human Settlements • Mar del Plata Action Plan for Water Resources Development • Global Programme of Action for the Protection of the Marine Environment from Land-based Activities • Climate Change Strategy
National	
<ul style="list-style-type: none"> • National development plans • National conservation strategies • Environmental action plans • Green Plans • National environmental management plans • National sustainable development strategies • Provincial conservation and sustainable development strategies 	<ul style="list-style-type: none"> • Sectoral master plans • Tropical forestry action plans • National plans to combat desertification • National or provincial strategies and action plans on biodiversity, climate change, energy, environmental education, indigenous peoples, population, etc.
Regional or local	
<ul style="list-style-type: none"> • Conservation/environmental/sustainable development strategies and action plans for political/administrative regions, natural regions municipalities, etc. 	<ul style="list-style-type: none"> • Regional or local strategies and action plans on biodiversity, climate change, energy, environmental education, indigenous peoples, population, etc.

Source: Jeremy Carew-Reid and others, Strategies for National Sustainable Development: A Handbook for their Planning and Implementation, London, Earthscan Publications, 1994, p. 35.