

NATIONAL ENVIRONMENTAL STRATEGY

CUBA

INDEX

1. Why the Strategy ?
2. Principles on which the environmental work is based
3. Considerations about the sustainable economic and social development.
4. Basis to achieve it.
5. Main actors and the ways for their concert.
6. Identification of the main environmental problems of the country.
7. Characterization of the main environmental problems.
8. Strategy to minimize the main environmental problems.
9. Instruments to materialize the Environmental Strategy.

NATIONAL ENVIRONMENTAL STRATEGY

WHY THE STRATEGY ?

The environmental situation of the country cannot be left out of the historical, economic and social process which we have been through and its links with and impact on the environment.

During the colonial period and already in this century, under the imposed condition of "Mediatized" Republic, the economic development achieved was mainly based on an extensive agricultural production, with an inadequate use and management of the land and an intense devastation of forest areas.

In this way, the Revolution inherited a deformed economic structure, with a backward agricultural organization and infrastructure, scarce industrial development, mainly concentrated in sugar industry and a negatively impacted environment. There was a critic social situation with high levels of poverty, unemployment, illiteracy and low levels of health, which entailed the difficult living conditions to which the majority of the Cuban population was submitted.

Deep economic and social transformations achieved by the revolutionary process led to favorable changes in the living conditions of the population and consequently to an increase in the actions to protect and preserve the natural resources, which are considered as people's heritage.

The summary of the environmental activity of the Revolution during these 37 years, is indeed positive. The following are some of the gains achieved: the eradication of extreme poverty and its sequels in terms of health and education; the improvement of environmental conditions and life quality in a framework of equity; the increase of the national forestry areas, the declaration of a number of protected areas and the proposal for their integration in a national system; the systematic work of territorial ordering and environmental assessment of priority investments; the use of the scientific capacities in the diagnosis and development of new technologies for the solution of several environmental problems; the process of gradual introduction of environmental dimension in the National Educational System and the growing strengthening of national environmental management.

Parallel to these gains, there have been mistakes and shortcomings, due mainly to insufficient environmental awareness, knowledge and education, the lack of a higher management demand, limited introduction and generalization of scientific and technological achievements, the still insufficient incorporation of environmental dimension in the policies, development plans and programs and the absence of a sufficiently integrative and coherent judicial system.

Moreover, the scarcity of material and financial resources has impeded us to attain higher levels of environmental protection, which has worsened in the last few years due to the economic situation in which the country has been immersed, because of the loss of the commercial ties with the former socialist bloc and the maintained and reinforced United States of America economic blockade. In order to continue improving the environmental work, apart from correcting the mistakes and deficiencies incurred up-to-date, it is indispensable to outline it under the new economic conditions under way.

The sustained economic recovery which the country is experiencing, together with the institutional changes taking place, provide a solid foundation which allows us to move forward with optimism in establishing a National Environmental Strategy, which will lead us to a higher stage in the protection of the environment and the rational use of natural resources; also taking into consideration that the limited financial and material resources available in the country to enforce it, impose its gradual implementation following the priorities and its close relation with the social and economic development programs of the country as the most viable alternatives.

This National Environmental Strategy is aimed at indicating the ideal ways to preserve and develop the environmental achievements of the Revolution, overcome the mistakes and deficiencies detected and identify the main environmental problems in the country, which require a better care in the current situation, creating the foundations for a more effective work, for the sake of achieving a social and economic sustainable development.

RELEVANT MOMENTS IN THE EXPRESSION OF A STATE WILLINGNESS AIMED AT PROTECTING THE ENVIRONMENT.

1. Granting of the constitutional rank to environment by including it explicitly in the Constitution of the Republic of 1976, in its Article 27. It was modified in 1992, to strengthen the idea of the integration of the environment with the economic and social sustainable development.
2. Creation of a National Commission for the Protection of the Environment and Preservation of the Natural Resources, 1976.
3. Passing Law 33 of January , 1981 "Protection of the Environment and the Rational Use of Natural Resources."
4. Passing Decree Law 118 of January 1990 "Structure, Organization and Functioning of the National System for Protecting the Environment and its Ruling Body."

5. Approval of the National Program of Environment and Development, Cuban adaptation of the 21 Agenda of 1993.

6. Creation of the Ministry of Science, Technology and Environment, 1994.

CONTENT OF THE STRATEGY.

1. PRINCIPLES ON WHICH THE ENVIRONMENTAL WORK IS BASED AT THE CURRENT STAGE.
2. CONSIDERATIONS ON THE ECONOMIC AND SOCIAL SUSTAINABLE DEVELOPMENT AND THE BASES TO ACHIEVE IT.
3. DEFINITION OF THE MAIN ACTORS OF THE ENVIRONMENTAL POLICY AND MANAGEMENT AND THE WAYS FOR ITS CONCERT.
4. IDENTIFICATION OF THE MAIN ENVIRONMENTAL PROBLEMS.
5. INSTRUMENTS TO MATERIALIZE THE PURPOSES EXPRESSED IN THE STRATEGY.

1. PRINCIPLES ON WHICH THE CURRENT STATE OF THE ENVIRONMENTAL WORK IS BASED.

1. Contribute with the social and economic development on sustainable basis.
2. Focusing the endeavors on the major environmental problems of the country, without disregarding the local problems and their priorities.
3. Improvement of the economic and financial mechanisms which allow for dealing with the major current environmental problems and the development needs.
4. Concert of the actions related to the Ministry of Science, Technology and Environment, in its role as ruling body of the environmental policy.
5. Active participation of all social actors, both at central and local levels, based on a coordinated action, and on cooperation and co-responsibility.
6. Projection of Cuban science and technology aimed at contributing to solve the main environmental problems.
7. Development of an environmentally safe technological innovation, which would also contribute to the international competitiveness of our products.
8. Formation of an environmental awareness, delving in the actions of environmental education, Dissemination and information.
9. Improvement of environmental legislation and the achievement of if real, effective and systematic fulfillment; including the regimes of administrative, civil and penal responsibility.

10. Upgrading and developing new instruments for environmental management.
11. To sustain the environmental work upon the basis of concert, cooperation and coordination among the environmental authorities and the different institutions and their enterprises and ruling bodies in the territories.
12. Development of an active international environmental policy, seeking effective levels of cooperation and concert of the actions.

2. CONSIDERATIONS ON THE ECONOMIC AND SOCIAL SUSTAINABLE DEVELOPMENT.

Sustainable development is envisioned as the one that satisfies the needs of the present, ensuring an intra-generational equity and without compromising the capacity of the future generations to satisfy their own.

For the developing countries, the challenge of attaining sustainability requires great political, economic and social transformations. **For Cuba, these transformations are a materialized fact.**

Cuban strategy for sustainable development is in essence, an strategy of **continuity**. The idea of sustainability is inherent to the socialist principles upholding our revolutionary model.

Our State has declared national sovereignty on the natural resources and has promoted an active recovery and protection process of them, with men and the integral satisfaction of its material, educational cultural and aesthetic necessities, as the center; engaging the whole society in the attention of environmental problems.

The difficult economic situation which our country has been undergoing in the last few years, has weighed upon, without a doubt, the exploitation of the natural resources and has limited the undertaking of actions for its preservation. However, while the capacity to learn and draw experiences from hardships, is also consubstantial to our process, the idea of sustainability far from weakening, has strengthened, since we have acquired greater awareness and new abilities to rationally use our resources.

