

I.- Summary

The Republic of Cuba is an archipelago, which lies on the westernmost point of the island arc of the Antilles, in the midst of the North American and South American continents. It covers 110,992 sq.km, and consists of the Island of Cuba, Isle of Youth (Isla de la Juventud) and other 1600 islets and keys, accounting for 0,08 per cent of the Earth's lands. The Cuban island ranks fifteenth among the largest islands of the world.

Cuba has a tropical humid climate featured by marine influence and semi-continental traits. Average temperature ranges from 24°C to 26°C. The mean rate of annual rainfall ranges from 800 to 1400 mm, depending on the location on the island and time of the year. Evaporation amounts to up to 2300 mm a year.

According to the political and administrative division, Cuba is divided into 14 provinces and 169 municipalities, including the special municipality of Isla de la Juventud. The population of the island is 11 093 152 million, with a population growth rate of 0,9 per cent and a life expectancy at birth of 75,3 years. Out of this population, 22,0 per cent are under the age of 15, and 13.14 per cent correspond to 60 year-old people and over. Median age of population is 34 years. Sex ratio is 100,3 men to 100 women. Nearly 20% of the population live in the capital city, Havana.

Cuban economy is essentially agricultural, relying mostly on sugar and related industries, and also including fishing, mining and tourism; the latter being the most dynamic sector throughout the last decade.

Land surface devoted to the agricultural practice accounts for 62,7% of the total solid ground; 55,4% of this corresponding to cultivation of sugar cane, coffee, cocoa, citrus, fruits, kenaf, tobacco, pasture, forests, vegetables, grains, roots and tubers.

Four of the five environmental problems identified in the Cuban National Environmental Strategy, namely soil degradation, deforestation, terrestrial and marine water pollution and the loss of biological diversity, are either directly or indirectly induced by agricultural and livestock, sugar and forestry activity. At the same time, they are related to the goals set by the United Nations Convention to Combat Desertification and Drought signed by Cuba in 1995 and ratified in March 1997.

Desertification affects 14% (1 580 996 ha.) of the country's territory. Soil degradation resulting from land mismanagement and land misuse by man in the course of time is the main cause for the emergence of marked signs of desertification. Sub-humid environment sub-areas with fragile ecosystems potentially degrading in aridity cover 866 743 ha., and dry sub-areas account for 714 253 hectares.

The fact that 76,8% of Cuban soils account for the lowest crop yields does not allow deriving more than 30% of the production potential from the cultivable species planted there. This situation

indicates that one of the direct effects of desertification is the reduction of soil capacity to produce food and thereby meet the most pressing needs of the population.

In the last few decades there has been an aggravation of the situation due to drought which, by itself and along with other anthropic processes, leads to severe and harmful consequences on an increasing number of socio-economic activities.

An assessment of climatic aridity rates has showed the existence of semi-arid plots of land towards the southern point of Guantánamo and Santiago de Cuba provinces, whereas sub-humid areas cover a sizeable portion of the eastern provinces, the coastline of Camagüey and other sites of the country, which are prone to severe desertification processes.

Strategies and priorities set out in the framework of programs and policies for sustainable development

From the 60's, the country became involved in raising the living conditions of the population, and the rational use of natural resources intended to ensure the economic and social development of territories. Therefore, scientific research was organized, the Pedologic and Agro-chemical Service established and territorial management processes were implemented, giving priority to soil conservation and rehabilitation.

In this stage, the following milestones stand out:

- 1960. Implementation of Reforestation programs undertaken during 40 years, which has enabled to increase the forest cover from 14 up to 21% of the country's total area.
- 1964. Establishment of the National Center for Soils and Fertilizers of the Institute for Soils of the Academy of Sciences of Cuba.
- 1980/85. Choosing the coastline strip of Maisí-Guantánamo towards the easternmost sector of the country as the most drought-affected area for environmental, economic and social rehabilitation.
- 1960-90. Conceiving and taking actions to improve soils devoted to agricultural practices, to tackle ineffective drainage and soil conservation for most significantly affected areas of the country.

The above strategies, programs and decisions made all led to conducting intensive work to combat already identified effects of soil desertification and drought control.

Successive changes in the country's environmental policy have contributed to improve the capabilities to approach the environmental problems already identified; the following being the most important moments:

- the amendment to the 1992 Constitution, the moment when our Organic Law is enhanced with the inclusion of the concept of sustainable development.

- the establishment in 1994 of the Ministry of Science, Technology and Environment (CITMA) and the arrangement, since then, of its institutional system at national and territorial level.
- the development of the National Program on Environment and Development (Cuban adoption of Agenda 21) and implementation of a National Environmental Strategy and based on this, the development of territorial and sectorial strategies.
- the enforcement of Law 81, Law of the Environment by the National Assembly, on 11 July, 1997, of its body of contraventions and other laws and supplementary decrees which make up the environmental legislation system in force.
- the Strategy for international multilateral collaboration for 1999-2000.

