

**NATIONAL REPORT
ON DESERTIC CONDITIONS
AND DROUGHT**

REPUBLIC OF PANAMA

“EXECUTIVE SUMMARY”

SUMMARY

The Republic of Panama is located in the Southern end of the Central American Isthmus, in the Northern Hemisphere. Panama boundaries are: To the North with the Atlantic Ocean, to the East with the Republic of Colombia and to the South with the Pacific Ocean and the Republic of Costa Rica.

Panama's has a continental land extension of 75,517 Km²., and a population of 2,674.490 inhabitants. The topography is mainly of low lands and hills of less than 700 mts. of altitude (70% of the national territory). The Pacific and Atlantic Coasts have a total length of 1,700.6 and 1,287.7 km., respectively. Due to the Isthmus narrow conditions, low elevations, geographic location and coastal extensions, it offers excellent conditions as a maritime country.

Panama has a unitary, republican, democratic and representative government. Its territory comprises the territorial surface, territorial waters, subsoil and airspace, is divided politically and administratively into 9 provinces, 67 districts, 549 precincts and 4 indian territories.

The Panamanian Isthmus has five types of climates. Tropical very humid, tropical humid, and tropical dry, predominant of the lowlands. In the highlands the climate is predominantly humid and mild, and mild and very humid. There are two definite climatic seasons, the dry season, which starts from mid-December to April and the rainy season that extends from May to December.

There is a region of the country known as the "Dry Arch", where the dry season extends up to seven consecutive months. This area covers approximately, 240,000 hectares. It has important inland cities, with a total population of 250,000 inhabitants, who suffer the rigorous process of desertic conditions.

The environmental and hidrographic watersheds degradation, becomes quite evident in the subtle and shrewd desertic conditions that prevail in the Dry Arch of Panamá, where there is an extensive exploitation of the subsoil waters, and which rates of extraction and availability are unknown.

Likewise, the proliferation of dangerous events such as floodings and overflows during the rainy season, such as those that occurred in the City of Panama and capital cities of different provinces, resulting in the loss of human lives, millions of Balboas in material and agricultural damages; the progressive destruction of the hydric regulation capacities of the national hydrographic watersheds, such as the Canal hydrographic watershed, Bayano, La Villa, Santa María and Chiriquí Grande, Caimito, Pacora and Chiriquí Viejo, where we have a report of **soil layer loss of 3 centimeters**, a soil of great fertility in the highlands of Chiriquí.

The country, in general, lacks a specific regulation for the handling and conservation of soils, and the hydrographic watershed, which results in an inefficient environmental action, insofar as to technical personnel, infra-structures, physical resources and budgets to support the limited personnel. Currently, the principal causes for soil degradation are soil erosion, resulting from the loss of vegetation surface layers, or deforestation, the application of obsolete production practices and lack of soil conservation measures.

On the other hand, the process of housing developments on land that is suitable for farming, agricultural-industrial activities and cattle breeding. Also, the fact that farmers and cattlemen use fire, chemical fertilizers and pesticides; in addition, the peasants utilization of scraping and burning practices, indiscriminately, as farming methods. This is a major problem in the majority of the Pacific slopes, with greater intensity in the highlands of Chiriquí, where the loss of soil is greater than 200/ton/per year. Chiriquí's East sector, Veraguas North sector, Los Santos, Herrera, Panamá West sector, Bayano's Basin, and Darien's West sector. In the Atlantic slopes there is an increasing process of soil deterioration in the upper and lower coast of the Province of Colón. Among the actions to pursue, we identify the loss of soil, erosion and sedimentation, For this purpose, the Government created the National Environmental Authority, the Faculty of Agricultural Sciences and other institutions.

In conclusion, this situation has created an irreversible degradation of 27% of the country's soil, and is deeply-rooted in the Dry Arch region of the country, because of its fragility and disproportionate impact in the environment. Thus, creating a growing process of desertic conditions characterized by acute droughts that result in losses to the domestic and economic activities of the communities.