The quest for a greater efficiency in the productive processes, the work in pursue of alternative sources of energy, the use of biological products in agriculture, are just some of the signs of conciliation of the development needs with the requirements of sustainability in the present circumstances, achieved on the basis of the technical and scientific training of our people.

The collective access to the main social services, guarantee of equity consubstantial with sustainability, continue being an unwavering stronghold of the revolutionary gains and allows for the establishment of a solid social base to achieve sustainable development goals.

Nevertheless, a strategy for Cuban sustainable development, cannot disregard the difficulties experienced in the last five years and the **challenges** imposed on us to overcome those difficulties in a world more and more unipolar tending to globalization.

The current situation demands an integral conception of **sustainable development**, as a **process where the policies of economic, scientific and technological, fiscal, commerce, energy, agricultural, industrial development, preparation of the country for its defense and others, are interwoven with the demands to protect the environment and the sustainable use of the natural resources, in a framework of justice and social equity.**

BASES TO ACHIEVE IT.

1. Attend to the material, spiritual, cultural, and environmental needs of men, as the main objective.

2. Enhance national environmental management to seek for more effective solutions to existing problems, prevent the arising of new ones, and develop people's environmental awareness and its active participation in resolving and preventing these problems.

3. Strengthen the environmental dimension in decision-making and in the policies, programs and economic and plans of economic and social development at national, sectorial, territorial and local level.

4. Consistently enact the concept of sustainable use of renewable natural resources, ensuring the use of that part that does not endanger their capacity of natural restoration and the limited assimilation power of environmental wastes.

5. Consistently implement the concept of sustainable use of non renewable resources, which reaches beyond the one of rational use, in the sense that, apart from seeking - rationality in their use - and respecting the loading capacity of the natural systems to assimilate wastes, also means to invest part of the gains obtained in their exploitation in seeking for new viable substitutes and technologies of less inputs and in possible cases to reuse and recycle, which will allow for the best use of the resource, its reuse and recycling.

6. Ensure a sustainable use of the resources of biodiversity, since this poses the foundation and future development of our main economic activities, like agriculture, sugar and biotechnology industries, tourism and fisheries.

3. MAIN ACTORS AND THE WAYS FOR THEIR CONCERT.

Article 27 of the Constitution of the Republic.

" The State protects the Environment and the natural resources of the country. It recognizes its close relation with the economic and social sustainable development to make human life more rational and to ensure the survival, well-being and security of today and future generations. It corresponds to the proper bodies to implement this policy. It is citizen's duty to contribute to the protection of water, atmosphere, conservation of the soil, flora, fauna and all the use of the nature potential."

It is the role of Cuban State to exercise the sovereign rights on the environment and the natural resources of the country. As of this state role and through the governmental bodies, the State outlines the environmental policy and management.

The Ministry of Science, Technology and Environment (CITMA), in its condition as the Body of the State's Central Administration which

rules environmental policy, is the one in charge of developing the strategy and concert actions geared at maintaining the environmental gains achieved by our revolutionary process and contributing to overcome the existing shortcomings, guaranteeing that the environmental aspects are born in mind in the development policies, programs and plans at all levels.

**ATTRIBUTIONS AND FUNCTIONS OF THE MINISTRY OF SCIENCE,
TECHNOLOGY AND ENVIRONMENT**

(Agreement No. 2823 of the Executive Committee of the Council of Ministers of November 28, 1994)

a) Steer and control the implementation of the policy aimed at guaranteeing the protection of the environment and the rational use of natural resources, integrated with the sustainable development of the country. Propose and establish the national strategies required for the protection of the specific natural resources and biodiversity. Draw up and control the implementation of the programs that will allow for a better environmental control, an adequate management of agricultural and industrial wastes and the introduction of clean production practices.

b) Supervise and demand from the corresponding institutions the fulfillment of the regulations established for the protection, conservation and rational use of natural resources. Settle the disagreements between the Institutions and other entities concerning environmental protection and the rational use of natural resources, adopting the pertinent decisions or submitting to the Government the proposals of measures relevant in each case. Approve the environmental impact assessments.

c) Steer, appraise and control the meteorological surveillance of weather, of the chemical composition and general atmosphere pollution; the environmental radiological surveillance and the seismologic service, as well as studies of the risks of seismic, meteorological and radiological danger and other natural or anthropic phenomena.

d) Steer and control the activities related to protected natural areas, specially in fragile ecosystems.

e) Steer and control the strategies and programs of environmental education and the activities of recreational and educational institutions in this field.

Logically, these attributions and functions of CITMA, will be undertaken in coordination with and without prejudice to those attributed to other institutions and State bodies.

One of the most significant shortcomings in Cuba's environmental work, is that the productive and service institutions, as well as their enterprises and dependencies, have not paid a systematic attention and control to the environmental problems.

Those institutions developing actions of global character or in charge of controlling certain environmental components, have the obligation of undertaking a proper protection and sustainable use of them.

Such actions include proper conservation and management of natural resources, systematic struggle against the causes and conditions entailing pollution, damage or detriment to them, the implementation of preventive measures and their rehabilitation when required, obtention of productions with minimum levels of wastes and polluting emissions, an effective treatment and use and a proper environmental cleansing.

These obligations are not exclusive of the already mentioned institutions, but are somehow valid for all Institutions or Bodies of the Central State Administration; therefore, it is indispensable for the national environmental management to actively engage, through effective programs, all the bodies and institutions with an influence on the environment one way or another.

Likewise, what is valid for all Institutions of the Central State Administration applies for enterprises parent house, enterprises and other legal persons, national or foreign, which will undertake programs and measures for the protection of the environment and establish the proper mechanisms which will enable monitoring their activities.

The territories are the main scenario where environmental policies and management are implemented; therefore, it is up to the Local Governments in close coordination with the territorial representations of CITMA and with a strong interrelation with the communities under their attention, to guarantee and control their implementation, establishing the provisions and priorities in accordance with the characteristics and main needs of each territory.

Beyond the outlined governmental action, and consistent with the provisions of the quoted constitutional precept, protection of the environment and the sustainable use of the natural resources, is a **right and duty of each citizen**, unfolding through the diverse ways of organization and association recognized by the law adopted by them to attain the social, cultural and scientific goals, without prejudice of the actions carried out by each individual.

BASES FOR CONCERT.

Create a solidarity, co-responsibility, cooperation and coordination spirit around environmental protection with all those productive, social and global institutions at national level, and with their enterprise parent houses, enterprises or dependencies at provincial and municipal levels, in order to implement in practice the incorporation of the environmental dimension to their activity.

In this regard, to revolutionize the working methods seeking for new participation ways which upgrade environmental management and inspection, monitoring permanent systems, facilitate the control of the governmental institutions and encourage self-regulation of those concerned and the participation of the media and the community.

Among the newly proposed methods to be developed and implemented until they become a working tool of national environmental management, are:

1) Covenants for the Concert and Coordination of Actions for environmental management: to be enacted by the Institutions of the Central State Administration with the National Environmental Authority, stating their commitments concerning environmental management, such as, creation and development of appraisal and monitoring systems, training programs, development of actions of technological innovation to provide solutions for certain problems, outlining technical norms or stimulation schemes to control activities detrimental to the environment, or any other action aimed at incorporating the environmental dimension to their activity. They should also include joint actions to be carried out with the environmental authority, as well as the support provided by it in all the undertaken activities.

2) Voluntary Agreements for a better environmental protection, to be enacted by the main enterprises, dependencies, cooperatives and Basic Units of Cooperative Production in one territory, with their environmental authorities. Their content can be similar to the one of the covenants, but with a more concrete character, addressing the specific environmental problem(s) of the subscribing unit.