Institutional measures formulated to implement the Convention

Prior to 1994, there was the National Commission for Environmental Protection and the Rational Use of the Natural Resources (COMARNA) in Cuba. It was responsible for full implementation and control of the environmental activity in the country. From the Summit of Rio, which was the framework for the commitment of a wide range of environmental sectors, the Cuban government decided to develop an organizational structure to address the environmental issues, which main components make up the Ministry of Science, Technology and Environment (CITMA). CITMA is comprised in turn of the Environmental Policy Division, the Environmental Agency and its eleven Centres engaged in Management, environmental awareness and Scientific Research in this field. There are also the 14 Provincial Environmental Units, and the remaining bodies of the Central Administration of the State, non-governmental organizations and scientific and social Associations, which have undertaken the protection of the natural resources.

CITMA acts as the National Focal Point to the UN Convention to Combat Desertification and Drought as well as other International Treaties. It is also the co-ordinator of the National Group to Combat Desertification and Drought, established in July 1995, consisting of 36 representatives from 24 Institutions and Agencies of the Central Administration of the State, Scientific and Teaching Centres and non-governmental organisations.

As the National Co-ordinating Body, this Group fulfilled a methodological preparation stage, consisting of meetings, workshops and seminars with good representation and participation of national and local entities. In addition to coordinating the development of the National Action Plan (NAP), this Group was responsible for the arrangement of activities in the context of the National Awareness and Development Campaign, every year, as well as activities on the celebration of 17 of June, the World Day to Combat Desertification and Drought.

Work carried out by this Group has been co-ordinated with other National Groups such as the National Watershed Council (CNCH), with which a new approach to the country's environmental work was begun; the watershed being regarded as a basic unit for environmental management. At the same time, this approach becomes a way to bring together all actions to combating

desertification, preserving biological diversity, understanding climate change, and other actions taken by state agencies in the natural context of watersheds.

Backup participatory process for working out and implementing the action program

Drawing up the National Program to Combat Desertification and Drought was one of the Cuban commitments upon ratification of the International Convention to Combat Desertification and Drought, in 1997. Therefore, the Government is responsible for its implementation, financial support and fulfilment of foreseen actions. In order to fulfil such commitments, the Government puts forward the operational structures and mechanisms set out in the country as well as its capacity to mobilize all the sectors of the population.

Document preparation relied on the participation of all governmental, scientific, citizen and non-governmental institutions that matter. This ample participation was possible due to the following:

- the multisectorial and multidisciplinary nature of the National Group to Combat Desertification and Drought.
- national workshops attended by the scientific community, local government representatives, administrative leaders from territorial government bodies, farmers and grassroots producers involved in identifying the elements which make up the National Strategy.
- a national campaign for public awareness, education and dissemination of information through the press, radio and television, contests among children and youth in schools located in areas affected by desertification and drought.
- seminars for farmers; joint analysis of areas by technicians and scientists.
- shooting of documentary films and other informational and educational materials and finding alternatives to take information to most far-off communities, for example, developing appropriate transportation means furnished with video equipment; and participatory discussion of said films.
- workshops held to work out the different stages of NAP with the participation of representatives from the National Group to Combat Desertification and Drought, the Specialist Group of the National Watershed Council and other representatives from guest institutions.

Thorough analysis of facts (diagnosis stage) within the NAP was carried out in its entirety by national consultants, based on ample and valuable information available in the country as a result of more than 40 years of scientific research on natural resources as well as the practical experience, the traditional and local knowledge base of rural people and settlers, particularly in affected areas. Information collected and drafted, along with the Country Study on Biological Diversity are documents of an inestimable scientific, technical and practical value, for they are daily work tools for implementing the Plan's actions.

The formulation stage of the National Strategy and further actions for its implementation (Action Plan) was certainly the most painstaking task of the process, due to the inevitable need to match this Strategy with principles and priorities set out in the Convention to Combat Desertification and

Drought, and the Regional Annex for Latin American and the Caribbean; the environmental law in terms of protection of natural resources and other related issues, in force in the national territory; in Regional and sub-Regional Action Programs passed and in force such as the Caribbean Environmental Program, the Barbados Action Plan for Sustainable Development of Small Island Developing States, the Regional Action Plan on Desertification and Drought, among others.

Women's participation in this process is particularly apparent in all activities and decision-making levels. Women's involvement and the issue of gender in all National Plans and Programs has been a permanent concern of the Cuban Government, for example the implementation of a system of encouragement and facilities for women's education and training, as well as their involvement in labour and policy. Proof-positive of this are the rates of women's participation in the technical and professional labour force of the country, which accounts for 66,1%. It means that women are granted full exercise of equal rights.

Backup consultation process for NAP's design and implementation, and partnership agreement with Party developed countries and other entities concerned

The consultation process intended to work out the NAP was conducted simultaneously with activities for NAP's implementation in affected areas. The process lasted almost two years during which 14 Provincial Workshops were held, attended by more than 500 farmers, producers, representatives from provincial Governments and local institutions. Each territory worked out its plan of action to combat desertification and drought, which was approved by territorial governments and non-governmental entities, with the participation and support of the existing scientific community in each territory. The different progress stages of the plan were shown to the national scientific community, and to national and international specialists. This was likewise submitted to high governmental authorities for consideration. Lastly, the document was subject to revision; criteria thereupon being forwarded, and finally approved in writing by Agencies of the Central Administration of the State, specifically by Entities responsible for NAP's implementation.