The environmental protection in Panama is based on disperse regulations, in addition to the weakness of the institutions, and lack of financial and human resources. These limitations prevented the adequate application of existent environmental policies to solve the country's basic ecological system problems.

In response to the need of organizing and unifying a national environmental policy, and an efficient system to face the national environmental problems, the Government enacted a General Environmental Law on July 1, 1998. This law defines the basic principles of the environmental policy and, creates the National Environmental Authority (Autoridad Nacional del Ambiente -ANAM). Thus, ANAM assumes the responsibilities and functions previously held by the National Institute of Natural Resources (INRENARE) which disappears with the creation of the new Institution.

ANAM gives priority to the regulatory process focusing its effort in the most sensitive environmental actions to comply with the environmental policy, giving priority to the areas of major progress, or areas that are strategically relevant for a harmonic development of the environmental process. In this capacity, we identify three areas to initiate the regulation process.

- a) The Evaluating Process for Environmental Impact;
- b) The procedures to establish environmental quality norms and maximum allowable limits; and,
- c) The mechanisms for citizens participation.

For these three areas the regulation project is underway and likewise, the consultation process, through workshops and meetings with the social sections involved. The Official Gazette No. 24,014 of March 21, 2000 establishes the regulation procedures to prepare the norms for environmental quality and maximum permissible limits; also the formation and function of the environmental consultation committees, through Official Gazette No. 24,015, of March 22, 2000 that regulates the process of Environmental Impact Evaluation.

The General Environmental Law compiles and integrates the environmental legislation which was scattered in the different ministries, institutions and authorities. Nevertheless, we recognize the fact that there are certain legal loopholes, duality of functions, and conflicts of authority. These factors limit the full application of the Law in certain key sectors of the environmental action; which also concentrates the majority of the environmental concerns of the Panamanian society, as reported by the National Environmental Strategy.

Many of the conflicts could be resolved by strengthening the institutional coordination, encompassed within the Environmental Intra-institutional System or the Web for Environmental Section Units. Nevertheless, on a mid-term period, it will be necessary to have a greater environmental policy integration with sectional policies and the development of tools that determine the different institutions roll and functions, and the strengthening of coordinating mechanisms.

Panama has ratified since 1963 up to the present, twenty-one (21) Agreements or Global Protocols related to environmental subjects and ten (10) Regional Agreements since 1954, among which we can mention the following;

- United Nations Convention on Climatic Changes
- Convention on Biological Biodiversity
- Convention for the establishment of an Interamerican Commission for Tropical tuna fish
- Constitutional agreement of the Central American Commission for the Environment and Development

Among the activities adopted to implement the Convention on Desertization is the implementation of workshops for regional consultations in critical areas of the country, such as the highlands of Chiriqui and the Dry Arch of the country in the central provinces. Workshops at national level in the City of Panama. For these events we had participants from government institutions, non-government institutions, several production sectors, independent farmers and representatives of the civil society.

The tools identified in the Country's Consultation Workshops to attack the problems of desertification and degradation of the land are the following:

1. Awareness and Environmental Education
2. Financing and Urgent Investments
3. Legal Context
4. Attack on Poverty
5. Citizen Participation
6. Scientific Studies and Investigation
7. Intra-institutional Coordination and Institutional Strengthening.
8. Integrate a new methodology for Sustainable Development in the economic growing process.

Also, in the consultation workshops specific recommendations were presented on the actions to implement each subject of the National Program against the Desertification and Degradation of the Soil.

Environmental Education

It is important to implement a "Plan for Environmental Education" both formally and informally, in elementary, high-schools and university levels. Also, addressed to the different sectors of the society, incorporating the subject of the fight against desertic conditions to the different on going projects.

Financing and Urgent Investments

Within the specific actions related to this subject, it is important to propose projects that allow the identification of critical areas and the actions required for their

reduction. These programs should also cover women in rural areas, since they carry out multiple tasks in their homes, plus farming, and cattle breeding. For these purposes they encounter major difficulties in obtaining credits and any other type of support.