3) The Codes of Environmental Behavior, to be enacted by workers associations, such as national and provincial trade unions, trade union sections, mass organizations and their grass-root cells, communitary and non-governmental, professional and student organizations, etc., aimed at promoting among their members habits and behaviors in favor of the environment. They should become a powerful tool for environmental education and for the solution of specific environmental problems of certain sectors or production and service units.

4) Conformation of an Integrated National State System for the Surveillance of the environment, regarding the Monitoring System with a comprehensive concept and with common methodological bases for the country.

The concert of actions should be consistent with actions of feasible fulfillment under the current conditions and to outline those for an immediate future, which could be used for monitoring the system of state environmental inspection , in such a way that its fulfillment could be systematically appraised by the environmental authorities. The best results are to be commended by these authorities and the community.

The Environmental Authorities should also create diverse modalities of **SOCIAL INCENTIVE** for those persons and entities with outstanding actions in protecting the environment and sustainable usage of the natural resources.

4. IDENTIFICATION OF THE MAIN ENVIRONMENTAL PROBLEMS OF THE COUNTRY.

To give a hierarchical order of the main environmental problems of the country, their significative impact on the following areas was considered as criteria:

- **Health and life quality of our population.**
- **Prioritized economic activities.**
- **Considerable areas of the national territory.**
- **Highly fragile ecosystems and social and economic significance.**

The major environmental problems have been influenced by a lack of environmental awareness and education in a considerable percentage of the population, which in numerous occasions have resulted in their worsening. The unfolding of these elements, with a direct impact on human being's behavior on the environment, has not been up to other colossal works undertaken by the Revolution, that is why it poses an essential factor to work upon in a short and medium term, in order to achieve positive results in the implementation of the environmental policy and an efficient management.

The identification of the main environmental problems of the country, allows for the hierarchical concert of their attention, focusing the main endeavors of the environmental management on them, within the universe of existing problems. The following presentation does not implies a priority order:

Major Problems

Soil degradation (erosion, insufficient draining, salinization, acidity, compact soils, among other problems).

It harms large agricultural areas, which are the economic mainstay of the country.

Deterioration of human settlements sanitation and their environmental conditions

It exerts a negative influence on the life quality and the health of the human settlements population.

Inland and sea waters pollution.

It damages fisheries, farming, tourism, among other economic sectors; it also tarnishes the ecosystems and life quality in general.

Deforestation.

It strikes soils, the hydrographic basins and the quality of mountain, coastal and other fragile ecosystems.

The loss of biological diversity.

It implies damage to both biotic and abiotic natural resources of the country, and to the life quality of future generations.

CHARACTERIZATION OF THE ENVIRONMENTAL PRINCIPAL PROBLEMS

Soil Degradation:

A large percentage of the country's soil fund is damaged by natural or anthropic factors accumulated along the years, with a marked prevalence of the latter, which have caused: erosive processes striking over 4 million hectares per year, high acidity rates reach 1,7 million hectares, high salinization and sodium levels cover around 1 million hectares, soil compacting has spreading to around 2 million hectares, that 2,7 million hectares have draining problems, and 60% of the country's surface is damaged by these and other factors, which might lead to desertification processes.

Deterioration of human settlements' sanitation and their environmental conditions:

* The tap-water service has suffered limitations in quantity and quality in the last few years, due to the unstable supply of the necessary products for water treatment and the deterioration of the facilities and means used in this activity; the unsatisfactory technical conditions of the water supply and sewerage networks, caused mostly by the lengthy periods of exploitation, and the lack of systematic maintenance and repair; the significant decrease in the mean operation time; the decline in this public service in favor of easy access and difficulties in carrying out an effective surveillance of water quality, among other factors. All this having a negative incidence on the environmental conditions of the major human settlements.

* The collection and disposal of solid wastes is having serious problems on accounts of considerable constraints with our truck stock and with the availability of garbage containers. This situation brings about, in addition, the proliferation of mini-dumpsites in populated areas and near the perimeters of boarding schools and students or workers' camps. There are also difficulties in the hygienic conditions of dumpsites and their appropriate protection, problems in the handling of

sanitary landfills, as well as the inadequate collection and disposal of hospital residues which in many cases are thrown in with house garbage, posing a risk for health. The troubles encountered in solid waste collection and in the increased presence of in-house pets and corral animals have also caused proliferation of rodents. This is closely related to social undiscipline and the insufficient enforcement of existing laws, allowing for the stockpiling of waste in highly-populated areas.

- * In diverse areas of the country, at local level, situations with air poor quality are being confronted. This situation derives from the inappropriate location of industrial facilities and human settlements, the insufficient application of scientific knowledge in the prevention of these problems, and the violation of environmental legislation. In addition, the lack of modern and efficient systems for emission purification, on the grounds of their high costs, combines with the above-mentioned difficulties, as well as obsolete transportation systems, the use of different polluting fuels in domestic activities, insufficient quality and quantity of green spaces, high noise levels in the most highly-populated human settlements, etc.

Industry continues to be the main source for atmosphere pollution, having important centers in Havana (with a heavy incidence in Mariel), Moa, Nicaro, Nuevitas and Santiago de Cuba.

For some years now, the monitoring systems have been undergoing considerable deterioration, what has even caused an almost complete stop in urban monitoring, and in the reduction in the control of pollution sources, as well as a decrease, stagnation and reduction in the quality of the monitoring control of regional pollution problems (acidification of the country's atmosphere, the regional episodes of surface ozone and sulfate aerosols, etc.). Among the characteristics of monitoring at present are: the obsolete nature of the few monitoring and chemical analysis equipment still in operation, and the shortage of supplies.

- * The majority of facilities handling hazardous wastes do not have safe treatment and disposal systems, what adds to inadequacies both in their quantitative and qualitative inventory and in the work carried out for raw material and waste reduction, reuse, recycling and maximum use, and difficulties in environmentally rational handling of chemical-toxic products all along the cycle.

Inland and Marine Water Pollution

- * Pollution in our ground and marine waters is a problem that has gradually aggravated during the last few years, caused

mainly by the deficient state of the sewerage and its incomplete nature in the majority of the cases, by the critical state of treatment plants rendering them out of operation most of the year, the inefficient functioning of a high percentage of oxidation ponds because of lack of maintenance, the high coverage deficit in waste treatment in the country and the serious operation and maintenance problems in treatment systems, the decrease in the levels of recycling and better utilization of liquid wastes in agricultural, food and industrial activities and the constraints of water-quality control and monitoring programs because of a shortage in material resources and in financial availability.

Deforestation

- * In the last few years, the tendency to the indiscriminate use of both natural and artificial forests for energetic purposes has increased, given the existing situation with domestic fuel, the facilitation of areas for food self-sufficiency and construction, not in every case taking into account environmental impact. There are still problems with the quality of the majority of natural forests, as a consequence of their previous inadequate handling and exploitation, mainly in the most important hydrographic basins; as well as difficulties with the country's seed beds which do not meet production and quality expectations, the low survival rate of plantations and of adult trees, and the narrow range of forest species used in reforestation and. The loss of biodiversity in forest flora is also of the urgent problems, along with the insufficient utilization of the bio-mass deriving from the forests, the insufficient use of crop alternation, the increase of erosion caused by the above mentioned process and the damage to the fragile ecosystems.