Major co-operation agreements include those with the International Fund for Agricultural Development (IFAD), the Food and Agricultural Organization (FAO) which, based on the support of the Convention Secretariat and the Cuban Government, served to fund the Project TEMP / INT / 913 / mul, known as "National Action Program to combat desertification and drought: A plan for the utilization and integrated management of natural resources of Cuenca del Cauto (Cauto Watershed)" which amounted to USD 159 000.

In co-operation with the German Government through GTZ Agency, a project is being worked out on "the support to the implementation of the National Action Plan to Combat Desertification and Drought", to start this year. This will be both national and local in nature; the former, in terms of implementation of the Strategy in the country, and the latter, in terms of the target area to the south of Cauto River Watershed.

Significant support to conduct national and international activities have been given by FAO, IFAD, the United Nations Development Program (UNDP) and the United Nations Environment Program

(UNEP).

On the other hand, the NAP is involved in actions included in the Regional Action Plan (RAP) to Combat Desertification and Drought, particularly in the context of the Network of Institutions, which make up this RAP.

Steps taken or planned in the context of NAP, including measures to improve the economic environment, preserve natural resources, expand the institutional organization and knowledge on desertification and follow-up and assessment of drought effects

The National Action Plan is comprised of seven subject areas, which cover major problems identified during the stage of Diagnosis, and included in the National Strategy to combat Desertification and Drought as basic lines of work.

These subject areas cover socio-economic development of affected areas; development and tailoring of legal instruments, policies and strategies; citizen education and involvement; scientific research and technological innovation; institutional strengthening; and international co-operation.

The highest priority of the Action Plan is the socio-economic development of affected areas as the best expression of local work. For such purpose, 81 activities of concrete implementation have been listed; plus 17 organizational activities out of which, 13 will be implemented at national level, while 68 will be implemented at local level. Each step is part of the local plans to combat desertification, taken also in the context of the National Action Plan.

Due to governmental responsibility vested in the Plan of Action, 98% of tasks foreseen are borne out directly or indirectly by Agencies of the Administration of the State, both at central and local level, while joining forces with other national entities and organizations.

Ways and means for implementation of actions of the National Program to Combat Desertification and Drought focus on two basic lines of work, which take shape as 16 development Plans and Programs as well as Strategies for implementation of other international agreements to which the NAP is linked, mainly those which address Biological Diversity and the United Nations Framework Convention on Climate Change.

NAP's implementation is foreseen to take place on a short-, mid- and long-term basis, from 1 to 10 years, due to the fact that recovery of affected ecosystems is directly in proportion to the degree of damage and the availability of resources. In addition to their being regarded a biological entity, they call for long-term rehabilitation. Actions are consistent with development areas listed in the Strategy, which in turn includes those concrete actions foreseen at national and territorial level to fulfil the objectives, namely:

1. Steps taken to prevent natural and anthropic disasters, such as drought, forest fire, soil degradation processes, deforestation.
2. Steps taken for soil recovery and rehabilitation, water quality preservation and sustainable

- use of natural resources.
3. Steps taken to improve the quality of life of the population in affected areas, such as increasing and improving the quality of basic health and educational services, drinking water provision and sewer system and household energy.

Allotment of financial resources in the national budgets to support implementation as well as financial and technical backup provided according to needs, their identification and priorities

The Plan of National Economy is the most tangible expression of the realization of the National Budget and the Cuban Economy Planning. Based on this, funds are annually provided to each State entity and agency to carry out actions, which include those to combat desertification and drought. In this sense, administration bodies enhance their plans with investments devoted to environment and the protection of natural resources.

Accomplishment of this plan of the economy is local in nature and it is performed by Administration Entities whose power reaches the nation, provinces and territorial enterprises. Local governments at provincial and municipal level, as well as within Popular Administration Councils also participate, thereby ensuring direct access by local communities to budget allocation.

At present, the Environmental Fund is being developed, to be administered by the CITMA Environmental Agency. It is expected that this Fund may devote a section to combat desertification and drought, as envisaged in the National Program to Combat Desertification and Drought.

Review of benchmarks and indicators used to measure progress and assessment

During NAP design, several benchmarks and indicators were outlined to be used in Cuba from the technical standpoint for progress assessment of steps taken. They are closely linked to environmental impact indicators introduced to measure and assess the country's environmental status.

With regard especially to land degradation, a research project is being conducted which, based on a 24-indicator survey of dry environment areas, will choose those indicators which best suit the Cuban conditions. These references should be authenticated in the space-time framework, and class boundaries determined according to intensity. The purpose of this study was to assess the measurable indicators of the global goals to combat desertification and abate drought effects as well as to contribute to sustainable development of affected areas, based on the island nature prevalent in the Cuban archipelago. In the meantime, some measurable indicators have been chosen which may serve as basic tools to assess increased productivity of soils, the results of actions taken to prevent degradation; for rehabilitation of soils affected; to preserve natural resources and utilize them on a sustainable basis, all of which will benefit the improvement of the living conditions of communities.