Legal Scope

As a result of the national consultation regarding the necessary legal actions to adopt, there are relevant issues to consider such as, existent legal loopholes, definition of institutional authority and enforcement of the regulations in the Republic of Panamá, including application of exemplary sanctions to violations of the Environmental Law. The consultation also highlights the development of training and updating for the government authorities and local governments to create their awareness of the environmental laws and their enforcement.

Attack on Poverty

We must begin by creating a vision of the programs and integrated plans we require to attack poverty. These programs must consider training for the affected populations in sustainable development methods, since the problem of desertic conditions cannot be resolved by just applying technical measures. We must incorporate within the national policies and strategies for programming, the fight against desertic conditions and soil degradation. In this sense, it is important to highlight the synergetic effects of other conventions, such as climatic changes and biodiversity, that would allow to extend coverage and efficiency for the proposed measures.

Citizens Participation

As one of the main aspects, we suggest the adoption of a modern and participative system for environmental action, where the participation of the civil population is guaranteed in the fight against soil degradation, desertic conditions and drought.

Studies and Scientific Investigations

It is important to implement Title IV, Chapter VII of Law #41, the General Environmental Law, which refers to the Technological and Scientific Investigations indicated in articles 51 and 52, that states as follows:

Article 51. The Government will promote environmental scientific and technological investigation programs, both public and private, to have greater elements of judgment in the decision making process for national environment.

Article 52. The National Environmental Authority shall coordinate the preparation and execution of the permanent program for technological and scientific investigation, oriented towards environmental actions and natural resources.

Inter-Institutional Coordination and Strengthening of Institutions

It is suggested that the relevant parties which are the communities, government organizations, non government organizations, local governments, and donating organizations, coordinate and cooperate with the development of programs and their implementation, as well as the creation of a coordinating commission to follow up and observe advances, problems and results based on the Action Plan.

Integrate a New Style of Sustainable Development to the Economic Growing Process

As a general policy of State and recognizing that the attack to the problems of desertic conditions and degradation of the environment, is a direct attack to the problem of poverty, it is essential to incorporate to the development of national policies and strategies of the Government, the Action Program for the Fight Against Desertic Conditions and Soil Degradation.

To support the Convention implementation, considering the subject of desertic conditions, we do not handle budgets, nor financial contributions. Nevertheless, within the National Environmental Plan that ANAM executes with financing of the Inter-American Development Bank (BID), there is the component of Environmental ordinance to be executed within three years, which may be considered as an action related to the subject of Desertic Conditions.

According to the General Environmental Law, it is the National Environmental Authority (ANAM) that prepares at the end of each government period, a Report of the Environmental Situation of the Country. This Environmental Report may be considered as the Governments' mechanism to follow-up and evaluate the environmental actions in Panamá.

The operation of the National System for Environmental Information has been proposed, and was created under Law No. 41, which has the objective of gathering, systematizing and distributing environmental information of the Government between government organizations, as well as public and private organizations. In this manner the capacity of the country is strengthened and is able to produce impact indicators.

Poverty is broadly extended in the country, covering 37% of the Panamanian population. Within this bracket 27% live in extreme poverty. Several studies have shown that extreme poverty is concentrated in 24 districts (a third of the total districts that conform the country), distributed in the Atlantic Coast, the Indian areas of Chiriquí, Bocas del Toro, Veraguas and Darién.

In Panamá, the growth rate of the national production, measured according to the Gross National Product (GNP), has descended in every decade after the 60s'. During the 90s' the growth rate also descended. The GNP rate grew 4.4% in 1997. Yet, the social problems have not been mitigated. Panama is in need of a vigorous growth rate in order to face the increasing needs of the population and to up-grade their income per-capita.

In the Latin America context Panamá is one of the countries with more resources destined to Education. The importance that the Government gives to this instrument of social promotion is shown with the Education expenses, that in average represents 4.9% of the GNP and 10% of public expense. Nevertheless, the system still shows inequity symptoms, such as low quality and inefficiency, which act negatively in the fight against poverty, unemployment and social margination.

The inequity of the system is reflected in the low coverage rates observed in elementary and high school education, especially in the rural areas, urban marginated areas, and Indian areas.