The Loss of Biological Diversity:

- * Different causes, which one way or the other have had a negative influence on our biodiversity, have manifested all along these years. Among these causes can be cited: the inadequate handling of certain fragile ecosystems; the destruction of species natural habitats; the application of intensive agriculture practices with the excessive use of resources and inappropriate crop rotation; a weak integration between conservation strategies and sustainable use of biodiversity, and the activities for economic development; the lack of comprehensive programs to assess, conserve and use biological diversity in a sustainable manner; the excessive delay in the legal and functional establishment of the National System of Protected Areas; the imperfect control on illegal dealing in highly-valuable species, poaching and fishing of species with a high-economic value; the absence of strict control over the observance of the existing legislation; the inadequate handling of economic and scientific projects, which has led to the country's loss of

important genetic resources; and the lack of an environmental awareness and education in the population.

The hierarchization and characterization of these problems should not entail the lack of attention to other problems that, if overlooked, could aggravate. Likewise, it does not mean that in certain areas, other problems of a higher relative magnitude might exist, requiring a prioritized attention.

However, the identified problems do need a very close attention, in terms of human resources, coordination and institutional concert, decision-making, procurement of financial resources and others that, allow to diminish the negative impact of these problems and move forward in seeking long-lasting solutions.

Strategy to Minimize the Principal Environmental Problems

The solution to the principal environmental problems affecting the country, should be conceived as a systemic and comprehensive approach, not as an isolated solution to each of them, since their negative consequences and effects coalesce against the principal component of the environment: **the human being**. Given this reality, it is indispensable to point out in this document tasks that are necessary to carry out gradually in order to minimize their damage and provide a short, medium, and long-term solution.

Soil Degradation.

The soil degradation, suffered by a considerable percentage of the arable land of the country, requires urgent measures not only to prevent this phenomenon, but also to adopt other steps to ensure their gradual recovery.

To that effect, the conciliation of certain practices of intensive agriculture, that necessary for our country, should be given maximum priority, given the increasing demand of food for the people and the pressing need of export incomes, mainly from the sugar industry. This should be accomplished through the phased, systematic, ongoing and comprehensive introduction of elements that make up sustainable agriculture. This introduction should be backed up by a constant scientific and technological support environmentally sustainable and by the active participation of all the actors.

The following tasks are deemed necessary to minimize this problem:

- * develop production systems or units based on a comprehensive management of resources, not only of its users, crops or products. These units ought to be seen as system integrating agricultural, forests and cattle production, including as well fresh-water fish farming; and laying emphasis on the adequate

utilization of agricultural technology and the implementation of changes in farming and cultivation methods, the concert of soils according to their fertility and productivity with a suitable balance of organic and inorganic fertilization in the appropriate quantity and with the proper quality; the right management of hydrographic basins, perceived as an ecosystem where the integrated management in the handling of resources (water, soil and forests) becomes indispensable, and the requirement that basin authorities ensure their rational and sustainable exploitation and their appropriate rehabilitation;

- * strictly control the quantity and quality of the water used for irrigation and the status of water sources, expand the construction and utilization of lot irrigation and land leveling, and other hydraulic works designed for flood control;
- * apply poly-cultivation and an adequate crop rotation in a consistent manner, not only to fertilize the soil, but also to preserve biological diversity; as well as a more intense promotion to crop alternation;
- * strengthen the integrated pest and disease management and control, with alternative natural products, slowly diminishing the use of pesticides;
- * implement a correct plant varieties policy, which includes the obtention of resistant ones to biotic and abiotic stress and the obtention of high-quality seeds, using safe biotechnological results;
- * increase liquid and solid waste recycling in sugar cane-related agriculture and others, turning it into a really systematic and prioritized activity;
- * schedule a right balance between heavy and light machinery used in the fields to diminish soil compacting, implementing a generalized use deep tilling and other agriculture technological measures that allow for the recovery of affected soil;
- * undertake reforestation, taking due account of the specific nature of each region, the wide-scaled use of a variety of species and the improvement of their survival and development rates, particularly stressing on the conditions of mountain regions, coastal areas, hydrographic basins and the arid and semi-arid lands prone to desertification;
- * continue to develop farm animal production, taking into account the use of local resources, silvo-pasture systems and of leguminous plants in animal feed -- which in addition fertilize the soil. Likewise, necessary measures should be taken to prevent the degrading effects the inadequate management of grazing has on the soil;

- * further the compulsory fulfillment of the recovery of soils affected by mining and quarry exploitation, and other activities causing soil degradation.

Deterioration of human settlements' sanitation and their environmental conditions

Environmental sanitation has suffered a regression in the last few years provoked by Cuba's sharp financial constraints, which have been reflected in the negative increase of some indicators related to the life quality of the people, mainly of the bracket of the population who has settled in the urban belt which accounts for 75% of the total.

In order to solve that problem, organizational and man's management efforts are not only required, infrastructure investments are also necessary. This solution should be looked at as a system closely linked to the solid structure of the Cuban health care, where its preventive character should prevail over its curative nature, with the active involvement of the community.

The following tasks are deemed necessary to minimize this problem:

- * prioritize the necessary investments for the rehabilitation, enlargement, reconstruction and modernization of aqueducts and sewerage, as well as their corresponding treatment facilities, in order to provide water to the people with the necessary quality and quantity, and effectively dispose of previously-treated liquid wastes. This entails an adequate control and measurement of the amount of water delivered and tested; and it will contribute to a decline in the morbidity of water-related diseases;
- * equip the water-quality monitoring system with the necessary resources, in order that an effective watch of this parameter can be achieved. Equipment for atmosphere watch are also necessary for the systematic follow-up of national pollution and the influence of regional and global phenomena.
- * provide the adequate funding and organizational improvement of solid waste collection and disposal, which represents one of the principal difficulties major cities are faced with, a situation which entails the uncontrolled emergence of rodents and hygienic-sanitary problems. To that end, it is essential to endow territorial Sanitation Services with the necessary resources to achieve a substantial improvement of those services and to resolutely stand up to social undisciplined and to the inadequacies in the effective implementation of the existing legislative framework; at the same time implementing a systematic work in environmental awareness-building of the population;

- * face the problem of air poor quality in densely industrialized areas in populated districts, where situations of defective treatment systems, out-dated technologies used in the productive processes and technological lack of discipline, bring about pollution threatening people's health, particularly causing acute respiratory diseases. It is of major importance, to make investments and improve, modernize, and in many cases, complete the technological elements to help minimize this hazard. And impose, at the same time, the effective observance and completion of environment and legislative regulations. Thus, giving an impulse to clean productions and industry self-regulation, with particular emphasis on the cement industry, fertilizer production, the thermo-electrical power plants using Cuban crude oil, and the sugar industry, among others;
- * increase the number of urban green spaces for the purpose of air purification and population leisure and enjoyment spots;
- * introduce substantial, systematic and gradual changes in the existing transportation system, by purchasing new equipment, controlling pollutant emissions and implementing a correct technological discipline;

Inland and marine water pollution.

This problems has special significance, since it is one of the most aggressive elements to aquatic ecosystems bringing their gradual degradation, by causing in many instances the break in their natural recovery balance.

The following tasks are deemed necessary to minimize this problem:

- * achieve an effective functioning and maintenance of the waste treatment systems built in the principal economic and social facilities of the country. The efficient work of not only of their treatment plants, but also of their oxidation ponds built for this purpose, and their compulsory construction, with the most advanced environmental technologies in the new facilities that require any of them;
- * make a better systematic economic use and recycling of liquid waste, conveniently treated for agricultural, industrial and fishing farming use;
- * establish a rational use of natural resources, the implementation of clean productions, the recycling all along the product's useful life, and self-regulation, that is the taking of measures by the polluting entity in order to minimize, monitor and control its effects on the environment. This includes the country's principal productions, mainly in the sugar, basic (particularly mining), cement,

biotechnological and pharmaceutical industries where the updating, definition and enforcement of environmental regulations should be given appropriate priority;

- * ensure a systematic control of the principal polluting sources in ground waters, its correct characterization and the strict demand for the observance of steps leading to mitigate and eradicate their harmful effects. Increase the control over operation and maintenance work in the already built waste treatment plants, which will require the allocation of resources for the purchase of equipment and reagents, and the outlining of short-term Sanitation Comprehensive Schemes taking into account the design of appropriate environment technological and economically workable solutions;
- * improve the sanitary situation of fluvial currents connected to the principal mountain human settlements and to liquid waste treatment and recycling, particularly those coming from coffee pulp. Outline and put into effect definitive solutions to solid waste handling, especially the handling of wastes from the coffee harvest;
- * reduce pollution in coastal and marine areas caused by agricultural, industrial, urban and ship waste disposals without having convenient treatment. This has a bearing on sea water quality and on dragging;
- * develop and apply a gradual tax system on the main polluting entities, while at the same time, establishing incentives for those which manage to slowly reduce their polluting sources and implement the recycling of their wastes and by-products;
- * ensure the restoration of the damages caused to the environment by mining, hydrocarbon and power productions as a result of their activity. Special attention should be paid to the Varadero-Cárdenas strip and Havana's northern shoreline, where an indiscriminate exploitation could hurt the development of tourism;
- * make sure that the reactivating of industrial capacities is accompanied by measures that help minimize environmental impacts.

Deforestation

This process mainly motivated by anthropic factors, has had a positive response during the Revolution, achieving substantial accomplishments in mountain areas. Systematic reforestation was undertaken almost from the beginning of the revolutionary process.

However, it is essential to exactly target certain problems for its minimization:

- * revitalize the country's Forest Planning and intensify plans to that effect;
- * carry out a correct selection of species for the reforestation of different ecosystems, including the obtention of adjustable varieties of plants and the subsequent follow-up, thus improving forest flora diversity;
- * effectively enforce severe coercive measures to curb out-of-control felling and forest fires. This should be done parallel with a process of awareness-building and environmental education in forest communities, involving the active participation of local governments, mass , social and other local organizations;
- * improve the work of the "Turquino-Manatí" Project, as a instrument for national large-scale reforestation programs in the principal mountain regions, fragile ecosystems and other affected areas. Increase the rate of tree planting and reforestation via a more active involvement of communities and relevant institutions, the implementation of forest agricultural systems, the diversification of timber production and a more effective use of forests' non timber-yielding resources;
- * rise the number of forests used for the production of charcoal, as an true alternative to household fuel deficit;

The loss of biological diversity.

The insular characteristics of our country, the fragility and vulnerability of some of our ecosystems, together with anthropic processes, have had a bearing on its biological diversity, being the environmental impacts difficult to assess.

In order to ensure the conservation of the existing biodiversity, it is necessary to:

- * identify the components of the national biodiversity and the prospects for its use;
- * adopt and implement, at the earliest, the National System of Protected Areas;
- * regulate the management of biological resources that are important to the preservation of biodiversity, both in or outside protected areas, to ensure its conservation and sustainable use;
- * promote actions in the protected areas surroundings to enhance their involvement in the preservation of biodiversity;

- * guarantee the protection of species, populations and ecosystems by putting into effect plans for the careful management of ground and marine protected areas, and of areas considered to maintain a balance in the genetic diversity of species;
- * declare the threatened and endangered species, and promote their preservation;
- * identify the processes and types of activities having, or that might have, major damaging effects on the conservation and utilization of biological diversity, as well as follow up these effects through sample examination and other techniques;
- * implement surveillance and control plans for marine and ground biodiversity, caused by natural changes or by anthropic actions at ecosystem, species and genetic diversity levels, paying special attention to those requiring urgent preservation measures and those providing a higher potential for their utilization;
- * promote the special protection of ecosystems and natural habitats of high genetic diversity and/or of a fragile nature, that enable a workable preservation of species in their natural environment and the evolution processes of species and genetic resources;
- * establish and apply environmental control in mountain regions, ensuring the introduction of production practices compatible with the natural potentials, as well as the preservation and improvement of biodiversity;
- * implement effectively the comprehensive management of coastal areas, taking into consideration the ecosystems that make them up with their own specific characteristics. Put in effect exploitation strategies which care for environmental, economic and social values;
- * conserve and utilize properly the plant and animal genetic resources, attaching priority to the lines of development of germoplasm banks and the adequate combination of "in situ" and "ex situ";
- * regulate and control the risks deriving from the use and release living organisms, modified by biotechnological techniques, and other substances or products that might either affect the sustainable conservation and use of biological diversity or generate risks to human, animal and plant health;
- * implement or propose the necessary strategies and regulations to ensure a just and equitable participation of the benefits derived from the use of genetic resources;

- * combine conveniently conservation strategies and sustainable use of biological diversity with economic and social development;
- * persecute all those illegal activities causing damage to biodiversity, such as: illegal felling, unauthorized hunting and fishing, by consistently enforcing the existing legislation and enacting the corresponding provisions where necessary;
- * introduce a system of economic and social incentives aimed at biodiversity protection and development, laying special emphasis on endangered species;
- * work in the communities to rise their inhabitants' environmental awareness and education;
- * establish and apply the necessary legal instruments to regulate the preservation, sustainable use, and the sharing of the benefits derived from biological diversity;

Other Guidelines and Actions for Development.

As a consubstantial part to the above-mentioned elements, aimed at minimizing and prevent the negative causes and effects determining the current principal environmental problems in our country, it is necessary to pay special attention to the following aspects:

- * Although the Cuban coastal area, of extraordinary economic value for the country because of the natural wealth it treasures, is not faced with major problems, it is necessary to take the following measures to ensure its preservation and restoration: introduce the Integrated Coastal Zone Management System in our country, implement plans for the restoration of degraded areas as a way to combat coastal erosion, that include the ban of sand extraction from beaches and dunes, prevent damage to coral reefs, enforce the exact constructive standards and build the coast protection works stipulated by the existing legislation; define the legal uses of coastal areas and take national inventory of this resource, promote plans for their exploitation providing for environmental, economic and social values; and set up mechanisms of implementation to protect coastal resources in cases of emergency or natural disasters.
- * continue the pursuit of new technologies and of higher efficiency levels in the processes of generation and use of energy, thus reducing their environmental impact;
- * promote the efficient use of national renewable energy sources, and come up with technological solutions that allow to prioritize the use of biomass, hydro-energy, as well as wind and solar energy;

- * ensure that the national development of any energy source, is sustained on the adequate preservation and rational use of our natural resources, demanding the corresponding assessment of environmental impact prior to every project or activity with this purpose;
- * promote and develop the pacific use of nuclear energy, as a country's alternative, ensuring the adequate protection and a safe disposal of nuclear wastes;
- * pay special attention to the different development projects on fragile ecosystems, mainly concerning tourism in coastal areas and keys, pursuant to the guidelines of the Master Plans. Also, comply with the stipulations for the development of nature tourism and ecotourism in the approved areas;
- * improve and complete the system of national standards concerning the environment and propose new national standards;
- * intensify the evaluation of the influence the signing of the Multilateral Agreements on Trade and Environment signed by Cuba and contribute to the implementation of measures aimed at the necessary integration of trade and environmental policies;
- * assess the possible influence of environmental requirements already set, or under consideration, by importing countries on the Cuban principal export commodities; as well as the trade policies that are being promoted globally;
- * reinforce the trade capabilities and access to markets of Cuban commodities, on the basis of their environmental quality;
- * ensure that the national production and services oriented to the domestic market, comply with the environmental requirements and parameters that allow to increase their competitiveness and the living standards of our people.

SECOND PART

V. INSTRUMENTS FOR THE IMPLEMENTATION OF THE ENVIRONMENTAL STRATEGY

The instruments for the implementation of the Environmental Strategy make up an integrated system, where all the components interrelate and exert a mutual influence, namely:

- * National Program of Environment and Development
- * Environmental Planning
- * Environmental Legislation
- * Environmental Impact Assessment
- * Environmental Licensing Process
- * State Environmental Inspection
- * Scientific Research and Technological Innovation
- * Environmental Education and Dissemination
- * Instruments for Economic Regulation
- * Environmental Indicators for decision-making
- * International Environmental Policy

1.- National Program of Environment and Development

The National Program of Environment and Development, adopted by the Government in 1993, poses the concrete approach of the Cuban Environmental Policy, with guidelines for the actions of those involved in protecting the environment.

It represents Cuban adjustment to Agenda 21 and is inserted into the development strategy of the country to overcome the hardships entailed by the current economic situation. It fulfills at the same time the objectives, the strategy and the working approach associated to the new concepts and goals for the achievement of sustainable development, adopted at the United Nations Conference on Environment and Development (UNCED).

This document is a basic element for the work of environment management in the country. Along its 32 chapters, every issue addressed provides a prognosis and an assembly of concrete actions and goals to be undertaken by the parties involved.

What is wanted ?

To achieve that the National Environmental Program becomes the main instrument in accomplishing an efficient environmental management at national, territorial and local levels, in such a way that their goals and actions meet the requirements of our economic and social development, aimed at achieving sustainability.

What to do ?

To improve and update the National Program, periodically monitoring its implementation and fulfillment, in such a way that its contents are consistent with the National Environmental Strategy and embody the new requirements of the country, in correspondence to the economic, social and institutional transformations taking place, and to the actual possibilities of the country for their implementation. To incorporate the adopted actions into the System of State Environmental Inspection.

2.- Environmental Planning

The Environmental Management poses a process of appraisal intended to ensure the environmentally sustainable development of the territory, on the basis of an integrated analysis of its biotic and abiotic resources and the socio-economic factors with an impact on it, which interacts with the territorial array providing norms, regulations and guidelines for the administration.

It integrates the Territorial Planning with the environmental aspects and their connection with the economic, demographic and social factors, aiming at accomplishing the highest possible harmony in the interrelation of society with nature.

Planning the transformation of the territory in their economic, social, political and environmental features is a tradition since the first years of the Revolution. The Physical Planning System has undertaken Territorial Management works which have been decisive for the location of the State investment programs, having among its essential goals the guarantee of the rational use of natural resources, the optimum use of space and the prevention of damages to

the environment, within a national strategy of proportional development and social equity.

What is wanted ?

To continue tightening the links between the objectives of the Territorial Planning with the heed to environmental problems, addressing territorial and environmental policies in an integrated way, in the midst of the process of substantial changes of the country towards more complex economic and social structures.

In this direction, territorial planning of the socio-economic development must be associated to the relevant environmental assessment, which will allow for a responsible management of the natural resources, the protection and rehabilitation of the environment, with a view to upgrade the living standard and the quality of life of the population.

What to do ?

- * Studying and improving the policies and instruments of territorial planning, associating them with measures and regulations of an environmental nature, providing for the optimum use and sustainable planning of the territories.
- * Evaluating the implications entailed by inadequate administration or exploitation of diverse ecosystems, proposing the relevant measures or regulations, in order to exert control on anthropic actions.
- * Establishing the regulatory framework required to accomplish the objectives stated above.

3.- Environmental Legislation

Legislation is an essential element of any environmental strategy. To actually play such role, the environmental legislation has to be both efficient and effective. It comprises the Framework Law and the rest of the legal regulations geared at protecting environment, including technical norms of environmental protection.

The legislation is effective when it successfully regulates behaviors, that is, when its scope is sufficient to reach the goals

it sets forth. The effectiveness in legislation does not only involve proper technical-legal level, but also a real political will, adequate institutional structures and a degree of civic instruction, Dissemination and participation in accordance to the intended goals. The legislation is efficient when it attains an effective social compliance. It is particularly important for the environmental legislation to be efficient, inasmuch as it intends to transform behaviors, which even being undesirable, are deep-rooted. Thus, environmental legislation is a source of the environmental policy, as well as an instrument of its implementation.

What is wanted ?

To enforce an efficient and effective environmental legal system, as the main strategic objective. This entails a clear identification of the country environmental problems, the appraisal of options for the solution of these problems and the definition of actions to be undertaken, bearing in mind the economic transformations taking place lately, our idiosyncrasy, education and culture.

What to do ?

- * Drawing up a legislative program for the protection of the environment and the promotion of sustainable development in the country, including a Framework Law and the corresponding complementary legislation.
- * Revising, improving and completing the system of environmental norms of the country, having regard to international environment norms.
- * Enshrining in the new Framework Law, the right of the citizens to a healthy environment and its recognition as a common heritage of the whole society, also setting forth the basic principles and rulings of the national environmental policy, and the instruments paramount to the implementation of that policy; namely those which are strictly environmental (incorporating the environmental scope into development planning and into the decision-making process, environmental planning and environmental impact assessment), as well as supporting mechanisms (Dissemination, citizen's involvement, education and research), economic and financial mechanisms (fiscal encouragement, enacting credit rates and credit lines) and legal control mechanisms (preventive systems and civil, criminal and administrative penalties).
- * Passing rules on the establishment of mechanisms of coordination at the organizational and institutional levels, as well as at the territorial one, due to the intersectorial nature of the environmental management.
- * Ruling the strategy related to environmental legislation in the sectorial spheres where they will be implemented.

4.- Environmental Impact Assessment

Environmental Impact Assessment is the state process aimed at identifying, predicting, assessing and reporting on the impact of the plans, programs, projects and works on the environment, and on the use of the concerned resource or resources, in order to make decisions, which comprises a detailed information on the monitoring and system ensuring its fulfillment, and the mitigative measures to consider.

Taking into account the significant impact of a project, works or activities on the environment, it shall be demanded that they are subjected to a Study of Environmental Impact, which should be assessed and approved, if befitting, by the Environmental Authority.

The process of Environmental Impact Assessment comprises: the application for the Environmental License; the Study of Environmental Impact, when befitting; the Assessment as such, by the Ministry of Science, Technology and Environment, and the issuing or denial of the Environmental License.

What is wanted ?

Environmental impact assessment should play a harmonious role within a management system based on the introduction of the environmental scope in the plans, programs and projects, and on an adequate Environmental Planning.

What to do ?

- * Encompassing in the Environmental Impact Assessment the master plans and public policies, as a strategic instrument for sustainable development and territorial planning; the new investments, as well as the expansion and refurbishment of existing works and in the cases of the productive reactivating of activities currently suspended, and other works or activities underway which could bring about a negative impact.
- * Drawing up and improving the List of works, activities or plans where Environmental Impact Assessment is mandatory.
- * Decentralizing the process of Environmental Impact Assessment, trying as much as possible to grant a prevailing role to the territories.
- * Fully enforcing the standing legislation of the Ministry of Science, Technology and Environment related to Environmental Impact Assessment, appraising within a reasonable term

its impact and the requirements to upgrade it.

5.- The Environmental Licensing Process

The Environmental License is the official document duly issued by the Ministry of Science, Technology and Environment to other state bodies and organizations, without prejudice to other licenses, permissions and authorizations and consistent with the standing legislation, in order to exert proper control in monitoring the fulfillment of the provisions of the legislation in effect. It embodies the authorization for the undertaking of a work or activity, subject to the compliance by the beneficiary of its requirements related to the prevention, mitigation, correction and compensation of the environmental impact of the authorized work or activity.

The implementation of the Environmental License must be the result of a harmonious and objective process, having special care to avoid obstructing the requirements of a national dynamics, framed by an increasingly significant investment process and the growth of self-employment activities.

Most of the licenses issued today, like Sanitary or Building licenses, share to a certain degree an "environmental view". This feature must be enhanced and interrelated, with a view to harmonization and integration of permits and licenses which although issued by different sources pursue the same goal, protecting the environment, which entails care of human beings health and concern for the quality of their life.

What is wanted ?

To accomplish that every work or activity liable to render significant environmental impact be subject to approval by the competent environmental authority, which will be issued in the form of an Environmental License. The Environmental License must have distinct and specific objectives on those sectors which so require.

What to do ?

- * Identifying the scope of the activities with higher environmental impact, mostly those emitting liquid and solid wastes, polluting soil, the air or the atmosphere, and the ones involved with the use of natural resources, among others.
- * Legally regulating the issue of licenses, implementing simple and effective procedures to issue and control them.
- * Drawing up and implementing guidelines for the harmonization and integration of permits and licenses issued by different sources and striving for the same goal of environmental protection.
- * Enforcing relevant measures by the Ministry of Science, Technology and Environment upon programs, works or activities which start without the Environmental License, or do not meet the requirements and controls in effect, without prejudice to the implementation of the corresponding responsibilities.

6.- System of State Environmental Inspection

State Environmental Inspection is defined as an activity controlling, monitoring and supervising the fulfillment of the standing legal ordinances and norms, in the field of the protection of the environment and the sustainable use of natural resources to assess and ascertain measures ensuring their fulfillment. Environmental Inspection is a mechanism essentially preventive of the actions damaging environment, inasmuch as it helps inhibiting behaviors forbidden and punished by the legislation in force.

The State Environmental Inspection is envisaged as a System made up by: the State Environmental Inspection, by the Ministry of Science, Technology and Environment, where agencies and organizations convened by the State are involved, and State Inspection undertaken by other State agencies and organizations whose activities have an impact on the protection of the environment.

What is wanted ?

Developing, mindful of the basically preventive nature of the Inspection, adequate self-regulating mechanisms and other voluntary actions, by natural or legal persons using natural resources, with a view to upgrade their sense of responsibility, consistent with the constitutional statement that environment protection is a duty of the whole society.

What to do ?

- * Effectively apply the standing legislation of the Ministry of Science, Technology and Environment, related to State Environmental Inspection.
- * Coordinating systematically the activity of the Ministry of Science, Technology and Environment with that of the organizations, which, on the grounds of their main attributes and roles, undertake environment supervision tasks, incorporating in their supervision systems the issues required to ensure environmental protection.
- * Establishing in this coordination process the basic ruling plans and instruments for the environmental inspection on the major nationwide targets detrimental to the environment.
- * Setting up an effective system of follow up and control of the inspections outcome which enables to fulfill the recommendations and instructions, based on persuasion and conciliation, and on administrative, civil and penal enforcement, when required.
- * Facilitating self-regulating mechanisms and other instruments of voluntary conciliation to be undertaken by the potential targets of the Environmental Inspection, in such a way that they foresee preventive actions enabling them to meet the requirements of the inspection.
- * Enhancing the role of the territories in the environmental appraisal, since the nearness to the targets of appraisal helps them to be aware of the existing problems and improves their possibility to proceed fast and accurately. Integrating at this level the actions of all the involved organizations and of the Local Governments.

7. Scientific Research and Technological Innovation

The scientific policy laid out since the first years of the Revolution and its consistent implementation, in indivisible association with the educational policy, have enabled the country to rely today on a remarkable scientific-technical potential, particularly regarding a work-force distinctively professional, highly qualified and experienced; which along their training and seasoning stages have yielded new knowledge and contributions which have been incorporated and absorbed by several productive and services branches.

This scientific and technological capacity will enable to propose alternatives to mitigate or to resolve the environmental problems, to harmoniously, rationally and efficiently sustain the use of the renewable and non renewable natural resources available, to control the pollution problems and to expedite an industrial development based on the production of native technologies and the transfer of suitable technologies, meeting the needs of the country.

What is wanted ?

To boost the contribution of the national scientific-technological capacity to the solution of the environmental problems of the country.

What to do ?

- * Enhancing the research and studies scientifically sustaining the environmental scope incorporated to the prioritized Programs of Economic and Social Development, in the Science and Technological Innovation Programs and Projects.
- * Undertaking research and technological innovation projects, aimed at preventing, assessing, controlling and reversing environmental decline, introducing solutions obtained in the programs of Economic and Social Development.
- * Enhancing the projects of Scientific and Technical Programs and other components of the National Plan of Science and Technological Innovation, the environmental requirements right at the stage of design, as well as their economic assessment and social impact with a view to render results facilitating the sustainability of our project.
- * Identifying the major environmental problems addressed by science and technological innovation, bearing in mind the national, branch and territorial needs and fostering studies aimed at upgrading the knowledge of the state of natural resources and environment as a whole.
- * Fostering the use of environmentally sound technologies combining traditional methods with the requirements and demands of sustainable development.
- * Encouraging, within the movement of the Science and Technology Forum, solutions and innovations favoring the achievement of a more suitable environmental administration.
- * Promoting the required economic and social research as a support to the environmental activity.

8.- Education and Environmental Dissemination

Environmental Education is deemed a continuous and permanent process, posing a dimension of the integrated education of all citizens, aimed at achieving that in the process of instruction, development of habits, skills, attitudes and formation of values; the relations between man and between man and the rest of the society and nature harmonize, thus favoring the reorientation of economic, social and cultural processes towards sustainable development. Environmental Dissemination plays an important role as an instrument to protect and sustainable use the environment resources, issuing information and disseminating it through all mass media, with distinct and accurate messages and codes.

The legal-normative and economic instruments are not enough to create an attitude consistent with the care and preservation of environment; therefore it is necessary to develop in our population an environmental culture, as a premise to accomplish the objectives and goals of sustainable development.

What is wanted ?

- * To redirect and enhance education towards sustainable development, conducting activities in a harmonious, systematic and coherent way, and involving every governmental organization and institution, social organizations and the whole population.
- * To expand the development of environmental education activities entailing community involvement, and to improve citizens' awareness on sustainable development, using creatively the accumulated participative experience of the Cuban social project.
- * To upgrade the role of mass media in accomplishing an integrated environmental education for the whole population and community involvement in resolving environmental problems.

What to do ?

- * Drawing up and implementing specific Environmental Educational strategies, highlighting, identifying and fostering the role of governmental organizations and institutions, mass media and social organizations, as well as their scope, interrelations and integrity.
- * Annually designing and implementing the National Program of Environmental Dissemination, as a basis for the development of

several activities, which will be conveniently adjusted to the institutional, territorial and community specificity and requirements.

- * Improving and expanding the introduction of the environmental scope in the educational, training and extension programs, both in the National Educational System, and in Higher Education, enhancing and expanding the operation of the National Network of Environmental Training.
- * Fostering and facilitating the development of environmental education and Dissemination activities in the recreational, cultural and scientific institutions, social organizations and scientific societies, which play an important educational role through informal ways for children, youths, the community and the whole population.
- * Incorporating and developing the environmental subject, particularly the aspects related to the impact of the productive and service activities on the environment, in upgrading and training programs of executive and technical staff, as well as the rest of the personnel working there.
- * Promoting and joining People's Councils (Community Organizations) in educational activities with the population, which comprises conducting training and self-sufficient environmental tasks, related to the conditions and needs of each region, particularly those settled at fragile ecosystems or connected to major natural resources.
- * Fostering the drawing up of textbooks, brochures, etc., which further expand up-to-date knowledge and the Cuban experience concerning the diverse sectors of the environment.
- * Upgrading the role and responsibilities of mass media in incorporating the environmental scope to TV and radio programs, printed press and graphic dissemination, both at the national and local level, as well as Disseminating abroad our accomplishments.
- * Encouraging and supporting in state organizations and institutions, through their dissemination outfits, the incorporation of the subjects of protection and sustainable use and exploitation of specific natural resources for which they are responsible or connected to, in their productive and services activities.
- * Sponsoring the "Program for Life" TV spot, arranged by the Ministry of Education and others alike, since they play a very important role in community environmental education.

9.- The Instruments for Economic Regulation

The use of economic regulation, as an instrument of the environmental policy and management, is envisaged on the basis of enacting tax, duty and differentiated taxes policies, among many others, on the activities with an impact on environment.

International practice has proved that regulatory measures of environmental control are not as effective as sustainable development requires. On the grounds of this reality, **the instruments of economic regulation** have been enacted as indirect ways of regulation, based on the interrelation between the processes of economic-social development and the environmental problems.

The economic instruments are the tools of economic management aimed at environmental protection and sustainable use of natural resources.

What is wanted ?

To exert an influence on the use and sustainable management of natural resources and environment protection, through the use of adequate economic instruments for the current conditions of the country and consistent with the rest of the instruments set forth in this strategy, facilitating the appraisal of the outcome.

What to do ?

- * Developing methods of appraising and registering the resources of the environmental heritage, which allow for the implementation of the economic environmental instruments.
- * Timely and gradually enforcing taxes protecting environment and natural resources within the framework of the Tax Laws.
- * Enforcing differentiated duties for the import of products detrimental to the environment.
- * Enforcing compulsion, in the financing of investments with major environmental impact, to envisage in the projects funds for the measures for environmental protection and restoration.
- * Fostering investments beneficial to environment through the grant of middle and long term soft credits, accelerated depreciation rates, exemption or cutbacks on taxes and duties and the exceptional grant of subsidies.
- * Establishing environmental restoration funds for those economic activities exploiting certain ecosystems.

- * Submitting a proposal for the creation of the National Environmental Fund, geared at totally or partly financing projects and activities of environment protection.
- * Appraising the enactment of heritage accounts, as a solution to the problems of appraising and registering natural resources.

10.- Environmental Indicators for decision-making.

An adequate system of environmental information should be the basis upholding the national environmental policy and management, which aids the decision-making process on environmental protection and sustainable use of natural resources, while it can be used in assessing the implementation of policies and strategies in this regard.

The development of an integrated system of information on environment ensuring the proper gathering, processing and flow of information; and a higher stage, the development of aggregated environmental indicators, make up an important instrument in the appraisal of progress or drawbacks in the national environment status.

It is essential to continue upgrading a simple environmental information system, which in a short term allows for more effective decision-making.

What is wanted ?

To develop a system of environmental information and data, enabling a systematic appraisal of the status of the national and territorial environment, and helping to draw up policies and make decisions on environmental management.

What to do ?

- * Defining the assembly of environmental indicators to embody in the National Statistics System, which will be used in making the corresponding decisions, both at national and territorial level.
- * Organizing the system allowing for the collection of these data,

the verification of their reliability, processing them and ensuring the information flow towards the different levels concerned with the decision-making process.

- * Integrating the environmental indicators into the development plans of the national economy.
- * Preparing systematic reports comprising the status of the national and territorial environment, by the corresponding authorities and the degree of fulfillment of our international environmental commitments on truly reliable basis.

11.- The International Environmental Policy

In the current world, there is a high regard for the actions of the countries aimed at preserving environment; therefore, the international environmental policy may become a very useful element in advocating the revolutionary work.

The environmental issues are a source of intense international debate, in which developing countries endeavor to prevent the creation around these issues of new and dangerous ways of dependency, additional to those already existing; and to have the developed countries actually assuming the higher responsibility they are due, with the common goal of accomplishing a healthier environment in the planet.

Cuba has ratified the main international environmental agreements, setting forth its political will to assist in improving the national, regional and global environment. Likewise, it is actively engaged in the activities of the United Nations Environmental Program (UNEP).

What is wanted ?

- * To continue actively developing the Cuban international environmental policy, upholding the majority positions of the developing countries in this field, particularly Latin American and Caribbean countries, as a logical consequence of the domestic policy of the Revolution, in which advocating sovereignty, equity and the struggle for development to unfold in harmony with Nature, are intrinsic to its nature.

- * To set forth the basic principles Cuba upholds regarding foreign policy in the field of environment: inalienable right to development, sovereignty of the countries on their natural resources, the concept of ecological debt, confrontation with the tendencies aimed at enacting protectionism policies in the market, under the justification of the need to protect the environment and the need that donor countries fulfill their commitments in Official Aid for Development, rejecting the latest tendencies intended to reformulate or replace the standing mechanisms of development financing.
- * To reach excellency in Cuban participation in Conventions and other International Environmental Agreements, due to their economic implications and the impact on the country competitiveness, with a view to fully benefit from the valuable experiences and technical knowledge they provide.
- * To achieve coordination and concert on environmental issues between all the State organizations, with a view to joint actions, due to its impact on different spheres of activity (trade, agriculture, energy, intellectual property rights , normalization, fisheries, tourism), and on topics addressing vital concerns like sovereignty, competitiveness, technology transfer and others.
- * To disseminate abroad the environmental feats attained by the country, the existence of a potential of scientists and qualified professionals and the experiences of the current Cuban environmental management, to international cooperation; to environmental, to governmental and to non-governmental organizations.

What to do ?

- * Establishing a solid system of international cooperation and collaboration, setting forth the basic guidelines for its implementation, with a view to enact the Cuban Strategy.
- * Drawing up and periodically updating documents with the basic Cuban positions on major environmental problems, and forwarding them to the Bodies of the State Central Administration, the Parliament and to Cuban missions overseas, in addition to the organization of periodical meetings for exchange.
- * Implementing procedures which ensure the national integrated fulfillment of the international commitments embodied in conventions and other multilateral environmental agreements and in the international organizations involved in the subject.
- * Ensuring the systematic drafting of materials describing Cuban environmental feats and their Dissemination overseas through our diplomatic missions.
- * Expanding the range of the search for financing of environment-prone projects, to the whole system of international organizations involved in this activity.